"obliged" to cope with tariffs and quotas imposed by their Government's to protect them.

Our Government's policy appears to have been formulated largely by people who, for some reason, seem unable to fully grasp the full significance of these matters—who, for some reason, seem to prefer accepting the biased, often distorted, presentations of representatives of foreign countries to the well-documented case histories presented them by members of Congress and industry—and who, for some reason, not unlike my friends, subscribe to economic theory as opposed to practical economics.

Our society, and many of its institutions, have recently experienced profound changes. This has resulted in a reshuffling of priorities accompanied by change in attitudes and perspectives. In short, it's a brand new "ball game". For this reason alone, I think this important matter should be properly examined in the light of the realities of today by a high-level committee, appointed by the President, with provisions for adequate representation for concerned industries and labor: One of these realities being the possible social as well as the economic consequences of any such policy at a time when the expanding labor market will require higher levels of employment, the communities increasing tax revenues, and the country has more social problems then it can presently cope with.

SENATE—*Wednesday, May 6, 1970*

(Legislative day of Tuesday, May 5, 1970)

The Senate met at 11 o'clock a.m., on the expiration of the recess, and was called to order by Hon. HARRY F. BYRD, JR., a Senator from the State of Virginia.

The Chaplain, the Reverend Edward L. R. Elson, D.D., offered the following prayer:

O Lord our God, with aching heart and agony of soul we come to Thee this day. Not in any worthiness of our own, but in deepest need we plead for the higher wisdom which overrules our human frailties and our national sins. Draw us all closer to Thee that we may be closer to one another in understanding and in love.

O God, heal the brokenness, the disorder, and the dispeace of this Nation. Forgive the rancor, the hate, the vindictiveness, the violence, the selfishness, and the pride which poisons our common life and obstructs our doing Thy will.

Be with the youth of this land that their flowering idealism and dreams of a new world may not be crushed or displaced by disappointment, cynicism, and fear. Give us ears to hear their message and hearts to understand their yearnings. Be with all the young, on campuses, on missions of mercy throughout the world, and in the Armed Forces, guarding them in moments of temptation and strengthening them in hours of peril. Give comfort to those who mourn victims of violence.

To the President, to the Congress, and to all our leaders give that higher wisdom, that deeper insight, and that loftier courage which enable them to act not alone for today but for the coming day of Thy kingdom. Give us faith to see beyond the turbulence of today the working of Thy providence in the changing tides of time and eternity.

Make us worthy of Him who in the agony of His cross could commit His spirit to the care of the eternal.

Amen.

DESIGNATION OF ACTING PRESIDENT PRO TEMPORE

The PRESIDING OFFICER. The clerk will read a communication to the Senate.

The assistant legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, D.C., May 6, 1970.

To the Senate:

Being temporarily absent from the Senate, I appoint Hon. HARRY F. BYRD, JR., a Senator from the State of Virginia to perform the duties of the Chair during my absence.

RICHARD B. RUSSELL,
President pro tempore.

Mr. BYRD of Virginia thereupon took the chair as Acting President pro tempore.

THE JOURNAL

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Journal of the proceedings of Tuesday, May 5, 1970, be approved.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

ORDER OF BUSINESS

Mr. MANSFIELD. Mr. President, I suggest the absence of a quorum.

The ACTING PRESIDENT pro tempore. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

RAIL PASSENGER SERVICE ACT OF 1970

The ACTING PRESIDENT pro tempore. The Chair lays before the Senate the unfinished business which the clerk will state.

The ASSISTANT LEGISLATIVE CLERK. S. 3706, to provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13(a) of the Interstate Commerce Act, and for other purposes.

The Senate resumed consideration of the bill.

COMMITTEE MEETINGS DURING SENATE SESSION

Mr. MANSFIELD. Mr. President, I ask unanimous consent that all committees be authorized to meet during the session of the Senate today.

The ACTING PRESIDENT pro tempore. Without objection it is so ordered.

ORDER FOR RECOGNITION OF SENATOR YOUNG OF OHIO

Mr. MANSFIELD. Mr. President, in view of the fact that the distinguished manager of the pending bill is necessarily and officially absent at this time. I ask unanimous consent that the distinguished Senator from Ohio (Mr. YOUNG) be allowed to proceed, apart from the consent agreement, for not to exceed 5 minutes.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

SENATE RESOLUTION 404—SUBMISSION OF A RESOLUTION RELATING TO TRAGEDY AT KENT STATE UNIVERSITY

Mr. YOUNG of Ohio. Mr. President, the entire Nation was shocked over the recent mindless and tragic slaying of four students at Kent State University.

I report, Mr. President, that three other students are critically injured. One is paralyzed from the waist down, so there may be other deaths.

All this, on a peaceful campus just 30 minutes from where I live in Shaker Heights, where there had never been any violence before.

Students met to demonstrate. This was following the time the President of the United States referred to demonstrating students as "bums."

Unfortunately about 800 Ohio National Guardsmen were sent in. I hold the National Guard in admiration. Many years ago, I was a member of the Ohio National Guard. But, in recent years, the Ohio Guard outfit that was at Kent State University has accepted high school graduates and some high school dropouts 18 and 19 years of age.

There were approximately 100 guardsmen in the area of the shooting incident. Each guardsman had been supplied with 16 rounds of live ammunition. Those young men had not had adequate antiriot training. Suddenly, there were crowds of demonstrators and the National Guard hurled tear gas canisters at them. I have received reports that one youthful demonstrator hurled back a half filled canister of tear gas which struck a guardsman on his shoulder, or his rifle, and immediately that rifle was discharged accidentally. Instantly, his companions, trigger-happy National Guardsmen, shot down and killed four

students—two girls and two boys—and others may die.

Mr. President, that should not have been permitted to happen. The adjutant general and the deputy adjutant general of Ohio should be dismissed from their political jobs. They say that the men fired in self-defense.

I report that the entire casualties suffered by the National Guard were one guardsman who had a heart attack and dropped down on the ground and another guardsman who, at that instant, fainted. Those were their casualties—no shots. They tried to claim that sniper shots were fired, but no shots were fired.

Mr. President, this is an outrageous occurrence on the part of these men who lacked adequate training in mob control and antiriot procedures.

Mr. President, I submit a resolution to establish a special committee on the Kent State University disorders. The resolution provides for the establishment of a special committee of the Senate to be known as the Special Committee on Kent State University Disorders. It is to consist of six Members of the Senate. Two Senators from Ohio, Mr. SAXBE and myself; two Senators who are members of the Armed Services Committee, to be appointed by the chairman of that committee; and two Senators who are members of the Committee on Labor and Public Welfare, to be appointed by the chairman of that committee. The committee will select its chairman from among its members.

Mr. President, because of the pending business, I do not wish to take further time now to discuss this matter. I shall speak further on this tragic affair which should not have been perpetrated anywhere in the Nation, especially on the rustic campus of Kent State University. The two girls who were killed were not even participating and had nothing to do with any riot. There was no riot there whatever, just trigger-happy National Guardsmen who should not have been in the National Guard in the first place, probably got in there to evade the draft, were not properly instructed, and went wild. This all happened in an instant, and then the firing ceased. But the dead and the critically wounded were lying there.

This matter must be looked into and investigated thoroughly. I shall later speak at length on this matter.

The ACTING PRESIDENT pro tempore. Is the Chair correct in assuming that the Senator from Ohio does not ask for the immediate consideration of his resolution at this time?

Mr. YOUNG of Ohio. That is correct. The resolution is very important. However, I do not ask for its immediate consideration. I know that my colleague, the junior Senator from Ohio (Mr. SAXBE) will wish to speak on this subject also.

The ACTING PRESIDENT pro tempore (Mr. BYRD of Virginia). The resolution will be received and appropriately referred.

The resolution (S. Res. 404), which reads as follows, was referred to the Committee on Labor and Public Welfare:

S. RES. 404

Resolved, That (a) there is hereby established a temporary special committee of the Senate to be known as the Special Committee on the Kent State University Disorders (referred to hereinafter as the "Committee") consisting of the following six Members of the Senate:

(1) the two Senators from Ohio;

(2) two Senators who are members of the Armed Services Committee, to be appointed by the chairman of that committee; and

(3) two Senators who are members of the Committee on Labor and Public Welfare, to be appointed by the chairman of that committee.

The Committee shall select a chairman from among its members.

(b) Vacancies in the membership of the Committee shall not affect the authority of the remaining members to execute the functions of the Committee, and shall be filled in the same manner as original appointments thereto are made.

(c) A majority of the members of the Committee shall constitute a quorum thereof for the transaction of business, except that the Committee may fix a lesser number as a quorum for the purpose of taking sworn testimony. The Committee shall adopt rules of procedure not inconsistent with the rules of the Senate governing standing committees of the Senate.

(d) No legislative measure shall be referred to the Committee, and it shall have no authority to report any such measure to the Senate.

SEC. 2. (a) The Committee shall conduct a comprehensive study and investigation of the recent disorders at Kent State University, Kent, Ohio, which culminated in the deaths of four students and the closing of that university for an indefinite period of time, including the cause and nature of such disorders, the methods, techniques, and personnel utilized to restore and preserve order on the campus of that university, and the circumstances relating to the tragic deaths of four students and injuries to other persons.

(b) The Committee shall submit an interim report to the Senate not later than July 15, 1970, and a final report not later than August 31, 1970, on the results of its study and investigation, with such recommendations as it considers appropriate. Thirty days after submission of its final report to the Senate, the Committee shall cease to exist.

SEC. 3. (a) For the purposes of this resolution, the Committee is authorized to (1) make such expenditures; (2) hold such hearings; (3) sit and act at such times and places during the sessions, recesses, and adjournment periods of the Senate; (4) require by subpena or otherwise the attendance of such witnesses and the production of such correspondence, books, papers, and documents; (5) administer such oaths; (6) take such testimony orally or by deposition; and (7) employ and fix the compensation of such technical, clerical, and other assistants and consultants as it deems advisable, except that the compensation so fixed shall not exceed the compensation prescribed by the General Schedule Pay Rates established by subchapter III of chapter 53 of title 5, United States Code, for comparable duties.

(b) Upon request made by the members of the Committee selected from the minority party, the Committee shall appoint one assistant or consultant designated by such members. No assistant or consultant appointed by the Committee may receive compensation at an annual gross rate which exceeds by more than $2,800 the annual gross rate of compensation of any individual so designated by the minority members of the Committee.

(c) With the consent of the chairman of any other committee of the Senate, the Committee may utilize the facilities and the services of the staff of such other committee of the Senate, or any subcommittee thereof, whenever the chairman of the Committee determines that such action is necessary and appropriate.

(d) Subpenas may be issued by the Committee over the signature of the chairman or any other member designated by him, and may be served by any person designated by such chairman or member. The chairman of the Committee or any member thereof may administer oaths to witnesses.

SEC. 4. The expenses of the Committee under this resolution, which shall not exceed $———, shall be paid from the contingent fund of the Senate upon vouchers approved by the chairman of the Committee.

ORDER OF BUSINESS

Mr. GRIFFIN. Mr. President, I ask unanimous consent that I be permitted to speak for 5 minutes.

The PRESIDING OFFICER. Is there objection?

Mr. HARTKE. Mr. President, reserving the right to object, I wish to proceed with the pending business. We started this matter on yesterday. I am not averse to having comments on this subject.

I do think that we can finish the pending business in a relatively short time after the short statement by the distinguished Senator from Michigan.

I hope that we can finish the pending bill and then have comments on the subject discussed by the Senator from Ohio.

CAMPUS DISORDERS

Mr. GRIFFIN. Mr. President, I had the privilege of being present last evening when President Nixon briefed the members of the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations.

Among the questions directed to the President—and he indicated that we were free to report on this very interesting meeting—was one that referred to his use of the word "bum" with reference to some who engage in violence on the campuses.

The President related that he had used that word in a discussion that took place very soon after he had received a letter from a professor at Stanford University, a very distinguished scholar, who had worked for some 20 years compiling notes and research material on a subject in which he was deeply interested and concerning which he had hoped to write an important paper. He had written to the President and related how a building at Stanford was broken into and one of the students involved in a violent demonstration had destroyed his 20 years of scholarly work.

Then the President said, "The guy who did that is a bum." And I agree. I would go further and say that on many campuses there is a hard core group of students—and some who are not students—who spend much of their time fomenting violence and who are much worse than bums. I refer to a group of

radical revolutionaries who are dedicated and doing their best to overthrow the Government of the United States.

Mr. President, I feel the deepest sympathy for the families of students who were killed at Kent State University. That was a tragic incident.

Some are now pointing the finger of blame at the relatively untrained 18- and 19-year-old Ohio National Guardsmen who were given live ammunition and ordered into the Kent State situation only a few hours after they had performed duty in connection with a truck strike.

I do not know. Perhaps they should not have been issued live ammunition, but that was not their decision. It would appear that they panicked and overreacted.

But, Mr. President, I would point the finger of blame at the hard core of revolutionaries on some of our campuses who have been encouraged by a few radical professors and who have been allowed to run wild by namby-pamby college and university administrators who do not seem to have the backbone to expel those who foment and engage in violence.

Mr. President, going to a college or a university is a privilege and not a right, as driving a car is a privilege and not a right. One who violates and disregards the rules of the road loses his driver's license; his privilege to drive is taken away even though he may not be thrown in jail.

Those administrators who refuse to identify and expel the hard-core revolutionaries on their campuses who are fomenting violence and revolution are not doing their jobs as college administrators. Indeed, they are doing a great disservice to the United States of America as well as to their own institutions.

Mr. President, I have no doubt that the overwhelming majority of college students are not involved in these violent, illegal confrontations. Many may be sympathetic to some extent, but I am convinced that 90 percent, or more, of the students in our colleges and universities are interested in going to school to get an education before they start out trying to reform the world. And this is the way it should be.

Mr. President, I think it is about time that those who want to go to college for an education should be accorded some consideration. They have received very little up to now.

Mr. President, I yield to the Senator from Nebraska.

Mr. CURTIS. Mr. President, I thank the Senator. I commend the Senator from Michigan for his statement, particularly with reference to these hard-core revolutionaries.

The ACTING PRESIDENT pro tempore. The time of the Senator has expired.

Mr. CURTIS. Mr. President, I ask unanimous consent that I be permitted to continue for 1 minute.

Mr. HARTKE. Mr. President, reserving the right to object, I think that under the circumstances we ought to consult with the majority and minority leaders. If the Senators want to proceed with the debate on this matter, I would be perfectly willing to step aside. But I think there ought to be some order as to how we shall proceed.

Mr. CURTIS. Mr. President, I withdraw my request.

The ACTING PRESIDENT pro tempore. The time of the Senator has expired.

RAIL PASSENGER SERVICE ACT OF 1970

The Senate resumed the consideration of the bill (S. 3706) to provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13(a) of the Interstate Commerce Act, and for other purposes.

The ACTING PRESIDENT pro tempore. The bill is before the Senate. An amendment is debatable for 30 minutes.

Mr. HARTKE. Mr. President, I suggest the absence of a quorum.

The ACTING PRESIDENT pro tempore. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. PELL. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The ACTING PRESIDENT pro tempport. Without objection, it is so ordered.

Mr. PELL. Mr. President, as I understand the situation, each side has 15 minutes of time on an amendment.

The ACTING PRESIDENT pro tempore. The Senator is correct.

Mr. PELL. I understand that the rule of germaneness does not apply. The time is under the direct control of the manager of the bill and the sponsor of the amendment.

The ACTING PRESIDENT pro tempore. The bill is before the Senate. The germaneness rule is applicable.

Mr. PELL. Mr. President, in other words, I cannot talk on any other subject but the pending business at this time.

The ACTING PRESIDENT pro tempore. Except by unanimous consent.

Mr. PELL. Mr. President, I ask unanimous consent that I may talk for 1 minute on a subject not concerned with the pending business.

Mr. GRIFFIN. Mr. President, reserving the right to object, and I shall not, a similar request was made by the Senator from Nebraska. I feel that the Senator from Nebraska should have the 1 minute that he asked for. He should be considered in this matter.

Mr. PELL. Mr. President, I would have no objection to the Senator from Nebraska having 1 minute also.

The ACTING PRESIDENT pro tempore. An amendment must be offered so that there will be something before the Senate so that the time may run.

CAMPUS VIOLENCE

Mr. PELL. Mr. President, I rise at this time because the Senator from Michigan mentioned the use of the term "bums" by the President to describe students.

The ACTING PRESIDENT pro tempore. Who yields time?

Mr. PELL. Mr. President, I yield myself as much time as necessary out of my time on the bill.

I have 15 minutes, have I not?

The ACTING PRESIDENT pro tempore. The Senator from Rhode Island has 15 minutes on any amendment he offers.

Mr. PELL. Mr. President, I send to the desk a substitute amendment on behalf of myself and the Senator from Massachusetts (Mr. KENNEDY) for the substitute measure pending.

The ACTING PRESIDENT pro tempore. The substitute amendment will be stated.

The assistant legislative clerk read as follows:

AMENDMENT No. 618

Strike out all after the enacting clause and insert in lieu thereof the following:

That this Act may be cited as the "Rail Passenger Service Act of 1970".

TITLE I—FINDINGS AND PURPOSES

§ 101. Congressional findings and declaration of purpose

The Congress finds that modern, efficient, intercity railroad passenger service is a necessary part of a balanced transportation system; that the public convenience and necessity require the continuance and improvements of such service to provide fast and comfortable transportation between crowded urban areas and in other areas of the country, that rail passenger service can help to end the congestion on our highways and the overcrowding of airways and airports; that the traveler in America should to the maximum extent feasible have freedom to choose the mode of travel most convenient to his needs; that the necessary improvement and restructuring of existing passenger service and the development of new modes of ground passenger service can best be achieved by nonprofit corporations operating in the Nation's urban corridors of less than five hundred miles where improved passenger service is most needed; that regional transportation agencies should have a vital role in providing such service in cooperation with such corporations; that Federal financial assistance as well as regional, State, and local funds is needed to achieve the purposes of this Act; that limited long-distance passenger service of more than five hundred miles should only be provided at a cost to the Federal Government on terms justified by the national interest, and therefore it is the purpose of this Act to designate a basic national rail passenger system within which an urban corridors passenger system will also be designated, to create nonprofit passenger corporations with the financial assistance of railroads and the Federal Government to provide passenger service in urban corridors, to authorize the Secretary of Transportation to contract for the provision of passenger service within the basic national system and outside of the urban corridors passenger system, to authorize the Interstate Commerce Commission to require adequate standards of passenger service in rail passenger operations; and to provide interim Federal assistance to certain railroads as necessary to permit the orderly transfer of railroad passenger service to nonprofit corporations.

§ 102. Definitions

For purposes of this Act—

(a) "Railroad" means a common carrier by railroad, as defined in section 1(3) of

part I of the Interstate Commerce Act, as amended (49 U.S.C. 1(3)) other than the corporation created by title III of this Act.

(b) "Secretary" means the Secretary of Transportation or his delegate unless the context in which it appears indicates otherwise.

(c) "Commission" means the Interstate Commerce Commission.

(d) "Basic national rail passenger system" means the system of long-distance intercity rail passenger service of more than five hundred miles and the system of urban corridor passenger service for distances of less than five hundred miles, designated by the Secretary under title II of this Act.

(e) "Urban corridors passenger system" means the system of intercity passenger service between cities not more than five hundred miles apart in densely populated areas, designated by the Secretary under title II of this Act.

(f) "Corporation" means a nonprofit passenger corporation created under title III of this Act to provide passenger service in the urban corridors passenger system.

(g) "Avoidable loss" means the avoidable costs of providing passenger service, less revenues attributable thereto, using the methodology used in the report of the Commission of July 16, 1969, entitled "Investigation of Costs of Intercity Rail Passenger Service".

(h) "Intercity rail passenger service" means all rail passenger service other than commuter and other short-haul service in metropolitan and suburban areas, usually characterized by reduced fare, multiple-ride and commutation tickets and by morning and evening peak period operations.

TITLE II—BASIC NATIONAL RAIL PASSENGER SYSTEM

§ 201. Designation of system.

In carrying out the congressional findings and declaration of purpose set forth in title I of this Act, the Secretary, acting in cooperation with other interested Federal agencies and departments, is authorized and directed to submit to the Commission and to the Congress within thirty days after the date of enactment of this Act his report and recommendations for a basic national rail passenger system (hereinafter referred to as the "basic system"). The Secretary shall recommend as part of such system rail passenger routes of distances less than five hundred miles between cities in highly populated regions where present and potential demand for rail passenger transportation may make rail passenger service provided by corporations created under this Act economically viable. The Secretary shall also recommend as part of such system rail passenger routes of distances of more than five hundred miles where service may be required to meet seasonal passenger demand, to meet passenger transportation demands for which no alternative mode of transportation exists, or to meet other requirements of the national interest, and where the Secretary shall be willing to provide passenger service by contract with available carriers. Such recommendations shall specify those points between which intercity passenger trains shall be operated, identify all routes over which service may be provided, and the trains presently operated over such routes, together with basic service characteristics of operations to be provided within the system, taking into account schedules, number of trains, connections, through car service, and sleeping, parlor, dining, and lounge facilities. In recommending said basic system the Secretary shall take into account the need for expeditious rail passenger service within and between all regions of the continental United States, and the Secretary shall consider the need for such service within the States of Alaska and Hawaii and the Commonwealth of Puerto Rico. In formulating such recommendations the Secretary shall consider opportunities for provision of faster service, more convenient service, service to more centers of population, and/or service at lower cost, by the joint operation, for passenger service, of facilities of two or more railroad companies; the importance of a given service to overall system viability; adequacy of other transportation facilities serving the same points; the need for service within defined regional areas; unique characteristics and advantages of rail service as compared to other modes; the relationship of public benefits of given services to the costs of providing them; and potential profitability of the service.

§ 202. Review of the basic system

The Commission shall, within thirty days after receipt of the Secretary's report designating a basic system, review such report consistent with the purposes of this Act and provide the Secretary with its comments and recommendations. The Secretary shall give due consideration to such comments and recommendations. The Secretary shall, within ninety days after the date of enactment of this Act, submit his report designating the basic system to the Congress. Such report shall include a statement of the recommendations of the Commission together with his reasons for failing to adopt any such recommendations. The basic system as designated by the Secretary shall become effective for the purposes of this Act upon the date that the report of the Secretary is submitted to Congress and shall not be reviewable in any court.

TITLE III—CREATION OF RAIL PASSENGER CORPORATIONS

§ 301. Creation of corporations

There are authorized to be created nonprofit corporations (hereinafter referred to as "corporations") to provide on routes within each urban corridor of the urban corridors passenger system, in a manner consistent with the overall transportation requirements of the regions where such corporations are in operation, intercity passenger service, employing innovative operating and marketing concepts so as to fully develop the potential of modern rail service in meeting the Nation's intercity passenger transportation requirements. Each corporation will not be an agency or establishment of the United States Government. Such corporations shall be subject to the provisions of this Act, and to the extent consistent with this Act, to the laws of of the District of Columbia relating to nonprofit corporations. The right to repeal, alter, or amend this Act at any time is expressly reserved.

§ 302. Process of organization

The President of the United States shall appoint not less than three incorporators for each urban corridor corporation, by and with the advice and consent of the Senate, who shall also serve as the board of directors for one hundred and eighty days following the date of enactment of this Act. The incorporators shall take whatever actions are necessary to establish the corporation, including the filing of articles of incorporation, as approved by the President.

§ 303. Directors and officers

(a) Each corporation shall have a board of directors of not more than twenty-one members who are citizens of the United States, of whom one shall be elected annually by the board to serve as chairman. A majority of the members of the board shall be appointed by the President of the United States, by and with the advice and consent of the Senate, for terms of four years or until their successors have been appointed and qualified. Any member appointed to fill a vacancy may be appointed only for the unexpired term of the director whom he succeeds. At all times the Secretary or his representative shall be one of the members of each board of directors appointed by the President and at least one of such members of each corporation shall be a resident of the region served by such corporation and shall be appointed to represent exclusively the interests of passengers in that region. The Governor of each State served by each corporation shall appoint a director to serve for a term not to exceed his elective term of office. At least two members of each board of directors shall be elected by the rail carriers who have for consideration been relieved of their rail passenger responsibilities within the jurisdiction of such corporation under the provisions of section 401 of this Act. Pending election of the complete board of directors of each corporation four members shall constitute a quorum for the purpose of conducting business of a board.

No director appointed by the President may have any direct or indirect financial or employment relationship with any railroad or railroads during the time that he serves on the board. Each of the directors not employed by the Federal Government shall receive compensation at the rate of $300 for each meeting of the board he attends. In addition, each director shall be reimbursed for necessary travel and subsistence expense incurred in attending the meetings of the board. No director elected by railroads shall vote on any action of the board of directors relating to any contract or operating relationship between the corporation and a railroad, but he may be present at directors' meetings at which such matters are voted upon, and he may be included for purposes of determining a quorum and may participate in discussions at such meeting.

(b) Each board of directors is empowered to adopt and amend bylaws governing the operation of the corporation providing that such bylaws shall not be inconsistent with the provisions of this Act or of the articles of incorporation.

(c) Each corporation shall have a president and such other officers as may be named and appointed by the board. The rates of compensation of all officers shall be fixed by the board. Officers shall serve at the pleasure of the board. No individual other than a citizen of the United States may be an officer of the corporation. No officer of the corporation may have any direct or indirect employment or financial relationship with any railroad or railroads during the time of his employment by the corporation.

(d) Each corporation is authorized to issue nonvoting securities or obligations, or obtain loans, guaranteed pursuant to section 602 of this act.

§ 304. General powers of the corporations

Each corporation is authorized to own, manage, operate, or contract for the operation of intercity rail passenger trains; to carry mail and express in connection with passenger service; to conduct research, and development related to its mission; to own, manage, operate, or contract for the operation of high-speed ground passenger transportation, to contract for the improvement or construction of roadbed and to acquire by construction, purchase, or gift, or to contract for the use of, physical facilities, equipment, and devices necessary to rail passenger operations. Each corporation shall rely upon rail carriers to provide the crews necessary to the operation of its passenger trains. To carry out its functions and purposes, each corporation shall have the usual powers conferred upon a nonprofit corporation by the laws of the District of Columbia.

§ 305. Applicability of the Interstate Commerce Act and other laws

(a) Each corporation shall be deemed a common carrier by railroad within the meaning of section 1(3) of the Interstate Commerce Act and shall be subject to all provisions of the Interstate Commerce Act other than those pertaining to—

(1) regulation of rates, fares, and charges;

(2) abandonment or extension of lines of railroads and the abandonment or extension of operations over lines of railroads, whether by trackage rights or otherwise;

(3) regulation of routes and service and, except as otherwise provided in this Act, the discontinuance or change of passenger train service operations.

(b) Each corporation shall be subject to the same laws and regulations with respect to safety and with respect to dealings with its employees as any other common carrier subject to part I of the Interstate Commerce Act.

(c) Each corporation shall not be subject to any State or other law pertaining to the transportation of passengers by railroad as it relates to rates, routes, or service.

(d) Leases and contracts entered into by each corporation, regardless of the place where the same may be executed, shall be governed by the laws of the District of Columbia.

(e) Persons contracting with each corporation for the joint use or operation of such facilities and equipment as may be necessary for the provision of efficient and expeditious passenger service shall be and are hereby relieved from all prohibitions of existing law, including the antitrust laws of the United States with respect to such contracts, agreements, or leases insofar as may be necessary to enable them to enter thereinto and to perform their obligations thereunder.

§ 306. Sanctions

(a) If a corporation engages in or adheres to any action, practice, or policy inconsistent with the policies and purposes of this Act, obstructs or interferes with any activities authorized by this Act (except in the exercise of labor practices not otherwise proscribed by law), refuses, fails, or neglects to discharge its duties and responsibilities under this Act, or threatens any such violation, obstruction, interference, refusal, failure, or neglect, the district court of the United States for any district in which the corporation or other person resides or may be found shall have jurisdiction, except as otherwise prohibited by law, upon petition of the Attorney General of the United States, or, in a case involving a labor agreement, upon petition of any individual affected thereby, to grant such equitable relief as may be necessary or appropriate to prevent or terminate any violation, conduct, or threat.

(b) Nothing contained in this section shall be construed as relieving any person of any punishment, liability, or sanction which may be imposed otherwise than under this Act.

§ 308. Reports to the Congress

(a) Each corporation shall transmit to the President and the Congress, annually, commencing one year from the date of enactment of this Act, and at such other times as it deems desirable, a comprehensive and detailed report of its operations, activities, and accomplishments under this Act, including a statement of receipts and expenditures for the previous year. At the time of its annual report, each corporation shall submit legislative recommendations for amendment of this Act as it deems desirable, including the amount of financial assistance needed for operations and for capital improvements, the manner and form in which the amount of such assistance should be computed, and the sources from which such assistance should be derived.

(b) The Secretary and the Commission shall transmit to the President and the Congress, one year following the date of enactment of this Act and biennially thereafter, reports on the state of rail passenger service and the effectiveness of this Act in meeting the requirement for a balanced national transportation system, together with any legislative recommendations for amendments to this Act.

TITLE IV—PROVISION OF RAIL PASSENGER SERVICES

§ 401. Assumption of passenger service by the corporations; commencement of operations

(a)(1) On or before March 1, 1971, and on or after March 1, 1973, but before January 1, 1975, each corporation is authorized to contract with each railroad within its jurisdiction to relieve such railroad of responsibility for the provision of intercity rail passenger service commencing on or after March 1, 1971. The contract may be made upon such terms and conditions as necessary to permit the corporation to undertake passenger service on a timely basis. Upon its entering into a valid contract (including protective arrangements for employees), the railroad shall be relieved of all its responsibilities as a common carrier of passengers by rail within the jurisdiction of the corporation in intercity rail passenger service under part I of the Interstate Commerce Act or any other law relating to the provision of intercity passenger service by rail: *Provided*, That any railroad discontinuing a train hereunder must give notice in accordance with the notice procedures contained in section 13a(1) of the Interstate Commerce Act.

(2) In consideration of being relieved of this responsibility by a corporation, the railroad shall agree to pay to such corporation each year for three years an amount equal to one-third of 50 per centum of the fully distributed passenger service deficit of the railroad attributable to the operation of passenger service within the jurisdiction of the corporation as reported to the Commission for the year ending December 31, 1969. The payment to the corporation may be made in cash or, at the option of the corporation, by the transfer of rail passenger equipment or the provision of future service as requested by the corporation.

(3) In agreeing to pay the amount specified in paragraph (2) of this subsection, a railroad may reserve the right to pay a lesser sum to be determined by calculating the following: 100 per centum of the avoidable loss of all intercity rail passenger service operated by the railroad within the jurisdiction of the corporation during the period January 1, 1969, through December 31, 1969. If the amount owed a corporation under this alternative is agreed by the parties to be less than the amount paid pursuant to paragraph (2), the corporation shall pay the difference to the railroad. If the railroad and the corporation are unable to agree as to the amount owed, the matter shall be referred to the Interstate Commerce Commission for decision. The Commission shall decide the issue within ninety days following the date of referral and its decision shall be binding on both parties.

(4) The payments to a corporation shall be made in accordance with a schedule to be agreed upon between the parties. Unless the parties otherwise agree, the payments for each of the first twelve months following the date on which a corporation assumes any of the operational responsibilities of the railroad shall be in cash and not less than one thirty-sixth of the amount owed.

(b) On March 1, 1971, each corporation shall begin the provision of intercity rail passenger service between points within its jurisdiction unless such service is being provided by a railroad with which it has not entered into a contract under subsection (a) of this section.

(c) No railroad or any other person may, without the consent of a corporation, conduct intercity rail passenger service over any route on which such corporation is performing scheduled rail passenger service pursuant to a contract under this section.

§ 402. Provision of passenger service outside of the urban corridors passenger system

The Secretary is authorized to contract with railroads and the corporations for the provision of passenger service within the national basic passenger system for rail passenger service outside of the urban corridors passenger system if the Secretary finds that such service is required to meet seasonal passenger demand, to meet passenger transportation demand for which no alternative mode of transportation exists, or to meet other requirements in the national interest. Such service shall be coordinated with the services in the urban corridor passenger system. The Secretary may take into account in the determination of payments under this section the operating deficit which may be incurred by a carrier in the provision of long-distance passenger service. There are hereby authorized to be appropriated such amounts as necessary to carry out the purposes of this section. Any sums appropriated shall be available until expended.

§ 403. Facility and service agreements

(a) Each corporation may contract with railroads for the use of tracks and other facilities and the provision of services on such terms and conditions as the parties may agree. In the event of a failure to agree, the Interstate Commerce Commission shall, if it finds that doing so is necessary to carry out the purposes of this Act, order the provision of services or the use of tracks or facilities of the rail carrier by a corporation, on such terms and for such compensation as the Commission may fix as just and reasonable. If the amount of compensation fixed is not duly and promptly paid, the railroad entitled thereto may bring an action against the corporation to recover the amount properly owed.

(b) To facilitate the initiation of operations by each corporation within its jurisdiction the Commission shall, upon application by the corporation, require a railroad to make immediately available trains and other facilities. The Commission shall thereafter promptly proceed to fix such terms and conditions as are just and reasonable.

§ 404. Adequacy of service

The Commission is authorized to prescribe such regulations as it considers necessary for the comfort and health of intercity rail passengers. Any person who violates a regulation issued under this section shall be subject to a civil penalty of not to exceed $500 for each violation. Each day a violation continues shall constitute a separate offense.

§ 405. New service

(a) Each corporation may provide service within its jurisdiction in excess of that prescribed either within or service outside the basic system including the operation of special and extra passenger trains, if consistent with prudent management.

(b) Any State or regional authority may request of a corporation rail passenger service beyond that included within the corporation's system. The corporation shall institute such service if the State or regional authority agrees to reimburse the corporation for a reasonable portion of the avoidable losses associated with the institution of such services.

(c) For purposes of this section the reasonable portion of the operating loss to be assumed by the State or regional authority, shall be no less than 50 per centum nor more

than the avoidable loss and associated capital costs. If the corporation and the State or regional authority are unable to decide on a reasonable apportionment of the avoidable losses to be assumed by the State or regional authority the matter shall be referred to the Secretary for decision in accordance with the intent of this Act, taking into account the impact of requiring the corporation to bear such losses upon, its ability to provide improved service within its system.

§ 406. Discontinuance of service

(a) Unless it has entered into a contract with a corporation pursuant to section 401 (a) (1) of this Act, no railroad may discontinue any passenger service within the jurisdiction of such corporation in the Urban Corridors Passenger System designated by the Secretary prior to January 1, 1975, the provisions of any other law notwithstanding. On and after January 1, 1975, passenger train service operated by such carrier may be discontinued under the provisions of section 13a of the Interstate Commerce Act. Upon the filing of an application for discontinuance for such a carrier, the corporation may undertake to initiate passenger train operations between the points served.

(b) (1) A corporation must provide minimum service on the routes designated by the Secretary as within its jurisdiction until January 1, 1975, to the extent it has assumed responsibility for such service by contract with a rail carrier pursuant to section 401 of this Act.

(2) Service beyond that prescribed which is undertaken by the corporation upon its own initiative may be discontinued at any time.

(3) If at any time after January 1, 1975, a corporation determines that any train or trains in its jurisdiction in whole or in part are not required by public convenience and necessity, or will impair the ability of the corporation to adequately provide other services, such train or trains may be discontinued under the procedures of section 13a of the Interstate Commerce Act (49 U.S.C. 13a): *Provided, however,* That at least thirty days prior to the change or discontinuance, in whole or in part, of any service under this subsection, the corporation shall mail to the Governor of each State in which the train in question is operated, and post in every station, depot, or other facility served thereby notice of the proposed change or discontinuance. The corporation may not change or discontinue this service if, prior to the end of the thirty-day notice period, State, regional, or local authorities request continuation of the service and within ninety days agree to reimburse the corporation for a reasonable portion of the operating losses associated with the continuation of service beyond the notice period.

(4) For purposes of paragraph 3 of this subsection a reasonable portion of the operating losses to be provided by the State, local, or regional authority shall be no less than 50 per centum of nor more than the avoidable loss and associated capital costs. If the corporation and the State, regional, or local authorities are unable to decide on the reasonable apportionment of operating loss between them, the manner shall be referred to the Secretary for decision in accordance with the intent of this Act. The Secretary shall take into account the intent of this Act and the impact of requiring the corporation to bear such losses upon its ability to provide improved service within the basic system.

§ 407. Protective arrangements for employees

(a) A rail carrier shall provide fair and equitable arrangements to protect the interests of employees adversely affected by the following discontinuances of passenger service:

(1) those arising out of a contract with a corporation pursuant to section 401(a)(1) of this Act and occurring prior to January 1, 1975; and

(2) those undertaken pursuant to section 406 of this Act.

(b) Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) to such employees under existing collective-bargaining agreements or otherwise; (2) the continuation of collective-bargaining rights; (3) the protection of such individual employees against a worsening of their positions with respect to their employment; (4) assurances of priority of reemployment of employees terminated or laid off; and (5) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their positions with respect to their employment which shall in no event provide benefits less than those established pursuant to section 5(2)(f) of the Interstate Commerce Act. Any contract entered into pursuant to the provisions of this title shall specify the terms and conditions of such protective arrangements.

Final settlement of any contract under section 401(a)(1) of this Act between a rail carrier and a corporation may not be made unless the Secretary of Labor has certified to the corporation that adversely affected employees have received fair and equitable protection from the railroad.

(c) After commencement of operations in a corporation's jurisdiction, the substantive requirements of subsection (b) of this section shall apply to the corporation, and the certification by the Secretary of Labor shall be a condition to the discontinuance of any trains by the corporation pursuant to section 406 of this Act.

(d) Each corporation shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors and subcontractors in the performance of construction work financed with the assistance of funds received under any contract or agreement entered into under this title shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended. A corporation shall not enter into any such contract or agreement without first obtaining adequate assurance that required labor standards will be maintained on the construction work. Health and safety standards promulgated by the Secretary of Labor pursuant to Public Law 91–54 (40 U.S.C. 333) shall be applicable to all construction work performed under such contracts or agreements.

(e) Each corporation shall not contract out any work normally performed by employees in any bargaining unit covered by a contract between the Corporation or any railroad providing intercity rail passenger service upon the date of enactment of this Act and any labor organization, if such contracting out shall result in the layoff of any employee or employees in such bargaining unit.

TITLE V—ESTABLISHMENT OF A SPECIAL FINANCIAL INVESTMENT ADVISORY PANEL

§ 501. Appointment of advisory panel

Within thirty days after enactment of this Act, the president shall appoint a fifteen man financial advisory panel to be composed of members representing the investment banking, commercial banking, and rail transportation industry, State, and local transportation agencies, the Secretary of the Treasury and the public in the various regions of the country. No less than six members shall be appointed to represent the public of the regions.

§ 502. Purpose of special advisory panel

The special advisory panel appointed by the President shall advise the directors of the corporations on ways and means of increasing capitalization of the corporation.

§ 503. Report to Congress

On or before January 1, 1971, the panel shall submit a report to Congress evaluating the initial capitalization of each corporation and the prospects for increasing its capitalization.

TITLE VI—FEDERAL FINANCIAL ASSISTANCE

§ 601. Federal grants

There is authorized to be appropriated to the Secretary in fiscal year 1971, $40,000,000 to remain available until expended, for payment to corporations for the purpose of assisting in—

(1) the initial organization and operation of such corporations;

(2) the establishment of improved reservations systems and advertising;

(3) servicing, maintenance, and repair of railroad passenger equipment;

(4) the conduct of research and development and demonstration programs respecting new rail passenger services;

(5) the development and demonstration of improved rolling stock; and

(6) essential fixed facilities for the operation of passenger trains on lines and routes included in the basic system.

§ 602. Guaranty of loans

The Secretary is authorized, on such terms and conditions as he may prescribe, to guaranty any lender against loss of principal or interest on securities, obligations, or loans issued to finance the upgrading of roadbeds and the purchase by a corporation of new rolling stock, rehabilitation of existing rolling stock, and for other corporate purposes. The maturity date of such securities, obligations, or loans, including all extensions and renewals thereof, shall not be later than twenty years from their date of issuance, and the amount of guaranteed loans outstanding at any time may not exceed $60,000,000. The Secretary shall prescribe and collect from the lending institution a reasonable annual guaranty fee. There are authorized to be appropriated such amounts as necessary to carry out this section not to exceed $60,000,000.

TITLE VII—INTERIM EMERGENCY FEDERAL FINANCIAL ASSISTANCE

§ 701. Interim authority to provide emergency financial assistance for railroads operating passenger service

For the purpose of permitting a railroad to enter into or carry out a contract under section 401(a)(1) of this Act, the Secretary is authorized, on such terms and conditions as he may prescribe, to (1) make loans to such railroads, or (2) to guarantee any lender against loss of principal or interest on any loan to such railroads. Interest on loans made under this section shall be at a rate not less than a rate determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the average maturities of such loans adjusted to the nearest one-eighth of 1 per centum. No loan may be made, including renewals or extensions thereof, which has a maturity date in excess of five years. The maturity date on any loan guaranteed, including all renewals and extensions thereof, shall not be later than five years from the date of issuance. The total amount of loans and loan guarantees made under this section may not exceed $75,000,000.

§ 702. Authorization for appropriations

There are hereby authorized to be appropriated such amounts as necessary to carry out the purposes of this title. Any sums appropriated shall be available until expended.

TITLE VIII—MISCELLANEOUS PROVISIONS

§ 801. Effect on pending proceedings

Any intercity passenger train in operation on the date of enactment of this Act may be discontinued only pursuant to this Act, notwithstanding any provision of Federal or State law, or any regulation or order of any Federal or State court or regulatory agency issued before or subsequent to that date.

§ 802. Separability

If any provision of this Act or the application thereof to any person or circumstance is held invalid, the remainder of the Act and the application of such provision to other persons or circumstances shall not be affected thereby.

§ 803. Accountability

Section 201 of the Government Corporation Control Act of 1945 (31 U.S.C. 856; 59 Stat. 600) is amended by striking "and (4)" and inserting in lieu thereof "(4) Federal Deposit Insurance Corporation and (5)" and adding "a corporation established pursuant to the Rail Passenger Act of 1970."

Amend the title so as to read: "A bill to designate a national rail passenger system, to establish rail passenger corporations, to provide financial assistance therefor, and for other purposes."

CAMPUS VIOLENCE

Mr. PELL. Mr. President, the Senator from Michigan raised the question of the appellation "bums."

The ACTING PRESIDENT pro tempore. How much time does the Senator yield to himself?

Mr. PELL. Mr. President, I yield myself 5 minutes.

The ACTING PRESIDENT pro tempore. The Senator from Rhode Island may proceed for 5 minutes.

Mr. PELL. Mr. President, the Senator from Michigan raised a question of the appellation of "bums" to student leaders or student radicals. The subject had been brought up at the White House yesterday. Since I was the Senator who told the President I took exception to the calling of student radicals "bums," I would like to confirm completely the correctness of the reply the President gave and the tenor of the meeting as reported by the Senator from Michigan.

I do think, however, that in the remarks of the Senator from Michigan after describing the President's response, the Senator from Michigan underestimated the exacerbating effect that Cambodia and the enlargement of the war have had upon our younger people.

In my State of Rhode Island at this very time a mass meeting of students is taking place in the central square of our State capital. I understand Brown University in my State has "knocked off" for the rest of the term. There is talk that our Federal building will be evacuated. This is happening in my State capital, and presumably it is happening in many States around the country.

I think the reason for the enlargement of this student activity is directly related to the war in Cambodia, and not the events of a week ago or 2 weeks ago. These certainly were not causing the evacuation of Federal buildings.

Now I would like to get on with the amendment I have proposed to the pending bill unless the Senator from Nebraska wants to be recognized at this time for a minute.

Mr. CURTIS. I thank the Senator.

Mr. PELL. I yield to the Senator from Nebraska for 1 minute.

Mr. CURTIS. Mr. President, social ills do not happen in an instance; they come about over a long period of time.

Are we going to adopt the view that a President of the United States dare not act in the interest of this country, according to the dictates of his conscience, and in accordance with the information he has because someone might resort to violence somewhere in the country?

The causes of violence and of wrongdoing on our campuses and elsewhere did not come about as the result of any one act. It has been germinating over the past 10 to 15 years. It started with the idea that the way to determine an issue is to get manpower out on the street and to interfere with what is going on.

I hope the time soon comes when we can settle issues by debate, persuasion, and reason, and not by physical force in the street.

THE URBAN CORRIDORS CORPORATION SUBSTITUTE AMENDMENT

Mr. PELL. Mr. President, the substitute amendment which the Senator from Massachusetts (Mr. KENNEDY) and I offer today is exactly similar to the substitute amendment which was printed in the RECORD on April 30, 1970, with the exception of some minor technical and clarification changes and an amendment to the Advisory Board suggested by Senator METCALF.

I offer this substitute amendment neither from the viewpoint of regional concerns, nor from the viewpoint of political expediency. For the last 8 years, I have been continuously urging that the Congress take action to save rail passenger service in this country. The substitute amendment I offer today reflects the accumulated effort of my 8 years of work and the writing of my book on the rail passenger problem entitled "Megalopolis Unbound." Thus, I offer my substitute amendment not to impede passage of rail passenger legislation, but to secure for the Nation the best possible legislative remedy for the rail passenger crisis.

The amendment I propose today is basically similar to the substitute amendment to establish the national rail corporation offered by Senator MAGNUSON. However, my amendment differs in two key respects to the national rail corporation proposal.

First, it establishes a separation between passenger service in urban corridors for which there is great potential demand and long-distance passenger service for which there is very little passenger demand.

Second, it prevents profits from service in the more highly traveled urban corridors from being reduced by the requirements of long-distance passenger service which the national corporation would have to provide.

My amendment eliminates the cross subsidy between urban corridor service and long-distance passenger service which is inherent in the national corporation proposal.

All the basic sections of my substitute amendment are similar to the sections in the national corporation substitute as to money and the procedure with three major exceptions.

First, in my substitute amendment instead of a one-tier national system, the Secretary of Transportation would designate a two-tier passenger transportation system consisting of an urban corridors system and a long-distance system.

Second, my amendment would authorize the creation of nonprofit passenger corporations controlled by the Secretary of Transportation in each of our country's densely populated urban corridors of less than 500 miles.

The ACTING PRESIDENT pro tempore. The time of the Senator has expired.

Mr. PELL. Mr. President, I yield myself an additional 5 minutes.

The ACTING PRESIDENT pro tempore. The Senator from Rhode Island is recognized.

Mr. PELL. Mr. President, third, my amendment would authorize the Secretary to provide long-distance service by contract with rail carriers or urban corridor corporations if he finds that such passenger service is required to meet seasonal passenger demand or to meet passenger transportation demand for which no alternative mode of transportation exists.

The substitute I offer today has a number of very distinct advantages.

First, my urban corridors amendment puts the trains where the people are. According to the Corridor Task Force Report of the Office of the Assistant Secretary for Policy Development, Department of Transportation, June 12, 1968, 76.5 percent of the urbanized population and 11.3 percent of the land area of the United States is located in the set of 15 corridors identified by the Department of Transportation. Moreover according to that report, 67 percent of all passenger trips are made between distances of 50 and 499 miles.

Second, my urban corridors amendment puts the trains where they are the most economical mode of moving passengers; that is, in urban corridors of less than 500 miles.

Evidence supporting this statement can be seen by the fact that short-haul corridor airlines have been requiring subsidies to continue operation, and even Eastern Airlines, with its ground shuttle parallel to the Metroliner service, is facing difficulties.

Also, according to Dr. Robert Nelson, former Director of the Department of Transportation Office of High Speed Ground Transportation and the country's expert on the economics of rail passenger service:

> The least economic rail passenger service today is over the long interregional and transcontinental routes where air transport has a very great competitive advantage in trip time.

Furthermore, according to the Senate Commerce Committee's report, one railroad track can accommodate as many travelers as 20 lanes of highways.

The third advantage of my amend-

ment is that it creates urban corridor corporations potentially more economically viable than the proposed national rail corporation.

This advantage is due to the fact that urban corridor corporations are not required to provide long-distance rail passenger service which is not economically feasible, but yet they would be established under the same basic financial arrangements as the national corporation, with the exception of stock offerings, and they would be eligible for State and local grants as nonprofit corporations.

If investors are not willing to put their money in present rail corporations providing long-distance passenger service, they are no more likely to put their money into a rail corporation providing long-distance passenger service. No matter where it is put, uneconomic long-distance passenger service does not produce dividends for investors.

The fourth advantage of my urban corridors proposal is that it provides for the establishment of a national rail policy without the need for a national bureaucracy unresponsive to overall regional transportation requirements in the following ways:

The Secretary of the Department of Transportation controls and coordinates national rail policy by his power to designate the basic national rail passenger system and by his majority representation on each urban corridor corporation.

I would note here that some persons have expressed concern that my proposal does not provide for a truly national rail passenger service with trains running from coast to coast. After citing the fact that the Secretary of Transportation has the authority under my proposal to establish a national rail policy, I would respond to the criticism in the following manner:

It is no more appropriate to run more trains coast to coast than it is to build sidewalks coast to coast.

My substitute is more publicly oriented.

With directors representing each Governor and a director representing exclusively the consumer, each nonprofit corporation is, by its nature, more responsive to the needs of the traveling public and the requirements of regional transportation than a national for-profit corporation consisting of Federal bureaucrats, rail carriers, and profit-oriented directors elected by stockholders.

The fifth advantage of my substitute proposal is that it allows for the development and future use by corridor corporations of new modes of high-speed ground transportation, such as tracked air cushioned vehicles.

Corridor corporations will not be limted to the simple provisions of the present archaic means of rail passenger transportation, but they will be given authority to develop new modern modes of high-speed ground transportation needed to serve our growing megalopolises in the coming century.

And, the sixth advantage of my urban corridor corporation proposal is that it provides a better deal for the railroads and labor.

Since railroads will have to buy into urban corridor corporations only on the basis of their avoidable losses within the urban corridor system where losses have been low, railroads will not be required to contribute as great a sum as they would to a national corporation which assumed all long-distance service.

Also, since the urban corridor corporations would not have to subsidize internally, costly, infrequently scheduled long-distance trains, they would be able to run an even greater number of corridor trains; thus, with more trains running, rail labor would have more jobs.

Mr. President, I ask unanimous consent that the comparison between my proposal and the national corporation proposal and excerpts from the 1968 Corridor Task Force Report of the Office of the Assistant Secretary for Policy Development, Department of Transportation, be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Washington (D.C.) Evening Star, May 1, 1970]

NEW TAKEOVER PLAN OFFERED FOR RAIL PASSENGER SERVICE

(By Stephen M. Aug)

Sen. Claiborne Pell, D–R.I., who conceived the idea that led to the Northeast Corridor highspeed rail project, has proposed setting up a group of regional nonprofit corporations to take over rail passenger service.

The measure is considerably different from anything now under consideration by either the House or Senate, both of which have measures designed to revitalize rail passenger service. It also differs from another proposal to set up a corporation to run the nation's passenger trains.

Pell's measure, cosponsored by Sen. Edward M. Kennedy, D–Mass., and introduced in the House by Rep. Robert O. Tiernan, D–R.I., would set up a two-tier national passenger transportation system.

On one tier, regional nonprofit corporations would operate frequently scheduled service in urban corridors of less than 500 miles.

METHOD OUTLINED

On the other tier the secretary of transportation would be authorized to contract for less frequent long-distance rail passenger service outside the corridors.

The measure most likely would cause some differences among organizations that have been lobbying strongly for continued rail passenger service, and probably would be opposed by senators from sparsely populated areas where the urban corridor concept would be impractical.

Pell, said, however, that this proposal "establishes a separation between passenger service in urban corridors for which there is great demand and long-distance passenger service for which there is very little demand."

His proposal, Pell said, "puts the trains where the people are. It puts the trains where they are the most economical mode of travel, that is, urban corridors of less than 500 miles. Even the airlines admit that it is uneconomical for them to provide passenger travel in our short-haul urban corridors."

Pell's proposal says the secretary of transportation will recommend as part of the long-distance tier, rail routes of distances of more than 500 miles, "where service may be required to meet seasonal passenger demands" or where no alternative transportation exists, or "to meet other requirements of the national interest."

$175 MILLION TO START

Pell would make the same $175 million available to get the basic system underway as would a measure which recently gained approval of not only the Nixon administration, but Senate Commerce Committee leaders, the Association of American Railroads and the National Association of Railroad Passengers.

That measure would set up a private corporation to run passenger trains on a basic system to be set up by the Department of Transportation.

The corporation would receive both initial federal financing, federally backed loans and would obtain money and equipment from the railroads and additional capital by sale of stock to the public.

This corporation measure would be a substitute for a bill already approved by the Commerce Committee to set up a national rail passenger system and have the government reimburse railroads for losses they incur operating trains over it.

All the measures are scheduled for Senate floor debate next Tuesday.

ADVANTAGES OF PELL/KENNEDY URBAN CORRIDORS CORPORATIONS SUBSTITUTE OVER THE NATIONAL RAIL CORPORATION SUBSTITUTE

1. Pell/Kennedy Urban Corridors Proposal puts the trains where the people are.

(a) 76.5% of the urbanized population and 11.3% of the land area of the United States is located in the set of 15 corridors identified by the Department of Transportation. (Corridor Task Force Report of the Office of the Assistant Secretary For Policy Development, Department of Transportation, June 12, 1968.)

(b) 67% of all passenger trips are made between distances of 50 and 499 miles. (Corridor Task Force Report.)

2. Pell/Kennedy Urban Corridors Proposal puts the trains where they are the most economical mode of moving passengers, that is, in urban corridors of less than 500 miles.

(a) Short haul corridor airlines have been requiring subsidies to continue operation.

(b) "The least economic rail passenger service today is over the long interregional and transcontinental routes where air transport has a very great competitive advantage in trip time." (Dr. Robert A. Nelson, former Director of DOT Office of High Speed Ground Transportation.)

(c) One railroad track can accommodate as many travelers as 20 lanes of highways. (Senate Commerce Committee Report 91–765.)

3. Pell/Kennedy Urban Corridors Proposal creates urban corridor corporations potentially more economically viable than the national rail corporation.

(a) Urban Corridor corporations are not required to provide long distance rail passenger service which is not economically feasible, but yet they would be established under the same basic financial arrangements as the national corporation, with the exception of stock offerings, and they would be eligible for state and local grants as non profit corporations.

4. Pell/Kennedy Urban Corridors Proposal provides for the establishment of a national rail policy without the need for a national bureaucracy unresponsive to overall regional transportation requirements.

(a) The Secretary of DOT controls and coordinates national rail policy by his power to designate the basic national rail passenger system and by his majority representation on each urban corridor corporation.

(b) With directors representing each governor and a director representing exclusively the consumer, each non profit corporation

is by its nature more responsive to the needs of the traveling public and the requirements of regional transportation than a national for profit corporation consisting of federal bureaucrats, rail carriers, and profit oriented directors elected by stockholders.

5. Pell/Kennedy Urban Corridors Proposal allows for the development and future use by Corridor Corporations of new modes of high speed ground transportation, such as tracked air cushioned vehicles.

6. Pell/Kennedy Urban Corridors Proposal provides a better deal for the railroads and labor.

(a) Since railroads will have to buy into urban corridor corporations only on the basis of their avoidable losses within the urban corridor system where losses have been low, railroads will not be required to contribute as great a sum as they would to a national corporation which also assumed all long distance service.

(b) Since the urban corridor corporations would not have to subsidize internally, costly, infrequently scheduled long distance trains, they would be able to run an even greater number of corridor trains; thus, with more trains running rail labor would have more jobs.

COMPARISON OF HARTKE-PROUTY AND PELL-KENNEDY PROPOSALS

SECTIONS	HARTKE-PROUTY NATIONAL CORPORATION PROPOSAL	PELL-KENNEDY URBAN CORRIDORS CORPORATIONS LONG-DISTANCE CONTRACT PROPOSAL
Title I. Findings and declaration:	Calls for one national interlocking basic rail system run by national corporation.	Calls for two tier interlocking basic rail system within which nonprofit corporations will operate urban corridor service and within which Secretary will be able to contract for long distance service; emphasizes regional coordination and use of high speed ground transportation by corridor corporations.
Definitions:	Railroad Secretary, Commission, Basic System, Intercity rail passenger service, avoidable loss, corporation.	Same, except Basic System is defined to include urban corridor passenger system, nonprofit corporations named.
Title II. Basic National Rail Passenger System:	Secretary designates national interconnecting system to be submitted to Congress.	Secretary designates national interconnecting system consisting of an urban corridors passenger system based on intercity travel between population centers not more than 500 miles apart, and consisting of long distance routes for contract service to meet seasonal demands or to fill gap where no alternative transportation exists.
Review of the Basic System:	ICC reviews DOT plan and DOT then submits to Congress.	Same.
Title III. Creation of Corporation(s):	A National Railroad Passenger Corporation is created to run for profit all passenger service.	Nonprofit corporations are created to run intercity passenger service in corridors.
Process of organization:	President appoints three incorporators for National Corporation.	Same for each corridor corporation.
Directors and Officers:	President appoints Secretary and majority 15 member board, three members elected by carriers, and four members by preferred stockholders.	President appoints majority of board of each corridor corporation which includes representative of Secretary and consumer interests, each Governor within corridor appoints a director, and rail carriers buying in elect two directors.
Financing of Corporation:	Each rail carrier buying in receives common stock at $10 a share, and preferred stock of $100 offered on market.	Not applicable for stock offerings.
General Powers:	Own, operate, manage, contract for service, conduct r&d, acquire, purchase, contract for physical facilities.	Same, plus authority to run high speed transportation and improve road beds.
Applicability of the Interstate Commerce Act and other laws:	ICC has jurisdiction over Corporation with exception of rates, abandonment, and route regulation. Antitrust laws not applicable.	Same for each corporation.
Sanctions:	In Federal District Court by affected parties for violations of Act.	Same for each corporation.
Reports to Congress:	Corporation makes annual report, ICC and DOT make annual report.	Same for each corporation.
Title IV. Provision of Rail Passenger Services:		
Assumption of passenger service by corporation(s):	Corporation before March 1, 1971 or after March 1, 1973, contracts with carriers for all passenger service. Rail carriers pay either ⅓ of 50% of fully distributed passenger deficit, or 100% of avoidable losses for all service, or 200% of avoidable losses for less than all service, in consideration of being relieved of passenger responsibilities.	Same except that loss formulas only apply within jurisdiction of each corridor, and 200% avoidable loss option not given for being relieved of less than all service within a corridor.
Commencement of Operations:		
Provision of Passenger Service outside of urban corridors passenger system:	Not applicable.	Secretary may contract with corridor corporations or carriers for long distance service, corridor interconnection service, seasonal service. Sums as may be necessary authorized.
Facility and Service Agreements:	Corporation contracts with railroads for use of tracks and other facilities and services.	Same for each corporation.
Adequacy of Service:	ICC authorized to prescribe comfort and health regulations.	Same for each corporation.
New Service:	Can provide service outside system if consistent with prudent management, and states can request extra service if they are willing to pay 50% or more of avoidable loss and associated capital costs.	Same for each corporation.
Discontinuance of Service:	If rail carriers do not contract with corporation to be relieved of all service, they must continue service until 1975. Corporation must continue minimum service until 1975. After 1975 corporation may discontinue under ICC 13a provision unless states will pay losses.	Same, except that only applicable within urban corridors passenger system.

COMPARISON OF HARTKE-PROUTY AND PELL-KENNEDY PROPOSALS—Continued

SECTIONS	HARTKE-PROUTY NATIONAL CORPORATION PROPOSAL	PELL-KENNEDY URBAN CORRIDORS CORPORATIONS LONG-DISTANCE CONTRACT PROPOSAL
Protective arrangements for employees:	Equitable arrangements for employees if discontinuances or new contracts, no contracting out if it causes lay-offs, minimum wages to be paid.	Same for each corporation.
Title V. Establishment of a Special Financial Investment Advisory Panel:	To evaluate and recommend means of increasing capitalization; panel consists of bankers, rail carrers, Treasury Secretary.	Same, except representatives of public transportation agencies included.
Title VI. Federal Financial Assistance:	$40,000,000 for 1971 start-up costs and requirements.	Same, except to be allocated among corridor corporations.
Guaranty of Loans:	Lenders guaranteed up to $60 million for loans on new and rehabilitated rolling stock.	Same, except roadbed improvements, included under guaranty provision.
Title VII. Interim Financial Assistance for railroads operating passengers service:	5 year loans and guarantees not to exceed total of $75 million for railroads being relieved of service.	Same.
Title VIII. Miscellaneous Provisions:	Trains may be only discontinued pursuant to this Act. Invalid provisions separable. Accountable under Government Corporation Control Act.	Same.

CORRIDOR TASK FORCE REPORT FOR OFFICE OF THE ASSISTANT SECRETARY FOR POLICY DEVELOPMENT, OFFICE OF THE SECRETARY, DEPARTMENT OF TRANSPORTATION, JUNE 12, 1968

[Figure 1 not printed in RECORD]

1.0 INTRODUCTION

1.1 *Background*: The recognition for the need of public investments to improve regional mass transportation facilities began in 1962. The Administration became aware of the fact that the interaction of economic, social and cultural forces in the metropolitan and urbanized areas of one region, the Northeastern United States, required integrated transportation planning and implementation activities in order to offset:

A trend of congestion on highways;

A trend of congestion into, and at, airport terminals; and

A trend of diminishing use of existing surface transportation facilities (i.e., railroads) linking the metropolitan hubs of the region.

The "Northeast Corridor" was the descriptor used to identify this region because the major population centers, along with the predominant passenger flow of traffic, formed an axial-like pattern (longer than wide) of dense, urbanized and metropolitan activities from Washington to Boston.

Analytical, research and development activities were begun to produce economic alternatives for solving the problems noted. The studies to date have indicated, however, that any remedial action will be very costly. For instance, the right-of-way and land acquisition cost, apart from the implementation of advanced technology, is a very expensive item to procure[1] in metropolitan areas.

The Northeast Corridor is unique by virtue of its historical location, development and economic importance, etc., to the hinterland. Yet the attempt to identify other emerging "corridors" and to focus on action programs to offset their transportation ills, apparently characteristic of corridors, would be timely from an economic sense if begun now.

1.2 *Objective:* The objective of this report, therefore, is to propose, for implementation between the remainder of 1968 through 1973, an initial set of "corridor" action programs or, as appropriate, planning and legislative packages. The purpose of such programs or packages would be to provide, on a regional basis, a framework for demonstrating or developing the means to improve, augment etc. the transportation and flow of people and commodities in sectors designated as "corridors".

1.3 *Definition of a Corridor:* There have been many qualitative descriptions of corridors. Each seems to include a high intensity of traffic flow between at least two densely populated urbanized centers. They have not, however, provided any consistent, numerical means whereby corridors might be identified, compared, limited or ranked. Consequently, for this report a "corridor" shall be defined as a *region* comprised of market areas for *short haul-high volume interurban transportation*. The traffic flow for commodities and passengers shall be considered to be concentrated between at least two of the *major* population centers which are also, at least 50, and no more than 250, miles apart. Along a link of the transportation network joining the population centers, interstitial stops shall be considered to exist or possibly to exist as a result of future urban development taking advantage of the transportation system's presence. Such stops shall be considered able to generate additional traffic to augment and interact with the primary flow in the corridor.

The minimal distance of 50 miles was selected in order to exclude daily commuter traffic. The maximum distance of 250 miles was selected because, at about that distance, CAB indicated a dominant use of the air mode for intercity transportation. On the basis of "minimizing" time and "out of pocket" costs, modes of transportation other than air would probably be much less competitive to provide the same service.

Furthermore, Table 1—"Means of Transportation and Distance of Trip: Four Quarters 1963" provides BPR data which offers additional substance to the distance criteria used to define a corridor. The data shows that approximately 60% of the passenger trips made in that year lie in the interval of 50 to 300 miles.

Interpretation of this information is cautioned, however, because the data is "conditional" to some of the travelers remaining away from home overnight. BPR has other data which indicates that intercity auto trips peak seasonally and are a minor portion of auto trips. Intercity trips account for the majority of the distance traveled because of the mileage involved. Nevertheless, a conclusion can be made. It is that although auto intercity trips are seasonal, any substitute would have to be low-cost and probably high speed. In subsequent discussions, paragraph 3.0, it will be illustrated that this transportation capability does not exist.

1.4 *Definition Rationale:* The definition in 1.3 is primarily a conceptual technique/basis for distinguishing corridors, not only from intra urban or long-haul intercity transportation, but also from limiting the definition of "corridors" to regions displaying *only one* principal axial-like traffic flow. This rationale permits two things:

The development of regional transportation planning goals in the context of intercity systems of competitive modes of transportation instead of one dominant mode, and

The examination of the use of emerging technologies, such as VTOL, when the traffic flow in the region appears more surface-like than axial.

TABLE 1—MEANS OF TRANSPORTATION AND DISTANCE OF TRIP—4 QUARTERS CALENDAR YEAR 1963[1]
[Percent distribution of trips and travelers]

Distance of trip	Trips						Travelers					
	All transportation	Auto	Bus	Air carrier	Railroad	Other	All transportation	Auto	Bus	Air carrier	Railroad	Other
	Percent distribution by means of transportation											
All trips	100	84	4	5	3	4	100	89	3	4	2	2
U.S. trips:												
Under 50 miles	100	90	6	----	1	3	100	94	3	----	1	2
50 to 99 miles	100	92	3	----	3	2	100	95	2	----	2	1
100 to 199 miles	100	90	4	2	2	2	100	93	2	1	2	2
200 to 499 miles	100	72	5	13	4	6	100	82	3	8	3	4
500 miles or more	100	47	4	33	8	8	100	61	3	23	7	6
Outside United States [1]	100	59	4	21	1	15	100	67	2	16	1	14
	Percent distribution by distance of trip											
All trips	100	100	100	100	100	100	100	100	100	100	100	100
U.S. trips:												
Under 50 miles	23	25	29	----	10	21	21	22	27	1	8	19
50 to 99 miles	23	26	18	----	24	10	25	26	19	----	21	9
100 to 199 miles	28	30	26	10	22	19	29	30	26	9	23	18
200 to 499 miles	16	14	18	37	24	25	16	15	18	35	25	25
500 miles or more	8	4	7	45	19	17	7	5	8	46	22	18
Outside United States [1]												

[1] Source: 1963 Census of Transportation trips of 100 miles or involving a night away from home.

2.0 CORRIDOR CANDIDATES

2.1 *Geographical Location:* The geographical location of a corridor is a "relative" consequence. It appears to be derived from the existence of a region and its associated social-economic etc. activities being where they are. These activities in turn depend on the density of the population at, at least, two paired points (O&D) and the traffic flow between these two points. But the levels of population and traffic flow that seem to determine a corridor in one region (e.g., the east) are not the same level required to describe a corridor in another region (e.g., the midwest).

Furthermore, a "critical" condition appears to be present in a corridor, irrespective of its location, whenever one or more modes of transportation available in the corridor cannot provide for the effective movement of goods or people in a specific time frame.

In order to determine "if" this critical condition does exist or "when" it might exist, traffic flow data between two distinct paired points is required. Intercity flow data, statistically consistent, which could show the burden levied on short haul regional transportation facilities is not readily available. This lack of well documented "regionalized" flow data forces the use of "logical" (as opposed to quantitative) procedures for determining both the location of corridors as well as their transport criticality. (In addition, this data gap prevents the validation and credible use of analytical methods that could generate alternatives for improving existing transportation systems.)

For this report, the logical procedures used to determine the geographical location of corridors consisted of applying available demographic statistics, namely populations, in well defined areas i.e., Standard Metropolitan Statistical Areas (SMSA).[2] Their application was as follows:

First, the continental U.S. was divided into 6 areas: Northeast-Middle Atlantic, South-East of the Mississippi, South-West of the Mississippi, Great Plains-Rockies, and Pacific Coast.

Secondly, within each area, the SMSA with the highest 1960 urban population was chosen. (These were called "initial SMSA's".) All SMSA's whose population was at least ¼ that of the largest SMSA and whose major city centers were not more than 250 miles from the city center of the largest SMSA, were included in the corridor. (These were called "basic SMSA's.") Counties and SMSA's lying between the basic SMSA's were also included in the corridor. In some cases, an SMSA adjacent to *a basic SMSA was also* included even though it did not lie between two basic SMSA's. This was done if the adjacent SMSA included an urbanized area of substantial size close enough to the urbanized portion of the basic SMSA to represent a feeder area for corridor transportation service.

Thirdly, the next largest SMSA in each area not located within an already defined corridor, as noted above, was treated as an "initial" SMSA. The process of developing appropriate "basic" SMSA's repeated and another corridor for the region was defined. This process was continued with other initial SMSA's as long as their 1960 populations were at least some minimum value. These minimum values were 300,000 in the Great Plains, 900,000 in the South East, and one million elsewhere.

2.2 *Corridors:* The following 15 corridors are rank ordered according to population in urbanized areas:

[Population]

1. Northeast	[3] 27,327
2. Southern Great Lakes	18,007
3. Texas	3,639
4. Ohio-Indiana	3,612
5. Northern California	3,486
6. Central Southeast	2,927
7. Missouri	2,589
8. Upstate New York	2,523
9. Florida	1,849
10. Northwest	1,731
11. Oklahoma	1,384
12. Southern California	1,325
13. Gulf	1,306
14. Arizona	779
15. New Mexico	518

The rank ordering changes if population density within urbanized areas is used as a ranking criteria, the order becomes the following:

[People per square mile within urbanized areas]

Corridor

1. Northeast	5,500
2. Upstate New York	4,520
3. Southern California	4,450
4. Missouri	4,280
5. Southern Great Lakes	4,170
6. Ohio-Indiana	4,160
7. Northern California	3,760
8. Northwest	3,380
9. Florida	3,150
10. Central Southeast	2,750
11. New Mexico	2,710
12. Gulf	2,630
13. Arizona	2,300
14. Oklahoma	2,070
15. Texas	2,000

The 15 corridors are plotted on a map of the SMSA's as of December 1965. (Figure 1). The corridors are numbered according to a rank ordering by people/sq. mile within urbanized areas. The plot also shows that SMSA's in some corridors align themselves into a linear arrangement, e.g., upstate New York (Mohawk Valley), Southern California, and the Northwest. Others, such as the Southern Great Lakes, Ohio-Indiana and the Southeast, have SMSA's which are spread out and have no distinct spatial pattern. The former group might be best suited to support line haul transportation systems but the latter, because of their spread-like distribution, might require a more versatile system other than the automobile—such as VTOL. This is discussed further in paragraph 3.0.

Other ranking criteria could be used to order the list of identified corridors. The aforementioned were used because they provided an indication of where most of the people in the United States are settled. Table 2 and 3 "Characteristics of Urbanized Areas Within Corridors" provides 1960 census summary of this information. Table 3 specifically points out that *11.3%* of the land area of the United States and *76.5%* of the urbanized population is located in the set of 15 corridors identified. (Appendix B).

3.0 TECHNOLOGY FOR SHORT HAUL INTERCITY TRANSPORTATION SYSTEMS

3.1 *Status:* A review was made of the technologies that might be suitable candidates for development into systems to combat corridor problems identified in paragraph 1.0. An "objective" selection of such a set of "suitable" technologies depends on Systems Analyses that can generate numerical measures of the interacting effect on demand for transportation by multimodal system schedules, system operating costs, user costs, system trip times and etc. Prototype analyses to provide this capability are in the process of being developed, primarily in the Northeast Corridor Transportation Project. Their initial results, however, are not expected much before the late fall. Some gross facts which lead to "thumb rules" are available. For instance, the given horsepower size of a surface propulsion system changes in proportion to the cube of the ratio of a new desired velocity to the original design velocity; i.e.:

$$\left(\frac{HP_2}{HP_1}=\left(\frac{V_2}{V_1}\right)^3\right)$$

TABLE 2.—CHARACTERISTICS OF URBANIZED AREAS WITHIN CORRIDORS

Corridor	Number of urbanized areas	Population in urbanized areas (thousands)	Area within urbanized areas (square miles)	Average population per urbanized area (thousands)	Population density within urbanized areas (people per square miles)
1. Northeast	25	27,327	4,969	1,094	5,500
2. Upstate New York	5	2,523	559	505	4,520
3. Central Southeast	13	2,927	1,066	225	2,750
4. Florida	5	1,849	586	370	3,150
5. Gulf	3	1,306	496	435	2,630
6. Texas	7	3,639	1,812	520	2,000
7. Oklahoma	7	1,384	669	197	2,070
8. Arizona	2	779	334	390	2,300
9. New Mexico	2	518	191	260	2,710
10. Southern Great Lakes	26	18,007	4,321	693	4,170
11. Ohio Indiana	8	3,612	866	450	4,160
12. Missouri	2	2,589	605	1,295	4,280
13. Northern California	3	3,486	929	1,160	3,760
14. Southern California	2	1,325	1,646	3,660	4,450
15. Northwest	3	1,731	513	578	3,380

TABLE 3.—CHARACTERISTICS OF URBANIZED AREAS WITHIN CORRIDORS

Corridor	Approximate percent of U.S. land area	1960 percent of U.S. urbanized area land area	1960 percent of U.S. urbanized area population	Weighted average median family income	Percent families with income >$10,000	Percent families with income <$3,000
1. Northeast	0.94	19.5	28.5	6,625	21.5	12.5
2. Upstate New York	.40	2.2	2.6	6,415	17.8	12.9
3. Central Southeast	2.49	4.2	3.5	5,170	12.7	25.1
4. Florida	.76	2.3	1.9	4,960	12.3	25.9
5. Gulf	.22	1.9	1.4	5,200	13.3	25.1
6. Texas	.93	7.1	3.8	5,580	15.0	21.3
7. Oklahoma	1.84	2.6	1.4	5,520	13.8	19.8
8. Arizona	.52	1.3	.8	5,840	12.5	15.0
9. New Mexico	.37	.7	.5	5,670	15.9	18.9
10. Southern Great Lakes	1.44	16.8	18.8	6,750	20.8	12.4
11. Ohio Indiana	.60	3.4	3.8	6,280	17.4	14.8
12. Missouri	.39	2.4	2.7	6,250	16.8	15.1
13. Northern California	.20	3.6	3.6	7,100	24.1	11.6
14. Southern California	.24	6.5	1.4	7,000	26.0	12.8
15. Northwest	.44	2.0	1.8	6,560	18.9	13.3
Total percent	11.3	76.5	76.5			

Footnotes at end of article.

APPENDIX B.—LIST OF CORRIDORS AND COMPONENT SMSA's[1] AS DETERMINED TO EXIST IN THE 6 SPECIFIC AREAS OF THE UNITED STATES

1. NORTHEAST-MIDDLE ATLANTIC AREA—SMSA's

	Urbanized area[2]		
	Population	Square mile area	Population per square mile
Northeast corridor:			
Atlantic City	125	60	2,082
Baltimore	1,419	220	6,441
Boston	2,413	516	4,679
Bridgeport	367	171	2,140
Brockton	111	41	2,728
Fall River	124	48	2,604
Fitchburg	72	58	1,254
Hartford	382	131	2,909
Jersey City		[3]	
Lawrence	166	70	2,356
Lowell	119	30	3,952
Meriden	52	24	2,206
Newark		[3]	
New Bedford	127	30	4,265
New Britain	100	23	4,420
New Haven	279	84	3,327
New London		[3]	
New York[1]	14,115	1,891	7,462
Norwalk	82	39	2,120
Paterson-Clifton		[3]	
Philadelphia	3,635	597	6,092
Providence	660	188	3,508
Springfield	111	33	3,417
Stamford	167	98	1,702
Trenton	242	75	3,219
Washington	1,808	341	5,308
Waterbury	142	50	2,810
Wilmington	284	90	3,152
Worcester	225	61	3,678
Total	27,327	4,969	5,500
Upstate New York (Mohawk Valley):			
Albany	455	106	4,281
Buffalo	1,054	160	6,582
Rochester	493	113	4,355
Syracuse	333	68	4,923
Utica-Rome	188	112	1,671
Total	2,523	559	4,520

2. SOUTH-EAST OF MISSISSIPPI

Central Southeast:			
Asheville	69	32	2,124
Atlanta[1]	768	246	3,125
Augusta, Ga	124	43	2,870
Birmingham	521	157	3,325
Charlotte	210	74	2,836
Chattanooga	205	89	2,302
Columbia, S. C	162	52	3,109
Gadsden	69	47	1,467
Greenville	127	53	2,412
Huntsville	75	53	1,409
Knoxville	173	60	2,983
Nashville	347	129	2,682
Tuscaloosa, Ala	77	31	2,915
Total	2,927	1,066	2,740
Florida:			
Fort Lauderdale	320	124	2,582
Miami[1]	853	183	4,657
Orlando	201	77	2,617
Tampa	302	103	2,919
West Palm Beach	173	99	1,753
Total	1,849	586	3,150
Gulf:			
Baton Rouge	193	57	3,406
Mobile	268	172	1,563
New Orleans[1]	845	267	3,172
Total	1,306	496	2,630

3. SOUTH-WEST OF MISSISSIPPI

Texas:			
Austin	187	51	3,691
Dallas	932	647	1,441
Fort Worth	503	273	1,844
Galveston	119	153	773
Houston[1]	1,140	431	2,647
San Antonio	642	192	3,337
Waco	116	65	1,790
Total	3,639	1,812	2,010
Oklahoma:			
Amarillo, Tex	138	55	2,518
Fort Smith, Ark	62	29	2,104
Lawton	62	13	4,693
Oklahoma City[1]	429	385	1,114
Tulsa	299	70	4,258
Wichita, Kans	292	80	3,665
Wichita Falls, Tex	102	37	2,730
Total	1,384	669	2,070
Arizona:			
Phoenix[1]	552	248	2,222
Tucson	227	86	2,632
Total	779	334	2,330
New Mexico:			
Albuquerque	241	76	3,174
El Paso, Tex	277	115	2,410
Total	518	191	2,610

4. MIDWEST–EAST OF MISSISSIPPI

Southern Great Lakes:			
Akron	458	141	3,243
Ann Arbor	115	28	4,132
Bay City	73	23	3,164
Canton	214	51	4,213
Chicago[1]	5,959	960	6,209
Cleveland	1,785	587	3,042
Detroit	3,538	732	4,834
Flint	278	75	3,694
Fort Wayne	180	49	3,695
Gary		[3]	
Grand Rapids	294	91	3,226
Jackson, Mich	71	22	3,231
Kalamazoo	116	42	2,747
Kenosha	73	13	5,519
Lansing	169	47	3,587
Lima, Ohio	63	13	4,806
Lorain	143	81	1,755
Mansfield	92	35	2,650
Milwaukee	1,150	392	2,934
Muskegon	95	24	3,956
Pittsburgh	1,804	525	3,437
Racine	96	15	6,566
Saginaw	129	31	4,155
South Bend	219	64	3,421
Steubenville	82	37	2,218
Toledo	438	135	3,249
Youngstown	373	108	3,451
Total	18,007	4,321	4,180
Ohio-Indiana:			
Cincinnati[1]	994	242	4,101
Columbus, Ohio	617	145	4,259
Dayton	502	125	4,029
Hamilton, Ohio	50	34	2,633
Indianapolis	639	145	4,412
Louisville, Ky	607	136	4,474
Muncie	78	18	4,404
Springfield, Ohio	90	21	4,377
Total	3,617	886	4,080

5. GREAT PLAINS-ROCKIES

Missouri:			
Kansas City	921	282	3,262
St. Louis[1]	1,668	323	5,160
Total	2,589	605	4,280

6. PACIFIC COAST

Northern California:			
Sacramento	452	134	3,373
San Francisco[1]	2,431	572	4,253
San Jose	603	223	2,702
Vallejo		[3]	
Total	3,486	929	3,750
Southern California:			
Anaheim		[3]	
Los Angeles[1]	6,489	1,370	4,736
San Diego	836	276	3,033
Total	7,325	1,646	4,450
Northwest:			
Portland	652	192	3,387
Seattle*	864	238	3,626
Tacoma	215	83	2,596
Total	1,731	513	3,370

[1] The SMSA with a [1] is the 1 with the largest population in that corridor.

[2] The figures shown are for urbanized areas which correspond most closely with a given SMSA. In most cases there is a 1-to-1 correspondence.

[3] The symbol indicates that the statistics for the particular SMSA are included under another SMSA since the urbanized area covers both.

FOOTNOTES

[1] See Appendix A for discussion on right-of-way and site problems of Corridor Transportation Systems.

[2] SMSA's were used as the basic geographical element because an SMSA provides the location of distinct jurisdictional boundaries. However, urbanized areas, as defined in the 1960 census, having circles of specific and urban population density were used to point out the major population centers necessary to establish a corridor.

[3] The Northeast Corridor's boundaries were taken as previously defined by the Office of High Speed Ground Transportation, and the Southern Great Lakes Corridor was defined in a somewhat different way from the remaining corridors (the 250 mile radius was centered at Detroit rather than Chicago, the initial SMSA).

Mr. PELL. Mr. President, I ask unanimous consent that my substitute be printed as an amendment even though it may not be acted on today.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

Mr. PELL. Mr. President, the substitute I propose contains the best provisions of the national corporation proposal, but it does not contain its handicaps. It includes the same protective labor provisions, basically the same financial provisions and the same basic format. To my knowledge, neither the rail carriers, nor rail labor have voiced any objections to my substitute amendment on its merits. It would not necessarily cost the Department of Transportation any more than the national corporation proposal.

I have testified many times before the Commerce Committee over recent years regarding my ideas about rail passenger service, and the committee knows that I have given much serious thought to possible viable solutions to the rail passenger problem. I believe my substitute amendment represents a realistic and lasting solution to the rail passenger problem.

Mr. President, I would hope that my substitute amendment would be favorably considered.

Mr. President, I reserve the remainder of my time.

The ACTING PRESIDENT pro tempore. Who yields time?

Mr. HARTKE. Mr. President, I yield myself 5 minutes.

The ACTING PRESIDENT pro tempore. The Senator from Indiana is recognized for 5 minutes.

Mr. HARTKE. Mr. President, as far as I am concerned personally, and I know as far as every member of the Senate Commerce Committee is concerned, the junior Senator from Rhode Island is deserving of the greatest admiration for his continuous support for some type of general rail transportation in the United States. He also is paid highly deserved tribute for the work he did in connection with enactment of the High Speed Ground Transportation Act of 1965.

The enactment of the High-Speed Ground Transportation Act of 1965 is a direct result of Senator PELL's vigorous efforts employing his unparalleled expertise. The success of the Metroliner is an outgrowth of that program and its success thus far has revitalized the interest of the general public in rail passenger travel.

I must, however, oppose the Senator's proposed amendment. First, the proposal assumes that there is no future for rail passenger service for distances greater than the arbitrary distance of 500 miles. It would have the railroads continue providing such service through the application of a direct operating subsidy which, unlike S. 3706, has no safeguards whatsoever.

I have been assured by Secretary Volpe that the situation with respect to long-haul service may not be as bleak as commonly assumed.

The regional passenger train service corridors authorized by title II of the amendment require special mention. I fully support the idea of a regional approach to transportation planning and development. Recently, the Committee on Commerce has had extensive hearings on S. 2425, the National Transportation Act, which authorizes the States to carry out just such a program on a regional basis. The thrust of this bill, which is amply supported in the hearings, is that most transportation planning and programs are now fragmented by modes and often uncoordinated and fragmented within each other and with other nontransportation activities. By limiting their scope to rail passenger service, the regional corporations contemplated in the amendment only serve to perpetuate and further aggravate an already serious problem.

Moreover, there is no assurance that these regional corporations could be economically viable with each one fragmented and apart from the others. A possible exception might be the Washington-Boston Northeast Corridor but that, as is well known, is a special case. Each region would be expected to flourish or flounder on its own—neither the revenues nor the losses could be shared. This kind of sharing is basic, however, to the functioning of the whole country.

This fragmentation of organizations would create many problems to which, frankly, I am not so sure we have given consideration.

The proposed Pell amendment in the nature of a substitute for the bipartisan bill to create a national passenger train corporation would create a highly fragmented set of organizations to operate a service which has suffered over the years from fragmentation and now cries out for unification. Under the Pell amendment, some 18 separate corporations would be established, each with up to 21 directors, each with an executive director earning in the neighborhood of $25,000. It would be an incredibly complex and unwieldy structure, overlapping in jurisdictions and virtually impossible to coordinate at the national level.

Rail passenger service can most efficiently be provided by a unified authority. A single nationwide organization could:

Insure uniformity of service standards at a high level.

Achieve best utilization of equipment—shifting between winter and summer peaks in different parts of the country.

Minimize maintenance costs through consolidation of facilities.

Integrate ticketing and scheduling to serve a national network rather than isolated regional services.

Achieve a positive national image and minimize promotional costs through national advertising.

Avoid costly organizational overheads by streamlining and unifying rail passenger management.

The ACTING PRESIDENT pro tempore. The time of the Senator has expired.

Mr. HARTKE. Mr. President, I yield myself an additional 2 minutes.

In short, the advantages of regional initiative and control of passenger services advocated by the Pell amendment are not sufficient reason to incur the vastly greater operating costs associated with fragmentation of what should be a nationwide passenger system.

Finally, the use of a regional approach is fully contemplated and compatible with the committee's bill if, in a particular area, the local interests involved and the national corporation created by the committee's bill find this to be the best solution. Here, again, the committee's bill does not anticipate a single solution for all areas of the country which may not work in all areas.

In sum, Mr. President, I feel that the amendment is overly specific and narrow in an area where latitude and flexibility are in order. While the amendment raises many useful points, all of these are incorporated in the broader solution afforded by the committee's bill.

Let me repeat, perhaps more concisely, my objections:

First. Although it purports to meet rail service needs in many regions of the country, in fact it will provide service only in the Northeast. Without the advantages of an integrated national system, such as are provided by the committee substitute amendment, no region outside of the Northeast would be able, on its own, to survive financially for more than a short while. For travelers in the South, the Midwest, the Southwest, the Plains States, the Mountain region, the Far West, and the Northwest, the Pell amendment will not assure future rail passenger service.

Second. It would sound the death knell for long-haul rail passenger transportation in the United States. It provides no money for and creates no organization that would be responsible for a long-distance service. There would be no place for the California Zephyr, the Super Chief, the Broadway Limited, the Panama Limited, the Empire Builder, or any of the excellent trains operating between New York, Florida, and the South. The proposal thus would eliminate service that is now well patronized, deprive the public of a good transport alternative, and axe thousands of rail jobs.

Third. It is cumbersome and unworkable, from both an operational standpoint and in terms of the ability of railroads to affiliate with the various regional corporations it would spawn. Rail service is not confined to a single region or regions. Existing rail routes crisscross regions and run in between. Rail service in the Northeast, for example, is intrinsically intertwined with service to and from the West and to and from the South. It is simply impractical to separate intranortheast service from other regions and other parts of the country. Further, from a practical accounting standpoint, it would be impossible for any railroad to determine what it would owe to any particular corporation since its books would not be kept on a basis consistent with the implicit requirements of section 401(a)(2).

Fourth. It creates a budgetary puzzle. The sponsors speak of 18 separate regional corporations. Though it is not clear I assume that the amount for all 18 corporations would total the same as the amount contained in amendment 608. If this is true it is not unlikely that a major portion of the funds allocated would be eaten up by substantial administrative costs of the 18 corporations.

SUMMARY OF CASE FOR THE COMMITTEE CORPORATION APPROACH

A practical, financially feasible approach.

Involves no continuing government operating subsidy.

Offers real opportunity for improved rail passenger service.

Will afford modern service in a basic system serving all parts of the country. Major long-haul routes will be included along with extensive service in corridor regions.

Helps the railroads, but exacts a reasonable quid pro quo.

Provides vastly improved intercity transportation for the traveling public: Rail passenger service likely to be maintained in virtually all States and regions, but with the elimination of routes that are unlikely to be financially self-sustaining.

For rail labor: Creates chance of new jobs without diminishing protective features.

Allows States and local communities to maintain rail passenger service that would otherwise be discontinued by agreeing to meet operating deficits, in an amount not less than 50 percent.

Mr. President, I want to again repeat the great respect that all members of the committee have for the fine work that the Senator from Rhode Island (Mr. PELL) has done in this area. It has been an outstanding contribution. He has been on this matter a long time. But I would hope the Senate would reject the amendment.

Mr. PELL. Mr. President, I yield 5 minutes to the Senator from Massachusetts (Mr. KENNEDY).

Mr. KENNEDY. Mr. President, the bill we consider today is one of great importance to the Nation in terms of meeting the transportation needs of a growing and mobile population. I do not think there is any need to site the growing concern of the traveling population about the provision of efficient intercity rail passenger service. Response to this concern is demonstrated by the recognition that if such service is to be provided, the Federal Government is going to have to play a significant role in the maintenance and distribution of that service.

And so, I have no wish to impede the Senate in its attempt to take necessary action to guarantee the provision of a national rail passenger system. However, I do join with Senator PELL in questioning the approach and the emphasis of S. 3706.

If I may, I would like to outline the rationale behind the substitute amendment Senator PELL and I have offered.

It is my firm belief that the transportation problems faced by this Nation today cannot be resolved within the same framework that contributed to their development. We in the Congress can no longer afford to consider specific transportation problems in a vacuum. We must concentrate our efforts on the development of balanced, intermodel transportation systems for the future. And we must develop those systems to meet the needs of the traveling population in the most efficient and economically viable way.

Any review of the transportation situation as it exists today immediately brings to light some basic facts. The most obvious one is that the crisis in transportation today is in the highly developed, densely populated urban regions of our country. The plain truth is that the jet airplane has solved our long distance and transcontinental transportation needs. And the development of the SST will more than adequately meet our intercontinental transport needs for many years to come.

However, we do not have the capability to move people efficiently from Boston to New York; from Chicago to Cleveland; from Los Angeles to San Diego; from Miami to Jacksonville; from Portland to Seattle; from Dallas to Houston. Yet, these are the very regions of the country where the demands for fast, convenient, and dependable transportation service is greatest.

I believe that the Senate must recognize the inadequacy of our current approach to the resolution of these regional transportation problems. Senator MAGNUSON, the able chairman of the Commerce Committee, has sponsored legislation which I feel goes to the heart of the problem. His bill, the National Transportation Act, reflects the broad knowledge and creative foresight necessary to come to grips with our national transportation crisis. The National Transportation Act—with its provisions for the establishment of Regional Transportation Planning Authorities and its emphasis on comprehensive transportation planning and research and development—gives us the opportunity to do what we should have done 30 years ago. It gives us the opportunity to plan, develop, and execute rational regional transportation systems that are linked coherently to a comprehensive national transportation policy.

Senator MAGNUSON's bill recognizes the fact that transportation needs differ from region to region. His bill, if approved, would allow the responsibility for the resolution of transport problems to be placed where it belongs—at the regional or local level.

And so, in light of my support for S. 2425, the National Transportation Act, I questioned the use of a national approach to meet our need for a rail passenger system. The substitute amendment I have offered with Senator PELL, carries forth the regional concept as outlined by Senator MAGNUSON by placing responsibility for short distance rail passenger service at the corridor level. At the same time, the amendment recognizes that some long distange rail service may be necessary. It places the responsibility for the development of such necessary service with the Department of Transportation. The Secretary of Transportation will decide if the public interest is served by the continuance of long-haul and transcontinental rail passenger routes. If he decides that such service is necessary, he will have to be willing to commit public moneys to finance such service.

Thus, the substitute amendment eliminates the cross subsidy between urban corridor service and long-distance passenger service. The elimination of such a regressive provision means that all the revenues earned within a specific corridor or region can be plowed back into the improvement or extension of that region's passenger system.

Senator PELL has long been in the forefront of the transportation field. It was through his efforts that President Kennedy gave his approval and support to the Northeast Corridor transportation project. And it is because of this project that we can say with confidence today that the maintenance and improvement of rail passenger service to meet the short-distance travel needs of our urban populations is an economically sound concept.

At the same time, the Northeast Corridor project shows that to achieve such economic viability in the field of rail passenger service, some hard decisions must be made by those who determine transportation policy for the Nation. The first decision to be made is one that recognizes that you cannot hope to develop a break-even operation in the rail passenger field unless you are willing to admit that long-distance passenger service has to be discontinued or, at least, operated and funded separately from short-distance service. Second, to operate short-distance service at maximum efficiency you must be willing to make a significant investment in programs which assist in reducing intercity trip times. In the rail passenger field, time is money. Studies conducted by the Northeast Corridor project staff show that capital investments in short-distance rail service—which result in trip time reduction—produce an increase in patronage which more than pay for the initial investment.

Because Senator PELL and I have followed the Northeast Corridor project closely over the last several years, we realize that the value of the project far exceeds the geographical boundaries within which it was conducted. The transportation problems in the Northeast—although more serious than those in other urban corridors—are similar to the problems developing throughout the Nation in our urban centers. Therefore, we viewed S. 3706 in light of what we have learned as a result of the Northeast Corridor study. And we found the bill not responsive to that new knowledge. First because it fails to provide for the separate operation of short distance and long-haul passenger service. Thus our amendment calls for a program which meets the Nation's needs for rail passenger service on two levels—the first level provides for the establishment of corridor passenger systems to be managed by nonprofit corporations; the second level provides for the continuance of long-haul passenger service at the discretion of the Secretary and administered and financed apart from the corridor systems.

Second, S. 3706 failed to make provisions authorizing the investment of corporation funds in the improvement of existing roadbeds. Here again, the Northeast Corridor project showed that the most necessary and productive improvement that can be made in terms of trip time reduction is the improvement of roadbeds and the elimination of roadbed crossings. Our amendment includes roadbed improvements under the guarantee provisions of S. 3706. Without such a provision, one can well question the extent of the commitment we hope to make today to the maintenance of rail passenger service.

Mr. President, I urge my colleagues to give careful consideration to the amendment currently under consideration. I want to stress that although Senator PELL and I have referred often to the Northeast Corridor transportation project in our arguments in favor of this amendment, we do so because the study represents the Nation's first attempt to review and project the total transportation needs of an economically contiguous geographic region of the country. We do so because we believe that the study has relevance for similar regions across the breadth of our Nation. We do so because the study clearly directs that we place our emphasis in the transportation field on the development of balanced, intermodal transportation systems where they are most needed—in our developing corridor areas.

So I want to take this opportunity to commend Senators MAGNUSON, HARTKE, and PROUTY for their long and productive work in bringing S. 3706 to the Senate floor. I join with them in stressing the urgency of Senate action to guarantee the provisions of rail passenger service to meet the needs of our mobile population. And I hope that they will consider this amendment as an attempt to assist in the realization of that objective.

I want to commend once again the Senator from Rhode Island (Mr. PELL) for his long and continued efforts to represent the public interest in this most important area of national concern. His work has been both productive and farsighted, and it is a pleasure for me to have the opportunity to say it at this time.

Mr. PELL. I thank the Senator from Massachusetts.

Mr. President, how much time do I have remaining?

The ACTING PRESIDENT pro tempore. The Senator has 5 minutes remaining.

Mr. PELL. Mr. President, in digest, there are six advantages to this proposal.

First, this proposal puts the trains where the people are; 76 percent of our population are urbanized. That is where the trains would be used.

Second, my urban corridors amendment puts the trains where they are the most economical mode of moving passengers, that is, in urban corridors of less than 500 miles.

The third advantage of my amend-

ment is that it creates urban corridor corporations potentially more economically viable than the proposed national rail corporation.

The fourth advantage of my urban corridors proposal is that it provides for the establishment of a national rail policy without the need for a national bureaucracy unresponsive to overall regional transportation requirements.

The fifth advantage of my substitute proposal is that it allows for the development and future use by corridor corporations of new modes of high speed ground transportation, such as tracked air cushioned vehicles, and turbotrains. Finally my urban corridors corporation proposal provides a better deal for the railroads and labor.

Since railroads will have to buy into urban corridor corporations only on the basis of their avoidable losses within the urban corridor system where losses have been low, railroads will not be required to contribute as great a sum as they would to a national corporation which assumed all long distance service.

Also, since the urban corridor corporations would not have to subsidize internally, costly, infrequently scheduled long distance trains, they would be able to run an even greater number of corridor trains thus, with more trains running, rail labor would have more jobs.

I reserve the remainder of my time.

I have two or three questions I hope the Senator from Indiana might answer, on his time.

Mr. HARTKE. I shall be happy to answer the Senator's questions on my time.

Mr. PELL. Mr. President, is it the intention of the sponsors of the national corporation proposal that there will be frequently scheduled train service in the urban corridors? There are many such corridors—more than 15 corridors—as shown by the documents I have inserted in the RECORD. Will there be sufficient scheduled train service to meet passenger demands? Is this the intention of the sponsors?

Mr. HARTKE. It certainly is. This is the intention of the bill, and it is definitely contemplated that greater frequency of service would be the result. The whole purpose of changing the management is simply that we expect the present system of railroad passenger scheduling to be improved upon in such measure as will make it attractive for people to use this type of service.

Mr. PELL. I thank the Senator from Indiana. Is it the intention of the sponsors of the national corporation proposal that the corporation would do its best to utilize new modes of high speed ground transportation, such as the turbotrain which we presently have going in New England, or tracked air cushion vehicles, and systems of that sort?

Mr. HARTKE. Yes, it certainly is. In the hearings on passenger service legislation, it was brought out with considerable emphasis that new techniques of transportation should not be restricted to those in existence today, but that there are other types of vehicles which should be utilized, some of which have already been demonstrated. There is for example, a demonstration vehicle outside Paris, France, which moves over a cushion of air on a small rail. It is completely noiseless and nonpolluting.

The operation of such vehicles by the Corporation could be considered under the act by the Corporation.

Mr. PELL. I thank the Senator. I once had the privilege of riding in that train in France; it is just as the Senator says.

Is it the intention of the sponsors of the proposal that the National Rail Corporation will make every effort to coordinate the overall policy with the needs of the burgeoning urban corridors, no matter where they are, in my part of the country in New England, or perhaps between Chicago and Indianapolis, or Seattle and Portland? Wherever these corridors are, will the thought be kept in mind that these are the areas where demands will probably be greatest?

Mr. HARTKE. Most certainly. It is the view of the sponsors of this legislation that the regional concept is not eliminated from consideration. We simply believe that regional areas should not be defined by the legislation itself. The regional concept is not only considered to be permissive under the concept of amendment No. 608, but the State, regional or local agencies can force the Corporation to institute rail passenger service under certain conditions. Those conditions do, however, include sharing in the financing of the service, which was not within the system as originally designated by the Secretary or subsequently expanded by the Corporation.

In other words, the regional concept is preserved under the bill before us, and I think that if the Senator could see his way clear, possibly we could, under the provisions of this legislation, provide for the adoption of many of the worthwhile ideas that the Senator from Rhode Island has advanced heretofore, not only in committee, but on the floor of the Senate.

Mr. KENNEDY. Mr. President, will the Senator yield?

Mr. HARTKE. I am happy to yield.

Mr. KENNEDY. Does the Senator think the bill places sufficient emphasis on short-distance service? I know part of his response to the Senator from Rhode Island related to this, but I was interested in any further observations he could make on the subject.

Mr. HARTKE. I would say to the Senator from Massachusetts that, if anything, the whole thrust of our effort accepts the fact that short-distance service is apt to be the most profitable. The only reason I have specifically mentioned long-haul train service is the fact that we do not consider that picture to be nearly as bleak as some people do, and I do not think it is nearly as bleak as the Senator from Rhode Island believes.

In our opinion, there is no question that short-haul intercity transportation would be given priority consideration.

Mr. KENNEDY. I would gather from what the Senator has said, and from the report as well, that he can virtually guarantee improved rail passenger service within the Nation's corridors.

Mr. HARTKE. Let me say that if there is not improved rail transportation service, there are going to be an awful lot of disappointed people in the United States, and at least one Senator will be very much disappointed. I am certain that the passage of this bill will not only save what is evidently now a dying rail passenger service in America, but will revitalize it in a fashion which will make it not only a desirable mode of transportation from a traveler's standpoint, but economically viable as well.

Mr. KENNEDY. Do I correctly understand that this is really the intent and the trust of the legislation?

Mr. HARTKE. The Senator is absolutely correct. That is the intent of the bill.

The ACTING PRESIDENT pro tempore (Mr. BYRD of Virginia). Who yields time?

Mr. HARTKE. Mr. President, I yield such time as he may require to the Senator from Vermont.

Mr. PROUTY. Mr. President, if there should be, and I believe there will be, a substantial restoration of passenger train service in this country, the distinguished Senator from Rhode Island is entitled to most of the credit, because over the years he has been steadfastly working toward this end, and I wish to commend him most highly.

I do, however, feel that I cannot in good conscience support his present amendment, and I associate myself with the remarks made by the distinguished chairman of the subcommittee (Mr. HARTKE). But I do wish to commend the Senator from Rhode Island for the great service he has rendered to the Nation.

Mr. PELL. Mr. President, how much time do I have remaining?

The ACTING PRESIDENT pro tempore. The Senator has 2 minutes.

Mr. PELL. I thank the Senator from Vermont and the Senator from Indiana, and again congratulate them on having moved ahead as they have.

The bill as it is is a great step forward. I am just trying to make it two steps forward. Moreover, as one who regularly takes, what I do not call the "sleeper" but what I call the "waker," from Rhode Island down here to Washington weekends; and as one who does not really like to fly too much, I would like to think I have a better choice than of being either a little uneasy in an airplane or a little shaken up in the train. I usually end up taking the plane and being a little uneasy.

But whatever the reason may be, I would hope we can get decent rail service in the corridors, and I believe that the pending bill, even without my amendment, is much better than no bill at all.

For that reason, and with the permission of my colleague from Massachusetts, and having assessed the votes that are available in the Senate, and well realizing that I do not have the majority support of this body, I ask unanimous consent, with the permission of the Senator from Indiana, to withdraw my substitute amendment.

The ACTING PRESIDENT pro tempore. The Senator may withdraw his own amendment.

Mr. PELL. Do I not require unanimous consent?

The ACTING PRESIDENT pro tem-

pore. The Senator does not need unanimous consent.

Mr. PELL. In that case, I have a compromise amendment, which I offer now in behalf of myself and the Senator from Massachusetts (Mr. KENNEDY) as an amendment to the Hartke substitute amendment, and ask that it be stated.

The ACTING PRESIDENT pro tempore. The amendment will be stated.

The ASSISTANT LEGISLATIVE CLERK. The Senator from Rhode Island (Mr. PELL) proposes an amendment for himself and the Senator from Massachusetts (Mr. KENNEDY), as follows:

On page 3, line 20, insert the following: "(h) 'Regional transportation agency' means an authority, corporation, or other entity established for the purpose of providing passenger service within a region."

On page 18, line 5, insert after "provided" the following: "(i) either"

On page 18, line 7, insert after "section" the following: "or (ii) by a regional transportation agency, provided such agency gives satisfactory assurance to the Corporation of the agency's financial and operating capability to provide such service, and of its willingness to cooperate with the Corporation and with other regional transportation agencies on matters of through train service through car service, and connecting train service. The Corporation may at any time subsequent to March 1, 1971, contract with a regional transportation agency to provide intercity rail passenger service between points within the basic system included within the service of such agency."

On page 18, line 14, insert after "railroads" the following: "or with regional transportation agencies"

On page 18, line 24, insert after "railroad" the following: "or agency"

On page 26, line 9, insert after "corporation" the following: "or agency"

Mr. PELL. This amendment would——

The ACTING PRESIDENT pro tempore. How much time does the Senator yield himself?

Mr. PELL. I yield myself 5 minutes.

This amendment which the Senator from Massachusetts and I propose allows regional transportation agencies, whether they be a nonprofit corporation or a regional public authority, to contract for passenger service under the corporation's jurisdiction if they give satisfactory assurance to the corporation of their willingness to cooperate with the corporation on matters of through car service and connecting train service.

In other words, if there is a regional transportation agency which can provide passenger service within a region where the corporation is providing passenger service, the regional transportation agency may be allowed to assume that passenger service from the corporation.

My amendment further allows regional transportation agencies to be eligible for guarantees which the Secretary of Transportation may wish to provide under the authority of the substitute amendment establishing the National Rail Corporation.

While the amendment I suggest is not as desirable from my point of view as the substitute amendment I proposed to establish urban corridor corporations, the amendment I propose now does offer a number of distinct advantages.

First, it provides within the National Corporation a role for publicly oriented nonprofit corporations and regional authorities responsive to the overall transportation requirements of balanced transportation policy within a region.

It would be consistent with the excellent bill, S. 2425, introduced by Senators MAGNUSON, HART, HARTKE, LONG, and PEARSON to establish regional transportation agencies to undertake balanced transportation planning. I understand that the bill is due for later Senate action.

Second, my amendment would allow for initiatives by publicly minded businessmen and State governments in the improvement of passenger service. It would provide a channel for contributions from business sources and grants from State and local agencies.

Third, it would provide a mechanism for corridors within a region to obtain additional passenger train service. Corridor service provided by a regional agency operating under the provisions of my amendment would not be constrained by the need to funnel profits outside of a corridor to pay for unrelated long distance service. A regional agency operating under the provision I suggest would be able to reinvest its income into meaningful improvements in passenger services within its own corridor.

Mr. President, I think the amendment I suggest is a compromise that reflects everyone's concerns, and I would hope that it would be accepted.

Mr. MAGNUSON. Mr. President, will the Senator yield?

Mr. HARTKE. I yield.

Mr. MAGNUSON. As I understand it, after the many conferences we have had on this matter, the amendment now proposed is purely permissive.

Mr. PELL. That is correct—"may," not "shall."

Mr. MAGNUSON. Second, as the national corporation works toward solving this complex transportation problem, it could allow a regional authority to provide service, either under the bill the Senator mentioned which we introduced for the national corporation or under this bill.

Mr. PELL. This is one bill.

Mr. MAGNUSON. Under the amendment, I mean.

Mr. PELL. Exactly.

Mr. MAGNUSON. Third, the Senator from Rhode Island has done yeoman service in attempting to solve the monumental transportation problems in the New England corridor. Your amendment to the substitute allows, if it seems economically feasible, a private corporation to provide service. Is that correct?

Mr. PELL. That is correct, because we have a group in New England that is moving in that direction.

Mr. MAGNUSON. And that would have to be passed upon by the corporation under the bill, and I suspect that we would want to have some tacit approval of the Department of Transportation on such a private operation. That is desirable.

Mr. PELL. That is not only desirable but also to be expected, since the Secretary of Transportation would have representation on the corporation's board.

Mr. MAGNUSON. I commend the Senator from Rhode Island—and I am sure the Senator from Indiana, the Senator from Vermont, and the Senator from New Hampshire, join me—for his dedicated effort to do something about a transportation problem which I think we are all aware is currently much more acute in the New England corridor than any place else.

Mr. PELL. I thank the Senator from Washington. Actually, while the problem is particularly acute from Boston down to Washington, 20 or 30 years from now, I believe it will be just as acute between Seattle and Portland and in the other corridors around the country.

Mr. MAGNUSON. I hope that will not be true. I hope this bill will start a reverse trend.

Mr. HARTKE. I yield myself such time as necessary.

Mr. President, the amendment submitted by the Senator from Rhode Island has been discussed with Senators MAGNUSON, COTTON, PROUTY, and other members of the committee.

What it would do, in substance, is to preserve the basic organic provisions of the substitute provision which has been introduced and is before the Senate concerning the national corporation concept, and at the same time it would provide for recognition that the regional concept might have some validity within that national framework. For this reason, we have decided that this amendment can be accepted as an amendment to the substitute amendment before the Senate at this time.

The PRESIDING OFFICER. Does the Senator from Indiana yield back his time?

Mr. HARTKE. I yield back the remainder of my time on the amendment.

Mr. PELL. I yield back the remainder of my time.

The PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment was agreed to.

Mr. PELL. Mr. President, I offer an amendment for myself and Senator KENNEDY to allow roadbed improvements to be included under the guaranty provisions of the National Corporation Act.

The PRESIDING OFFICER. The amendment will be stated.

The assistant legislative clerk read as follows:

On page 26, line 9, insert the following: after "finance" "the upgrading of roadbeds and"

Mr. PELL. Mr. President, one of the major problems for the railroads for some time has been that they have had great difficulty in raising capital for roadbed improvements. This has largely been caused by their heavy, historic mortgage debt which has precluded new security issues.

By contrast, the railroads have been able to borrow for equipment purchases at favorable rates. In consequence, rail roadbeds over the country have steadily deteriorated to a considerable extent causing the rash of derailments which have occurred in the last several years. If rail passenger service is even to be maintained at its present levels, money must be spent on restoring roadbeds to levels for safe operation.

It is easy to raise capital for the vehicles that ride the rails, but not for the roadbeds today. The rails themselves are built under exactly the same system as they were built prior to the Civil War, with steel rails, wooden ties, and gravel.

Just 2 weeks ago, I achieved one of the ambitions of my life and rode the high-speed Japanese railroad. I walked down those rails a bit and saw how they were welded, with rubber pads between the rails and ties, and the ties were made of concrete. This is the kind of improvement we should have. It would make a great difference in riding in a railroad car, and would prevent us being shaken up like a martini cocktail.

Moreover, if improvements are to be made in rail passenger operation, particularly in running times which have the greatest payoff in patronage, roadbeds must be upgraded. Otherwise, trains cannot be operated safely at higher speeds.

It may be argued that roadbed improvements on all the passenger mileage of railroads in the United States would cost very large amounts of money. This is true. On the other hand, the Northeast Corridor Transportation Project Report, just released this week, points out that relatively small amounts of money can be invested in selected segments of roadbed with very probable dramatic results in terms of increased patronage.

I ask unanimous consent that the study report of the Department of Transportation on roadbed improvements be printed at this point in the RECORD.

There being no objection, the report was ordered to be printed in the RECORD, as follows:

NORTHEAST CORRIDOR REPORT—NEAR TERM COURSES OF ACTION, RAIL PASSENGER SERVICE IN THE NEC 1969

ROADBED IMPROVEMENTS

[Dollars in millions]

Expenditures (cumulative)	Running time reductions-minutes (cumulative)	Time to complete-months	Present value of added gross revenues over 10 years at 10 percent discount	Change in revenues less change in expenditures
New York–Boston:				
10.3 [1]	19.0	6	$30.0	$19.7
21.1	27.8	9	49.9	9.1
36.2	36.8	10	66.3	1.3
52.8	46.3	12	77.9	−5.0
78.2	53.4	12	86.1	−17.2
Washington–New York:				
16.0	9.9	9	37.5	21.5
33.3	17.8	10	67.3	12.5
78.7	28.5	12	107.9	−4.8

[1] Maximum available under Hsgt Act; no other statutory authorization exists.

Note: Reductions in running times are calculated from demonstration schedules in effect during June 1969.

Mr. PELL. According to the corridor report, these roadbed improvements would be paid for several times over by increased revenues. Without guarantees, the corporations will not have sufficient capital resources to make even small roadbed improvements.

Moreover, the corridor report indicates that the most effective improvements which can be made in corridor intercity transportation to reduce passenger trip times are roadbed improvements. This can be done at a lower cost than any improvements in other modes.

What is true in the Northeast Corridor is also almost certainly true of other corridors in the country. If we are to have improvements in rail passenger service, for reasons of safety and better service, improvements must be made to rail roadbeds.

Mr. President, this is a minor amendment and I would hope it would be accepted.

Mr. HARTKE. I yield myself such time as necessary.

Mr. President, the amendment offered by the Senator from Rhode Island certainly is not objectionable on my part as manager of the bill.

I believe that within the concept of section 602 there is authority to take this action at the present time. However, in order to eliminate any question of the authority to deal with the upgrading of roadbeds, I think it would be perfectly legitimate and proper to include the amendment of the Senator from Rhode Island.

I might say that I have personally been on some roadbeds quite often. We passed a railroad safety bill in the Senate, and it is pending in the House of Representatives. It is my opinion that if that bill is passed and signed into law, that, in and of itself, it will require the upgrading of the roadbeds of many of the railroads in the United States.

I have talked with railroad management about this, and they assured me that they are working on it as fast as they can.

I have frequently gone out and pulled spikes out with my fingers. I have picked up some of the ties which are like driftwood. I have observed that bolts were missing on connecting rails.

I have witnessed firsthand a situation where you can see your shoes under a rail as you stand on one side of the rail. In other words you could look underneath the rail supposedly fastened to a tie and see your shoes. The gap between the rail and the tie upon which it is supposed to be located can sometimes be quite large.

Incidentally, in regard to the roadbed in Japan, they use concrete ties. I am not saying that we should use the concrete ties or that there is any specific method for a roadbed which should be used. The Senator from Rhode Island should take care not to catch himself in a trap in assuming that it will be in every case mandatory to upgrade roadbeds. Roadbeds as we now know them, at least, might be out of date if there were utilization of a new method of transportation which did not use a roadbed as we commonly conceive of it today. But in any event we can accept the amendment.

Mr. President, I yield back the remainder of my time.

Mr. PELL. I thank the Senators from Indiana, Vermont, and Washington and, Mr. President, I yield back the remainder of my time.

The PRESIDING OFFICER (Mr. CANNON). The question is on agreeing to the amendment of the Senator from Rhode Island.

The amendment was agreed to.

Mr. PEARSON. Mr. President, are we under controlled time?

The PRESIDING OFFICER. Yes.

Mr. PEARSON. May I ask the manager of the bill to yield me 5 minutes, in order to propound certain questions either to the manager of the bill or the distinguished Senator from Vermont (Mr. PROUTY), in order to make legislative history.

Mr. HARTKE. Mr. President, I yield 5 minutes to the Senator from Kansas.

The PRESIDING OFFICER. The Senator from Kansas is recognized for 5 minutes.

Mr. PEARSON. Mr. President, if I may have the attention of the Senator from Vermont, I would ask him, if a railroad enters into a contract with a corporation to be formed under the provisions of S. 3706, is it, then, relieved of its responsibility to furnish passenger service as an intercity passenger carrier?

Mr. PROUTY. Mr. President, in reply to the distinguished Senator from Kansas may I say that section 401(a)(1) provides that such railroad is relieved of its responsibility as a common carrier of passengers by rail, under part 1 of the Interstate Commerce Act, or any other law relating to the provisions of the intercity rail traffic, which provides only for giving notice in accordance with the provisions contained in the act.

Mr. PEARSON. May I ask the Senator further, if such carrier is under such contract with the corporation, is it relieved of its responsibilities to offer passenger service, or must it then go through procedures under section 13(a), or may it merely give notice under that section?

Mr. PROUTY. It would have to go through the usual section 13(a) procedure. All it would have to do is——

Mr. PEARSON. May I ask one further question? If the Senate accepts the amendment under section 201 as offered by the distinguished Senator from Colorado (Mr. ALLOTT), would the Senator's answers to the two prior questions which I put to him be any different in relation to the so-called Allott amendment?

Mr. PROUTY. No. It does not in any way alter the conflict with the procedure for discontinuance of a further contracting railroad as provided in section 401(a)(1). The Senator from Colorado's amendment was intended to deal essentially with railroads not entering into a contract with the corporation. Such railroad corporation which is not included within the basic system goes through the full regular section 13(a) procedure.

Mr. PEARSON. I thank the distinguished Senator from Vermont.

Mr. President, I yield back the remainder of my time yielded to me by the distinguished manager of the bill.

The PRESIDING OFFICER. The question is on agreeing to the substitute.

Mr. HARTKE. Mr. President, I yield back the remainder of my time.

Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. HARTKE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

MESSAGE FROM THE HOUSE

A message from the House of Representatives, by Mr. Bartlett, one of its reading clerks, announced that the House had passed, without amendment, the bill (S. 2452) to amend section 211 of the Public Health Service Act to equalize the retirement benefits for commissioned officers of the Public Health Service with retirement benefits provided for other officers in the uniformed services.

The message also announced that the House had passed the bill (S. 1479) to amend chapter 19 of title 38, United States Code, in order to increase from $10,000 to $15,000 the amount of servicemen's group life insurance for members of the uniformed services, with amendments, in which it requested the concurrence of the Senate.

The message further announced that the House had agreed to the report of the committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 10105) to amend the National Traffic and Motor Vehicle Safety Act of 1966 to authorize appropriations for fiscal years 1970, 1971, and 1972, and for other purposes; and that the House receed from its disagreement to the amendment of the Senate numbered 2, to the bill, and concurred therein with an amendment, in which it requested the concurrence of the Senate.

The message also announced that the House had passed a bill (H.R. 13740) for the relief of Kimball Bros. Lumber Co., in which it requested the concurrence of the Senate.

ENROLLED BILLS AND JOINT RESOLUTION SIGNED

The message further announced that the Speaker had affixed his signature to the following enrolled bills and joint resolution; and they were signed by the Acting President pro tempore (Mr. BYRD of Virginia):

S. 3007. An act to authorize the transfer of the Brown unit of the Fort Belknap Indian irrigation project on the Fort Belknap Indian Reservation, Mont., to the landowners within the unit;

S. 3435. An act to provide for the striking of medals in commemoration in completion of the carvings on Stone Mountain, Ga., depicting heroes of the Confederacy.

H.R. 1951. An act to confer U.S. citizenship posthumously upon Sp4 Aaron Tawil;

H.R. 2817. An act for the relief of Delilah Aurora Gamatero;

H.R. 3955. An act for the relief of Placido Viterbo;

H.R. 5936. An act for the relief of Kong Wan Nor;

H.R. 6125. An act for the relief of Anne Reale Pietrandrea;

H.R. 9001. An act for the relief of William Patrick Magee;

H.R. 11578. An act for the relief of Patricia Hiro Williams;

H.R. 12037. An act for the relief of Ali Somay;

H.R. 12673. An act to authorize the transfer by licensed blood banks in the District of Columbia of blood components within the District of Columbia; and

S.J. Res. 193. Joint resolution to provide for the appointment of James Edwin Webb as Citizen Regent of the Board of Regents of Smithsonian Institution.

HOUSE BILL REFERRED

The bill (H.R. 13740) for the relief of Kimball Brothers Lumber Co., was read twice by its title and referred to the Committee on the Judiciary.

SUBMISSION OF AMENDMENT TO S. 3151—ENVIRONMENTAL QUALITY

AMENDMENT NO. 613

Mr. PELL. Mr. President, I submit an amendment to S. 3151 and ask that it be printed in full in the RECORD at this point.

There being no objection, the text of the amendment was ordered to be printed in the RECORD, as follows:

AMENDMENT NO. 613

On page 2, strike out all that appears on line 19 and all that follows down through line 23 on page 7 and insert in lieu thereof the following:

PROJECTS IN ENVIRONMENTAL EDUCATION

SEC. 3. (a) Sections 803, 805, 807, 808, and 809 of title VIII of the Elementary and Secondary Education Act of 1965, and all references thereto, are redesignated as sections 802, 803, 804, 805, and 806, respectively. Such title VIII is further amended by inserting after section 806 (as so redesignated) the following new section:

"ENVIRONMENTAL EDUCATION

"SEC. 807. (a) There is established, within the Office of Education an Office of Environmental Education (referred to in this section as the 'Office') which, under the supervision of the Commissioner, shall be responsible for the administration of the program authorized by subsection (b). The Office shall be headed by a Director who shall be compensated at the rate prescribed for grade GS–17 in section 5332 of title 5, United States Code.

"(b) (1) The Commissioner shall carry out a program of making grants to, and contracts with, institutions of higher education, State and local education agencies, and other public and private nonprofit educational and research agencies and organizations to support research, demonstration, and pilot projects designed to educate the public on the problems of environmental quality and ecological balance.

"(2) Funds appropriated pursuant to subsection (d) shall be available for such activities as—

"(A) the development of curricula in the preservation and enhancement of environmental quality and ecological balance;

"(B) projects designed to demonstrate and test the effectiveness of such curricula;

"(C) dissemination of information relating to such curricula and to environmental education, generally;

"(D) preservice and inservice training programs on environmental quality and ecology for teachers and other education personnel, public service personnel and government employees, and business and industrial leaders and employees; and

"(E) community education programs.

In addition to the activities specified in the first sentence of this paragraph, such funds may be used for evaluation of the effectiveness of any such activities.

"(3) Financial assistance under this subsection may be made available only upon application to the Commissioner. Applications under this subsection shall be submitted at such time, in such form, and containing such information as the Commissioner shall prescribe by regulation and shall be approved if it—

"(A) provides that the activities for which assistance is sought will be administered by, or under the supervision of, the applicant;

"(B) describes a program for carrying out one or more of the purposes set forth in the first sentence of paragraph (2) which holds promise of making a substantial contribution toward attaining the purposes of this section; and

"(C) sets forth such policies and procedures as will insure adequate evaluation of the activities intended to be carried out under the application.

"(c) (1) There is hereby established an Advisory Council on Environmental Quality Education consisting of twenty-one members appointed by the secretary who shall be persons who are familiar with education, information media, and the problems of environment and ecological balance.

"(2) The Advisory Council shall—

"(A) advise the Commissioner and the Office concerning the administration of, preparation of general regulations for, and operation of programs assisted under this section;

"(B) make recommendations to the Office with respect to the allocation of funds appropriated pursuant to subsection (d) among the purposes set forth in paragraph (2) of subsection (b) and the criteria to be used in approving applications, which criteria shall insure an appropriate geographical distribution of approved programs and projects through the nation;

"(C) review applications and make recommendations respecting their dispositions; and

"(D) evaluate programs and projects assisted under this section and disseminate the results thereof.

"(d) For the purpose of carrying out the provisions of this section, there is hereby authorized to be appropriated $2,000,000 for the fiscal year ending June 30, 1971, and $10,000,000 for each of the succeeding fiscal years ending prior to July 1, 1973.

On page 7, redesignate section 6 as section 4.

On page 8, strike out all that appears on line 13 and all that follows down through line 5 on page 5.

Mr. PELL. Mr. President, the subject of environmental quality is one which has taken the attention of our Nation within the past year. Various ecological disasters have crystalized our thinking about the relationship and responsibilities man must have with and for his own environment. This awakened concern I speak of manifests itself in many ways. The recent April 27 teach-in on our environment is the most visable and perhaps most vocal.

The clearly delineated problems of the environment are one which can be spoken of with clarity; however, viable means to treat the symptoms and cure the problem are somewhat harder to come by. This type of need does not seem to be

able to command the attention of the press and TV.

I believe that one of the most promising avenues of approach is through education. S. 3151, introduced by Senator GAYLORD NELSON, would establish a Federal program in the field of environmental education. This bill, if enacted, will provide a most needed tool for dealing with the problem of environment, the education of our young to their world and also the training of professionals to deal with the environment.

The bill as introduced is one which speaks most clearly on the problems, and after study I would like to propose amendments to S. 3151 which would establish a procedure for carrying out this proposal. In essence, we would be authorizing funds to be utilized by a new Office of Environmental Education within the Office of Education of the Department of Health, Education, and Welfare. This new office would be able to cut across the interdisciplinary lines presently within our educational system, and would be able to conduct a series of demonstration programs, for a term of 3 years, which would be aimed at finding the best method to achieve the objectives of the bill.

The Subcommittee on Education of the Senate Committee on Labor and Public Welfare will hold hearings on May 19 and 20 on S. 3151 and any proposed amendments.

The PRESIDING OFFICER (Mr. CANNON). The amendment will be received and printed, and will be appropriately referred.

The amendment (No. 613) was referred to the Committee on Labor and Public Welfare.

RAIL PASSENGER SERVICE ACT OF 1970

The Senate continued with the consideration of the bill (S. 3706) to provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13(a) of the Interstate Commerce Act, and for other purposes.

Mr. HARTKE. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER (Mr. CANNON). Does the Senator from Indiana desire a call of the quorum on his own time?

Mr. HARTKE. That is all right, Mr. President. Charge it to me. How much time is left?

The PRESIDING OFFICER. The Senator has 12 minutes remaining on his amendment.

Mr. HARTKE. Mr. President, I suggest the absence of a quorum and ask that the time not be charged to either side.

The PRESIDING OFFICER. Is there objection to the request of the Senator from Indiana? The Chair hears none, and the clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. METCALF. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

AMENDMENT NO. 611

Mr. METCALF. Mr. President, I call up my amendment and ask that it be stated.

The PRESIDING OFFICER. The amendment will be stated.

The bill clerk read as follows:

On page 24, line 20, strike out "seven" and insert in lieu thereof "fifteen".

On page 24, lines 21 through 23, strike the sentence beginning "The panel shall include" through to the end and insert in lieu thereof the following sentence:

"Six members of the panel shall represent the business of investment banking, commercial banking, and rail transportation. Two members shall be representatives of the Secretary of the Treasury and seven members shall represent the public in the various regions of the Nation."

Mr. METCALF. Mr. President, this is a very simple amendment and is very easy to explain.

Mr. COTTON. Mr. President, would the Senator please speak a little louder?

Mr. METCALF. Surely.

By this bill, we establish an advisory council for the financial report of the Corporation of seven members to be established. These seven members, in accordance with the bill, would represent the businesses of investment banking, commercial banking, and rail transportation. There would also be representatives of the Secretary of the Treasury. I believe that is appropriate.

My amendment would add additional public interest members to be appointed by the President. The public interest members would serve with the other members already provided for in the bill and would increase the size of the advisory council from seven to 15.

That means that we would have some leeway to appoint farmers, oilmen, businessmen, consumers, and representatives of other groups to sit with these experts.

There would be eight experts on the advisory council. They would be able to outvote the public interest members. But on the other hand, the general public, the passenger public, the investor public would be represented on this advisory council.

All I am trying to do—and I regret that we have to increase the size of the advisory council, but a committee of 15 is not an unwieldly committee—is to provide that we will have regional and national public interest representation on the adivsory council.

Mr. HARTKE. Mr. President, I yield myself such time as I may require.

The PRESIDING OFFICER. The Senator from Indiana is recognized.

Mr. HARTKE. Mr. President, I think the amendment of the Senator from Montana is meritorious. I think it does deserve the consideration of the Senate. The Senator suggests the utilization of people not specifically tied to any one type of industry, people who are not just financialy oriented.

I believe that this suggestion should be considered in the appointment of the Financial Advisory Panel.

Since it would be provided that this panel would be established within 30 days after the enactment of the law, I commend the Senator for making such a worthwhile recommendation.

Mr. President, in my capacity as manager of the bill, I am prepared to accept the amendment.

Mr. METCALF. Mr. President, I thank the Senator.

Mr. HARTKE. Mr. President, I yield back the remainder of my time.

Mr. METCALF. Mr. President, I yield back the remainder of my time.

The PRESIDING OFFICER. The question is on agreeing to the amendment of the Senator from Montana.

The amendment was agreed to.

The PRESIDING OFFICER. The bill is open to further amendment.

Mr. HARTKE. Mr. President, I understand that the Senator from Michigan (Mr. HART) is on his way to the Chamber. He has an amendment to offer.

The PRESIDING OFFICER. Who yields time?

Mr. HARTKE. Mr. President, I suggest the absence of a quorum and ask unanimous consent that the time not be charged to either side.

The PRESIDING OFFICER. Without objection, it is so ordered. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. HART. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. HARTKE. Mr. President, I ask unanimous consent that a letter from the Interstate Commerce Commission on this legislation be printed in the RECORD at this point.

There being no objection, the letter was ordered to be printed in the RECORD, as follows:

INTERSTATE COMMERCE COMMISSION,
Washington, D.C., May 4, 1970.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: Thank you very much for your letter of April 30, 1970, requesting an expression of the views of the Interstate Commerce Commission on a draft bill designed to establish a National Rail Passenger Corporation, as set forth in Committee Print No. 7, dated April 27, 1970. The Commission has considered the measure, and I am authorized to state that we favor the objectives of the bill.

The measure would provide for the designation of a basic national rail passenger system and the establishment of a quasi-public corporation to assume the operation of the trains within the system, no longer sought to be operated by the railroads. The railroads contracting with the corporation would be relieved of their responsibilities for rendering intercity rail passenger service, although they would be obliged to supply the crews and furnish the tracks and other facilities necessary for the corporation's operation of the trains, upon such terms and conditions as are agreed upon.

An earlier proposal to establish a quasi-public corporation to assume the operation of the railroads' passenger trains was the subject of a letter which I on February 3, 1970, sent to Mr. Wilfred Rommel of the Bureau of the Budget, a copy of which appears beginning at page 36 of S. Rep. 91–765,

the Committee Report on S. 3706, a bill providing for direct financial assistance to railroads operating passenger trains. The present proposal is sufficiently dissimilar however that the reservations and misgivings that I then expressed are for the most part no longer pertinent.

That is not to say that the solution that the draft legislation offers to the railroad passenger service problem necessarily is the ideal one or that the form of the bill cannot stand revision and improvement. The proposal, however, does afford a means for preserving to the Nation at least a modicum of intercity rail passenger capacity and is a reasonable alternative to the loss of railroad passenger service altogether, as we fear may be the case if public assistance is not promptly infused. The establishment of a unified, national system of railroad passenger service that the bill contemplates offers a reasonable alternative, and its adoption should not long be delayed.

The Commission long has been concerned that the country's railroad passenger service is deteriorating and disappearing, but under the statutes which have been ours to administer there has been little we have been able to do to arrest these trends.

Attached is a sheet listing changes which we believe will improve the legislation. Other amendments may occur to us as we and our staff have further opportunity to study the proposed bill, and we reserve the right to bring these to the attention of the House Committee on Interstate and Foreign Commerce, if and when it takes up the proposal.

We appreciate greatly the opportunity afforded us to comment on the subject bill.

Sincerely yours,

GEORGE M. STAFFORD,
Chairman.

SUGGESTED AMENDMENTS

1. Section 403 of the bill should be amended to strike the reference to health regulations to be prescribed by the Commission. Jurisdiction in this area already is lodged in the Surgeon General and should continue to reside there.

2. Sections 404, New service and 405, Discontinuance of service, should be amended to vest jurisdiction for resolving disputes between the corporation and public authorities in the Commission rather than in the Secretary.

3. Section 406, Protective arrangements for employees, should be amended to provide that the railroad employees affected and the fair and equitable arrangements for them shall be as provided by section 5(2)(f) of the Interstate Commerce Act.

4. Section 601, Federal grants, should be amended to assure adequate funding to sustain the operating losses that may be incurred until such time as the corporation's operation of passenger trains becomes self-sufficient.

Mr. HART. Mr. President, I apologize to the able Senator from Indiana and other Senators. I did not realize we were on controlled time. I send to the desk an amendment.

The PRESIDING OFFICER. The amendment will be stated.

The bill clerk proceeded to read the amendment.

Mr. HART. Mr. President, I ask unanimous consent that further reading of the amendment be dispensed with, and that the amendment be printed in the RECORD.

The PRESIDING OFFICER. Without objection, it is so ordered, and, without objection, the amendment will be printed in the RECORD.

The amendment, ordered to be printed in the RECORD, is as follows:

On page 20, lines 10 and 11, strike out "law notwithstanding" and insert in lieu thereof "Act, the laws or constitution of any State, or the decision or order of, or the pendency of any proceeding before, a Federal or State court, agency, or authority to the contrary notwithstanding".

On page 28, beginning with line 10, strike out all through line 15 and insert in lieu thereof: "Upon enactment of this Act, no railroad may discontinue any passenger service whatsoever other than in accordance with the provisions of this Act, notwithstanding the provisions of any other Act, the laws or constitution of any State, or the decision or order of, or the pendency of any proceeding before, any Federal or State court, agency, or authority."

Mr. HART. Mr. President, it is our intention that no passenger train can be discontinued other than through the provisions of this bill once the bill is enacted. The bill now provides that no railroad may discontinue trains prior to January 1, 1975, unless it enters into a contract with the Corporation. However, the possibility exists that a railroad or railroads will assert that present discontinuance procedures will still apply up till March 1, 1971, which is the last day on which a railroad can enter into such a contract. Moreover, there may be some question as to the effect of enactment of this bill on pending discontinuance proceedings before the ICC, the State commissions, and the courts. My amendment would set this matter to rest.

I fully recognize that this amendment will not by its terms reach those discontinuances which may be effected prior to enactment of the bill. A separate moratorium for this purpose such as I have already introduced would probably not help, as it appears that the Congress will complete action on this bill at least as quickly as it would on a separate moratorium. Nevertheless, I am certain that I am reflecting the earnest concern of many of my distinguished colleagues when I urge the Interstate Commerce Commission and the State regulatory agencies to give appropriate weight to this pending legislation in their deliberations in train discontinuance cases between now and the time of enactment of this bill.

Mr. President, I have discussed this matter with the able manager of the bill. He is familiar with it, and I hope it makes sense to him.

Mr. HARTKE. Mr. President, I yield myself such time as may be necessary.

The PRESIDING OFFICER. The Senator from Indiana is recognized.

Mr. HARTKE. Mr. President, we have discussed this matter, and we are prepared to accept the amendment. It is the opinion of the committee that the provisions of section 802 at the present time do provide for practically the identical purposes which the Senator from Michigan is discussing. But if there is any question, this spells it out more definitely and we are prepared to accept the amendment.

I yield back the remainder of my time.

Mr. HART. Mr. President, I yield back the remainder of my time.

The PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment was agreed to.

The PRESIDING OFFICER. The bill is open to further amendment.

Mr. HART. Mr. President, I have a second amendment to offer.

The PRESIDING OFFICER. The amendment will be stated.

The bill clerk proceeded to read the amendment.

Mr. HART. Mr. President, I ask unanimous consent that further reading of the amendment be dispensed with, and that the amendment be printed in the RECORD.

The PRESIDING OFFICER. Without objection, it is so ordered and, without objection, the amendment will be printed in the RECORD.

The amendment, ordered to be printed in the RECORD, is as follows:

On page 7, line 9, insert the following, after the word President, strike the period and insert the following: "and at all times at least one such member shall be a consumer representative."

Mr. HART. Mr. President, the amendment that I now call up is a very simple and I hope noncontroversial one. It would merely provide that one of the directors of the corporation created under this legislation shall be a consumer representative. The amendment is so phrased that the consumer representative would be one of those appointed by the President and that there shall be at all times such a representative.

With the increased recognition of the necessity for consumer representation, I believe this amendment makes great good sense. The voice of the consumer should be heard in the deliberations and decisions of this corporation, and I urge acceptance of the amendment.

Mr. PROUTY. Mr. President, will the Senator yield?

Mr. HART. I yield.

Mr. PROUTY. I understand the amendment would provide that one of the directors of the agency appointed by the President would be a representative of the consumers. Is that correct?

Mr. HART. The Senator's understanding is correct. That is the purpose of the amendment.

Mr. PROUTY. Mr. President, I have no objection.

Mr. HARTKE. Mr. President, the amendment is certainly meritorious. It reminds us once again of the Senator's continued interest in the consumers of this Nation. The Senator's service in this area is recognized throughout the Nation. I commend the Senator and I readily accept the amendment.

Mr. HART. I thank the Senator.

Mr. HARTKE. I yield back the remainder of my time.

Mr. HART. I yield back the remainder of my time.

The PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment was agreed to.

Mr. DOLE. Mr. President, even those who do not regularly utilize railway passenger service recognize the compelling need to improve that service significantly. The reasons are manifold and much discussed. The problem affects the entire American public.

Many Senators have devoted considerable time and study to designing the

best possible role the Federal Government can assume in this area. The Senator from Vermont (Mr. PROUTY) has been foremost in these efforts, and I believe his substitute amendment to S. 3706 provides the surest, most effective response to the decline in rail passenger service.

I share the Senator's reservations to the provisions of S. 3706 which would furnish nearly one-half billion dollars in direct operating subsidies to the railroads over a 4-year period. Such a massive expenditure, with no assurances that any net change for the good in the situation would be encountered 4 years hence, seems a tenuous investment at best.

The substitute amendment's approach, calling for creation of a quasi-public corporation similar to COMSAT, and limitation of Federal expenditures to something near $175 million, offers hope for substantial improvements in service as well as responsible Federal expenditure to achieve these goals.

I commend the Senator from Vermont for his dedication to the cause of improving America's rail service and for his efforts in devising a viable and preferable alternative to the committee version of S. 3706.

The PRESIDING OFFICER. The question is on agreeing to the substitute amendment, as amended.

The substitute amendment, as amended, was agreed to.

The PRESIDING OFFICER. The question is on the engrossment and third reading of the bill.

The bill was ordered to be engrossed for a third reading and was read the third time.

Mr. HARTKE. Mr. President, I yield back the remainder of my time.

The PRESIDING OFFICER. All time has been yielded back. The bill having been read the third time the question is, Shall it pass? On this question, the yeas and nays have been ordered, and the clerk will call the roll.

The bill clerk called the roll.

Mr. KENNEDY. I announce that the Senator from Connecticut (Mr. DODD), the Senator from Arkansas (Mr. FULBRIGHT), the Senator from Iowa (Mr. HUGHES), the Senator from Hawaii (Mr. INOUYE), the Senator from Louisiana (Mr. LONG), the Senator from Minnesota (Mr. MCCARTHY), the Senator from New Hampshire (Mr. MCINTYRE), the Senator from Rhode Island (Mr. PASTORE), the Senator from Georgia (Mr. RUSSELL), the Senator from Alabama (Mr. SPARKMAN), the Senator from Maryland (Mr. TYDINGS), and the Senator from Texas (Mr. YARBOROUGH), are necessarily absent.

I further announce that, if present and voting, the Senator from Connecticut (Mr. DODD), the Senator from Iowa (Mr. HUGHES), the Senator from Rhode Island (Mr. PASTORE), and the Senator from New Hampshire (Mr. MCINTYRE), would each vote "yea."

Mr. GRIFFIN. I announce that the Senator from Oklahoma (Mr. BELLMON), and the Senator from Hawaii (Mr. FONG), are absent on official business.

The Senator from Utah (Mr. BENNETT) and the Senator from Maryland (Mr. MATHIAS) are necessarily absent.

The Senator from Alaska (Mr. STEVENS) is absent to attend the funeral of a friend.

The Senator from South Dakota (Mr. MUNDT) is absent because of illness.

The Senator from New York (Mr. GOODELL) is detained on official business.

If present and voting, the Senator from Utah (Mr. BENNETT), the Senator from Hawaii (Mr. FONG), the Senator from New York (Mr. GOODELL), and the Senator from South Dakota (Mr. MUNDT) would each vote "yea."

The result was announced—yeas 78, nays 3, as follows:

[No. 140 Leg.]

YEAS—78

Aiken	Gore	Murphy
Allott	Gravel	Muskie
Anderson	Griffin	Nelson
Baker	Gurney	Packwood
Bayh	Hansen	Pearson
Bible	Harris	Pell
Boggs	Hart	Percy
Brooke	Hartke	Prouty
Burdick	Hatfield	Proxmire
Byrd, Va.	Holland	Randolph
Byrd, W. Va.	Hollings	Ribicoff
Cannon	Hruska	Saxbe
Case	Jackson	Schweiker
Church	Javits	Scott
Cook	Jordan, N.C.	Smith, Maine
Cooper	Jordan, Idaho	Smith, Ill.
Cotton	Kennedy	Spong
Cranston	Magnuson	Stennis
Curtis	Mansfield	Symington
Dole	McGee	Talmadge
Dominick	McGovern	Thurmond
Eagleton	Metcalf	Tower
Eastland	Miller	Williams, N.J.
Ervin	Mondale	Williams, Del.
Fannin	Montoya	Young, N. Dak.
Goldwater	Moss	Young, Ohio

NAYS—3

Allen	Ellender	McClellan

NOT VOTING—19

Bellmon	Inouye	Russell
Bennett	Long	Sparkman
Dodd	Mathias	Stevens
Fong	McCarthy	Tydings
Fulbright	McIntyre	Yarborough
Goodell	Mundt	
Hughes	Pastore	

So the bill (S. 3706) was passed, as follows:

S. 3706

An act to provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13(a) of the Interstate Commerce Act, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Rail Passenger Service Act of 1970".

TITLE I—FINDINGS, PURPOSES, AND DEFINITIONS

§ 101. Congressional findings and declaration of purpose

The Congress finds that modern, efficient, intercity railroad passenger service is a necessary part of a balanced transportation system; that the public convenience and necessity require the continuance and improvement of such service to provide fast and comfortable transportation between crowded urban areas and in other areas of the country, that rail passenger service can help to end the congestion on our highways and the overcrowding of airways and airports; that the traveler in America should to the maximum extent feasible have freedom to choose the mode of travel most convenient to his needs; that to achieve these goals requires the designation of a basic national rail passenger system and the establishment of a rail passenger corporation for the purpose of providing modern, efficient, intercity rail passenger service; that Federal financial assistance as well as investment capital from the private sector of the economy is needed for this purpose; and that interim emergency Federal financial assistance to certain railroads may be necessary to permit the orderly transfer of railroad passenger service to a railroad passenger corporation.

§ 102. Definitions

For purposes of this Act—

(a) "Railroad" means a common carrier by railroad, as defined in section 1(3) of part I of the Interstate Commerce Act, as amended (49 U.S.C. 1(3)) other than the corporation created by title III of this Act.

(b) "Secretary" means the Secretary of Transportation or his delegate unless the context in which it appears indicates otherwise.

(c) "Commission" means the Interstate Commerce Commission.

(d) "Basic system" means the system of intercity rail passenger service designated by the Secretary under title II of this Act.

(e) "Intercity rail passenger service" means all rail passenger service other than commuter and other short-haul service in metropolitan and suburban areas, usually characterized by reduced fare, multiple-ride and commutation tickets and by morning and evening peak period operations, and auto-ferry service characterized by transportation of automobiles and their occupants where contracts for such service have been consummated prior to enactment of this Act.

(f) "Avoidable loss" means the avoidable costs of providing passenger service, less revenues attributable thereto, using the methodology used in the report of the Commission of July 16, 1969, entitled "Investigation of Costs of Intercity Rail Passenger Service."

(g) "Corporation" means the National Railroad Passenger Corporation created under title III of this Act.

(h) "Regional transportation agency" means an authority corporation, or other entity established for the purpose of providing passenger service with a region.

TITLE II—BASIC NATIONAL RAIL PASSENGER SYSTEM

§ 201. Designation of system

In carrying out the congressional findings and declaration of purpose set forth in title I of this Act, the Secretary, acting in cooperation with other interested Federal agencies and departments, is authorized and directed to submit to the Commission and to the Congress within thirty days after the date of enactment of this Act his preliminary report and recommendations for a basic national rail passenger system (hereinafter referred to as the "basic system"). Such recommendations shall specify those points between which intercity passenger trains shall be operated, identify all routes over which service may be provided, and the trains presently operated over such routes, together with basic service characteristics of operations to be provided within the system, taking into account schedules, number of trains, connections, through car service, and sleeping, parlor, dining, and lounge facilities. In recommending said basic system the Secretary shall take into account the need for expeditious rail passenger service within and between all regions of the continental United States, and the Secretary shall consider the need for such service within the States of Alaska and Hawaii and the Commonwealth of Puerto Rico. In formulating such recommendations the Secretary shall consider opportunities for provision of faster service, more convenient service, service to more centers of population, and/or service at lower

cost, by the joint operation, for passenger service, of facilities of two or more railroad companies; the importance of a given service to overall system viability; adequacy of other transportation facilities serving the same points; unique characteristics and advantages of rail service as compared to other modes; the relationship of public benefits of given services to the costs of providing them; and potential profitability of the service. The exclusion of a particular route, train, or service from the basic system shall not be deemed to be a presumption that the route, train, or service is not required by public convenience and necessity in any proceeding under section 13a of the Interstate Commerce Act (49 U.S.C. 13a).

§ 202. Review of the basic system

The Commission shall, within thirty days after receipt of the Secretary's preliminary report designating a basic system, review such report consistent with the purposes of this Act and provide the Secretary with its comments and recommendations. The Secretary shall give due consideration to such comments and recommendations. The Secretary shall, within ninety days after the date of enactment of this Act submit his final report designating the basic system to the Congress. Such final report shall include a statement of the recommendations of the Commission together with his reasons for failing to adopt any such recommendations. The basic system as designated by the Secretary shall become effective for the purposes of this Act upon the date that the final report of the Secretary is submitted to Congress and shall not be reviewable in any court.

TITLE III—CREATION OF A RAIL PASSENGER CORPORATION

§ 301. Creation of the Corporation

There is authorized to be created a National Railroad Passenger Corporation (hereinafter referred to as the "corporation"). The Corporation shall be a for profit corporation, whose purpose shall be to provide intercity rail passenger service, employing innovative operating and marketing concepts so as to fully develop the potential of modern rail service in meeting the Nation's intercity passenger transportation requirements. The Corporation will not be an agency or establishment of the United States Government. It shall be subject to the provisions of this Act and, to the extent consistent with this Act, to the District of Columbia Business Corporation Act. The right to repeal, alter, or amend this Act at any time is expressly reserved.

§ 302. Process of organization

The President of the United States shall appoint not fewer than three incorporators, by and with the advice and consent of the Senate, who shall also serve as the board of directors for one hundred and eighty days following the date of enactment of this Act. The incorporators shall take whatever actions are necessary to establish the Corporation, including the filing of articles of incorporation, as approved by the President.

§ 303. Directors and officers

(a) The Corporation shall have a board of fifteen directors consisting of individuals who are citizens of the United States, of whom one shall be elected annually by the board to serve as chairman. Eight members of the board shall be appointed by the President of the United States, by and with the advice and consent of the Senate, for terms of four years or until their successors have been appointed and qualified, except that the first three members of the board so appointed shall continue in office for terms of two years, and the next three members for terms of three years. Any member appointed to fill a vacancy may be appointed only for the unexpired term of the director whom he succeeds. At all times the Secretary shall be one of the members of the board of directors appointed by the President and at all times at least one such member shall be a consumer representative. Three members of the board shall be elected annually by common stockholders, and four shall be elected annually by preferred stockholders of the corporation. The members of the board appointed by the President and those elected by stockholders shall take office on the one hundred and eighty-first day after the date of enactment of this Act. Election of the remaining members of the board shall take place as soon as practicable after the first issuance of preferred stock by the Corporation. Pending election of the remaining four members, seven members shall constitute a quorum for the purpose of conducting the business of the board. No director appointed by the President may have any direct or indirect financial or employment relationship with any railroad or railroads during the time that he serves on the board. Each of the directors not employed by the Federal Government shall receive compensation at the rate of $300 for each meeting of the board he attends. In addition, each director shall be reimbursed for necessary travel and subsistence expense incurred in attending the meetings of the board. No director elected by railroads shall vote on any action of the board of directors relating to any contract or operating relationship between the Corporation and a railroad, but he may be present at directors' meetings at which such matters are voted upon, and he may be included for purposes of determining a quorum and may participate in discussions at such meeting.

(b) The board of directors is empowered to adopt and amend bylaws governing the operation of the Corporation providing that such bylaws shall not be inconsistent with the provisions of this Act or of the articles of incorporation.

(c) The articles of incorporation of the Corporation shall provide for cumulative voting for all stockholders and shall provide that, upon conversion of one-fourth of the outstanding shares of preferred stock, the common stockholders shall be entitled to four directors and the preferred stockholders shall be entitled to three; upon the conversion of one-half of the outstanding shares of preferred stock the common stockholders shall be entitled to elect five directors and the preferred stockholders shall be entitled to two; upon the conversion of three-fourths of the outstanding shares of preferred stock the common stockholders shall be entitled to elect six directors and the preferred stockholders shall be entitled to elect one; and upon conversion of all outstanding shares of preferred stock the common stockholders shall be entitled to seven directors. Any changes of directors resulting from such stock conversion shall take effect at the next annnual meeting of the Corporation following such stock conversion.

(d) The Corporation shall have a president and such other officers as may be named and appointed by the board. The rates of compensation of all officers shall be fixed by the board. Officers shall serve at the pleasure of the board. No individual other than a citizen of the United States may be an officer of the Corporation. No officer of the Corporation may have any direct or indirect employment or financial relationship with any railroad or railroads during the time of his employment by the Corporation.

§ 304. Financing of the Corporation

(a) The Corporation is authorized to issue and have outstanding, in such amounts as it shall carry voting rights and be eligible for a common and a preferred, each of which shall carry voting rights and he eligible for dividends. Common stock may be initially issued only to a railroad. Preferred stock may be issued to and held only by any person other than a railroad or any person controlling, as defined in section 1(3)(b) of the Interstate Commerce Act, one or more railroads. The articles of incorporation of the Corporation shall provide for the following respective rights of each issue of stock:

(1) COMMON STOCK.—Common stock shall have a par value of $10 per share and shall be designated fully paid and nonassessable. No dividends shall be paid on the common stock whenever dividends on the preferred stock are in arrears.

(2) PREFERRED STOCK.—Preferred stock shall have a par value of $100 per share and shall be designated fully paid and nonassessable. Dividends shall be fixed at a rate not less than 6 per centum, and shall be cumulative so that, if for any dividend period dividends at the rate fixed in the articles of incorporation shall not have been declared and paid or set aside for payment on the preferred shares, the deficiency shall be declared and paid or set apart for payment prior to the making of any dividend or other distribution on the common shares.

Preferred stock shall be entitled to a liquidation preference over common stock, which shall entitled preferred stockholders to a liquidating payment not less than par value plus all accrued unpaid dividends prior to any payment on liquidation to common stockholders.

Preferred stock shall be convertible into shares of common stock at such time and upon such terms as the articles of incorporation shall provide.

(b) At no time after the initial issue is completed shall the aggregate of the shares of common stock of the Corporation owned by a single railroad or any person controlling, as defined in section 1(3)(b) of the Interstate Commerce Act, one or more railroads, directly or indirectly through subsidiaries or affiliated companies, nominees, or any persons subject to its direction or control, exceed 33⅓ per centum of such shares issued and outstanding.

(c) At no time may any stockholder, or any syndicate or affiliated group of such stockholders, own more than 10 per centum of the shares of preferred stock of the Corporation issued and outstanding.

(d) The articles of incorporation shall provide that no shares of any issue of stock may be redeemed or repurchased for five years, following the date of enactment of the Act.

(e) The Corporation is authorized to issue, in addition to the stock authorized by subsection (a) of this section, non-voting securities, bonds, debentures, and other certificates of indebtedness as it may determine.

(f) The requirement of section 45 (b) of the District of Columbia Business Corporation Act (D.C. Code, sec. 29–920 (b)) as to the percentage of stock which a stockholder must hold in order to have the rights of inspection and copying set forth in that subsection shall not be applicable in the case of holders of the stock of the Corporation, and they may exercise such rights without regard to the percentage of stock they hold.

§ 305. General powers of the Corporation

The Corporation is authorized to own, manage, operate, or contract for the operation of intercity rail passenger trains; to carry mail and express in connection with passenger service; to conduct research and development related to its mission; and to acquire by construction, purchase, or gift, or to contract for the use of, physical facilities, equipment, and devices necessary to rail passenger operations. The Corporation shall rely upon railroads to provide the crews necessary to the operation of its passenger trains. To carry out its functions and purposes, the Corporation shall have the usual powers conferred upon a stock corporation by the District of Columbia Business Corporation Act.

§ 306. Applicability of the Interstate Commerce Act and other laws

(a) The Corporation shall be deemed a common carrier by railroad within the meaning of section 1(3) of the Interstate Commerce Act and shall be subject to all provi-

sions of the Interstate Commerce Act other than those pertaining to—

(1) regulation of rates, fares, and charges;

(2) abandonment or extension of lines of railroads utilized solely for passenger service, and the abandonment or extension of operations over such lines of railroads, whether by trackage rights or otherwise;

(3) regulation of routes and service and, except as otherwise provided in this Act, the discontinuance or change of passenger train service operations.

(b) The Corporation shall be subject to the same laws and regulations with respect to safety and with respect to dealings with its employees as any other common carrier subject to part I of the Interstate Commerce Act.

(c) The Corporation shall not be subject to any State or other law pertaining to the transportation of passengers by railroad as it relates to rates, routes, or service.

(d) Leases and contracts entered into by the Corporation, regardless of the place where the same may be executed shall be governed by the laws of the District of Columbia.

(e) Persons contracting with the Corporation for the joint use or operation of such facilities and equipment as may be necessary for the provision of efficient and expeditious passenger service shall be and are hereby relieved from all prohibitions of existing law, including the antitrust laws of the United States with respect to such contracts, agreements, or leases insofar as may be necessary to enable them to enter thereinto and to perform their obligations thereunder.

§ 307. Sanctions

(a) If the Corporation engages in or adheres to any action, practice, or policy inconsistent with the policies and purposes of this Act, obstructs or interferes with any activities authorized by this Act (except in the exercise of labor practices not otherwise proscribed by law), refuses, fails, or neglects to discharge its duties and responsibilities under this Act, or threatens any such violation, obstruction, interference, refusal, failure, or neglect, the district court of the United States for any district in which the Corporation or other person resides or may be found shall have jurisdiction, except as otherwise prohibited by law, upon petition of the Attorney General of the United States or, in a case involving a labor agreement, upon petition of any individual affected thereby, to grant such equitable relief as may be necessary or appropriate to prevent or terminate any violation, conduct, or threat.

(b) Nothing contained in this section shall be construed as relieving any person of any punishment, liability, or sanction which may be imposed otherwise than under this Act.

§ 308. Reports to the Congress

(a) The Corporation shall transmit to the President and the Congress, annually, commencing one year from the date of enactment of this Act, and at such other times as it deems desirable, a comprehensive and detailed report of its operations, activities, and accomplishments under this Act, including a statement of receipts and expenditures for the previous year. At the time of its annual report, the Corporation shall submit legislative recommendations for amendment of this Act as it deems desirable, including the amount of financial assistance needed for operations and for capital improvements, the manner and form in which the amount of such assistance should be computed, and the sources from which such assistance should be derived.

(b) The Secretary and the Commission shall transmit to the President and the Congress, one year following the date of enactment of this Act and biennially thereafter, reports on the state of rail passenger service and the effectiveness of this Act in meeting the requirement for a balanced national transportation system, together with any legislative recommendations for amendments to this Act.

TITLE IV—PROVISION OF RAIL PASSENGER SERVICES

§ 401. Assumption of passenger service by the Corporation; commencement of operations

(a)(1) On or before March 1, 1971, and on or after March 1, 1973, but before January 1, 1975, the Corporation is authorized to contract with a railroad to relieve the railroad of its entire responsibility for the provision of intercity rail passenger service commencing on or after March 1, 1971. The contract may be made upon such terms and conditions as necessary to permit the Corporation to undertake passenger service on a timely basis. Upon its entering into a valid contract (including protective arrangements for employees), the railroad shall be relieved of all its responsibilities as a common carrier of passengers by rail in intercity rail passenger service under part I of the Interstate Commerce Act or any other law relating to the provision of intercity passenger service: *Provided*, That any railroad discontinuing a train hereunder must give notice in accordance with the notice procedures contained in section 13a(1) of the Interstate Commerce Act.

(2) In consideration of being relieved of this responsibility by the corporation, the railroad shall agree to pay to the corporation each year for three years an amount equal to one-third of 50 per centum of the fully distributed passenger service deficit of the railroad as reported to the Commission for the year ending December 31, 1969. The payment to the Corporation may be made in cash or, at the option of the Corporation, by the transfer of rail passenger equipment or the provision of future service as requested by the Corporation. The railroad shall receive common stock from the Corporation in an amount equivalent in par value to its payment.

(3) In agreeing to pay the amount specified in paragraph (2) of this subsection, a railroad may reserve the right to pay a lesser sum to be determined by calculating either of the following:

(A) 100 per centum of the avoidable loss of all intercity rail passenger service operated by the railroad during the period January 1, 1969, through December 31, 1969; or

(B) 200 per centum of the avoidable loss of the intercity rail passenger service operated by the railroad between points within the basic system during the period January 1, 1969, through December 31, 1969.

If the amount owed the Corporation under either of these alternatives is agreed by the parties to be less than the amount paid pursuant to paragraph (2), the Corporation shall pay the difference to the railroad. If the railroad and the Corporation are unable to agree as to the amount owed, the matter shall be referred to the Interstate Commerce Commission for decision. The Commission shall decide the issue within ninety days following the date of referral and its decision shall be binding on both parties.

(4) The payments to the Corporation shall be made in accordance with a schedule to be agreed upon between the parties. Unless the parties otherwise agree, the payments for each of the first twelve months following the date on which the Corporation assumes any of the operational responsibilities of the railroad shall be in cash and not less than one thirty-sixth of the amount owed.

(b) On March 1, 1971, the Corporation shall begin the provision of intercity rail passenger service between points within the basic system unless such service is being provided (i) either by a railroad with which it has not entered into a contract under subsection (a) of this section or (ii) by a regional transportation agency, provided such agency gives satisfactory assurance to the Corporation of the agency's financial and operating capability to provide such service, and of its willingness to cooperate with the Corporation and with other regional transportation agencies on matters of through train service, through car service, and connecting train service. The Corporation may at any time subsequent to March 1, 1971, contract with a regional transportation agency to provide intercity rail passenger service between points within the basic system included within the service of such agency.

(c) No railroad or any other person may, without the consent of the Corporation, conduct intercity rail passenger service over any route on which the Corporation is performing scheduled intercity rail passenger service pursuant to a contract under this section.

§ 402. Facility and service agreements

(a) The Corporation may contract with railroads or with regional transportation agencies for the use of tracks and other facilities and the provision of services on such terms and conditions as the parties may agree. In the event of a failure to agree, the Interstate Commerce Commission shall, if it finds that doing so is necessary to carry out the purposes of this Act, order the provision of services or the use of tracks or facilities of the railroad by the Corporation, on such terms and for such compensation as the Commission may fix as just and reasonable. If the amount of compensation fixed is not duly and promptly paid, the railroad or agency entitled thereto may bring an action against the Corporation to recover the amount properly owed.

(b) To facilitate the initiation of operations by the corporation within the basic system the Commission shall, upon application by the Corporation, require a railroad to make immediately available tracks and other facilities. The Commission shall thereafter promptly proceed to fix such terms and conditions as are just and reasonable.

§ 403. New service

(a) The Corporation may provide service in excess of that prescribed for the basic system, either within or outside, the basic system including the operation of special and extra passenger trains, if consistent with prudent management.

(b) Any State, regional, or local agency may request of the Corporation rail passenger service beyond that included within the basic system. The Corporation shall institute such service if the State, regional, or local agency agrees to reimburse the Corporation for a reasonable portion of any losses associated with such services.

(c) For purposes of this section the reasonable portion of such losses to be assumed by the State, regional, or local agency, shall be no less than 50 per centum of, nor more than the solely related costs and associated capital costs less revenues attributable to such service. If the Corporation and the State, regional, or local agency are unable to agree upon a reasonable apportionment of such losses, the matter shall be referred to the Secretary for decision. In deciding this issue the Secretary shall take into account the intent of this Act, and the impact of requiring the Corporation to bear such losses upon its ability to provide improved service within the basic system.

§ 404. Discontinuance of service

(a) Unless it has entered into a contract with the Corporation pursuant to section 401 (a)(1) of this Act, no railroad may discontinue any passenger service whatso ever prior

to January 1, 1975, the provisions of any other Act, the laws or constitution of any State or the decision or order of, or the pendency of any proceeding before, a Federal or State court, agency, or authority to the contrary notwithstanding. On and after January 1, 1975, passenger train service operated by such railroad may be discontinued under the provisions of section 13a of the Interstate Commerce Act. Upon filing of a notice of discontinuance by such railroad, the Corporation may undertake to initiate passenger train operations between the points served.

(b) (1) The Corporation must provide the service included within the basic system until January 1, 1975, to the extent it has assumed responsibility for such service by contract with a railroad pursuant to section 401 of this Act.

(2) Service beyond that prescribed for the basic system undertaken by the Corporation upon its own initiative may be discontinued at any time.

(3) If at any time after January 1, 1975, the Corporation determines that any train or trains in the basic system in whole or in part are not required by public convenience and necessity, or will impair the ability of the Corporation to adequately provide other services, such train or trains may be discontinued under the procedures of section 13a of the Interstate Commerce Act (49 U.S.C. 13a): *Provided, however,* That at least thirty days prior to the change or discontinuance, in whole or in part, of any service under this subsection, the Corporation shall mail to the Governor of each State in which the train in question is operated, and post in every station, depot, or other facility served thereby notice of the proposed change or discontinuance. The Corporation may not change or discontinue this service if prior to the end of the thirty-day notice period, State, regional, or local agencies request continuation of the service and within ninety days agree to reimburse the Corporation for a reasonable portion of any losses associated with the continuation of service beyond the notice period.

(4) For purposes of paragraph (3) of this subsection the reasonable portion of such losses to be assumed by the State, regional, or local agency shall be no less than 50 per centum of, nor more than, the solely related costs and associated capital costs less revenues attributable to such service. If the Corporation and the State, regional, or local agencies are unable to agree upon a reasonable apportionment of such losses, the matter shall be referred to the Secretary for decision. In deciding this issue the Secretary shall take into account the intent of this Act and the impact of requiring the Corporation to bear such losses upon its ability to provide improved service within the basic system.

§ 405. Protective arrangements for employees

(a) A railroad shall provide fair and equitable arrangements to protect the interests of employees adversely affected by the following discontinuances of passenger service:

(1) those arising out of a contract with the corporation pursuant to section 401(a) (1) of this Act, and occurring prior to January 1, 1975; and

(2) those undertaken pursuant to section 404(a) of this Act.

(b) Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) to such employees under existing collective-bargaining agreements or otherwise; (2) the continuation of collective-bargaining rights; (3) the protection of such individual employees against a worsening of their positions with respect to their employment; (4) assurances of priority of reemployment of employees terminated or laid off; and (4) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their positions with respect to their employment which shall in no event provide benefits less than those established pursuant to section 5(2)(f) of the Interstate Commerce Act. Any contract entered into pursuant to the provisions of this title shall specify the terms and conditions of such protective arrangements.

Final settlement of any contract under section 401(a)(1) of this Act between a railroad and the Corporation may not be made unless the Secretary of Labor has certified to the Corporation that adversely affected employees have received fair and equitable protection from the railroad.

(c) After commencement of operations in the basic system, the substantive requirements of subsection (b) of this section shall apply to the Corporation, and the certification by the Secretary of Labor shall be a condition to the discontinuance of any trains by the Corporation pursuant to section 404(b) of this Act.

(d) The Corporation shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors and subcontractors in the performance of construction work financed with the assistance of funds received under any contract or agreement entered into under this title shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended. The Corporation shall not enter into any such contract or agreement without first obtaining adequate assurance that required labor standards will be maintained on the construction work. Health and safety standards promulgated by the Secretary of Labor pursuant to Public Law 91-54 (40 U.S.C. 333) shall be applicable to all construction work performed under such contracts or agreements.

(e) The Corporation shall not contract out any work normally performed by employees in any bargaining unit covered by a contract between the Corporation or any railroad providing intercity rail passenger service upon the date of enactment of this Act and any labor organization, if such contracting out shall result in the layoff of any employee or employees in such bargaining unit.

TITLE V—ESTABLISHMENT OF A FINANCIAL INVESTMENT ADVISORY PANEL

§ 501. Appointment of advisory panel

Within thirty days after enactment of this Act, the President shall appoint a fifteen-man financial advisory panel. Six members of the panel shall represent the business of investment banking, commercial banking, and rail transportation. Two members shall be representatives of the Secretary of the Treasury and seven members shall represent the public in the various regions of the Nation.

§ 502. Purpose of advisory panel

The advisory panel appointed by the President shall advise the directors of the Corporation on ways and means of increasing capitalization of the Corporation.

§ 503. Report to Congress

On or before January 1, 1971, the panel shall submit a report to Congress evaluating the initial capitalization of the Corporation and the prospects for increasing its capitalization.

TITLE VI—FEDERAL FINANCIAL ASSISTANCE

§ 601. Federal grants

There is authorized to be appropriated to the Secretary in fiscal year 1971, $40,000,000 to remain available until expended, for payment to the Corporation for the purpose of assisting in—

(1) the initial organization and operation of the Corporation;

(2) the establishment of improved reservations systems and advertising;

(3) servicing, maintenance, and repair of railroad passenger equipment;

(4) the conduct of research and development and demonstration programs respecting new rail passenger services;

(5) the development and demonstration of improved rolling stock; and

(6) essential fixed facilities for the operation of passenger trains on lines and routes included in the basic system over which no through passenger trains are being operated at the time of enactment of this Act, including necessary track connections between lines of the same or different railroads.

§ 602. Guaranty of loans

The Secretary is authorized, on such terms and conditions as he may prescribe, to guarantee any lender against loss of principal or interest on securities, obligations, or loans issued to finance the upgrading of roadbeds and the purchase by the Corporation or agency of new rolling stock, rehabilitation of existing rolling stock and for other corporate purposes. The maturity date of such securities, obligations, or loans, including all extensions and renewals thereof, shall not be later than twenty years from their date of issuance, and the amount of guaranteed loans outstanding at any time may not exceed $60,000,000. The Secretary shall prescribe and collect from the lending institution a reasonable annual guaranty fee. There are authorized to be appropriated such amounts as necessary to carry out this section not to exceed $60,000,000.

TITLE VII—INTERIM EMERGENCY FEDERAL FINANCIAL ASSISTANCE

§ 701. Interim authority to provide emergency financial assistance for railroads operating passenger service

For the purpose of permitting a railroad to enter into or carry out a contract under section 401(a)(1) of this Act, the Secretary is authorized, on such terms and conditions as he may prescribe, to (1) make loans to such railroads, or (2) to guarantee any lender against loss of principal or interest on any loan to such railroads. Interest on loans made under this section shall be at a rate not less than a rate determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States with remaining periods of maturity comparable to the average maturities of such loans adjusted to the nearest one-eighth of 1 per centum. No loan may be made, including renewals of extensions thereof, which has a maturity date in excess of five years. The maturity date on any loan guaranteed, including all renewals and extensions thereof, shall not be later than five years from the date of issuance. The total amount of loans and loan guaranties made under this section may not exceed $75,000,000.

§ 702. Authorization for appropriations

There are hereby authorized to be appropriated such amounts not to exceed $75,000,000 as may be necessary to carry out the purposes of this title. Any sums appropriated shall be available until expended.

TITLE VIII—MISCELLANEOUS PROVISIONS

§ 801. Adequacy of service

The Commission is authorized to prescribe such regulations as it considers necessary for the comfort and health of intercity rail passengers. Any person who violates a regulation issued under this section shall be subject to a civil penalty of not to exceed $500 for each violation. Each day a violation continues shall constitute a separate offense.

§ 802. Effect on pending proceedings

Upon enactment of this Act, no railroad

may discontinue any passenger service whatsoever other than in accordance with the provisions of this Act, notwithstanding the provisions of any other Act, the laws or constitution of any State, or the decision or order of, or the pendency of any proceeding before, any Federal or State court, agency, or authority.

§ 803. Separability

If any provisions of this Act or the application thereof to any person or circumstance is held invalid, the remainder of the Act and the application of such provision to other persons or circumstances shall not be affected thereby.

§ 804. Accountability

Section 201 of the Government Corporation Control Act of 1945 (31 U.S.C. 856; 59 Stat. 600) is amended by striking "and (4)" and inserting in lieu thereof "(4) Federal Deposit Insurance Corporation and (5)" and adding "National Railroad Passenger Corporation" at the end thereof.

Mr. MAGNUSON. Mr. President, I move to reconsider the vote by which the bill was passed.

Mr. HARTKE. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Mr. HARTKE. Mr. President, I ask unanimous consent that the Secretary of the Senate be authorized to make necessary technical and clerical changes in the engrossment of the bill just passed, S. 3706.

Mr. President, I want to take this opportunity to commend the many persons who have contributed to the passage of this very significent legislation. To Senator WARREN MAGNUSON, Senator NORRIS COTTON, and Senator WINSTON PROUTY I reiterate my earlier comments. The bipartisan effort associated with this bill has been incredible. I want to also express my personal gratitude to the fine staff members who have spent so many long hours trying to fashion legislation which would be workable and at the same time acceptable to a majority of the Senate. I especially wish to commend Mr. A. Daniel O'Neal, the Surface Transportation Counsel for the committee; Mr. Henri Rush and Mr. J. Paul Malloy, counsels for the minority.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

Mr. MANSFIELD. Mr. President, the Senate dealt with this extremely important measure swiftly and most thoroughly. It concerned nothing less vital than assistance for the national rail passenger system. Its efficient disposition was due in large measure to its expert handling by the distinguished Senator from Indiana (Mr. HARTKE). Joining the able chairman of the Committee on Commerce, the Senator from Washington (Mr. MAGNUSON), Senator HARTKE led the Senate discussion in a most exemplary manner. His leadership was greatly appreciated.

But the chairman as well is to be highly commended. Senator MAGNUSON has again performed an outstanding public service for lending his meaningful and most effective support to this proposal. The ranking minority member of the committee, the able Senator from New Hampshire (Mr. COTTON) deserves our commendation as well for the fine manner in which he added to the overall debate, and for his cooperation and understanding. He and the distinguished Senator from Vermont (Mr. PROUTY) contributed immensely to this remarkable success.

The distinguished Senator from Rhode Island (Mr. PELL) played a vital role. His cooperation, I might say, permitted the ready acceptance of this bill by the Senate. We are indebted to him for his great contribution on this measure.

Others too added to the debate. Notable were the efforts of the distinguished Senator from Kansas (Mr. PEARSON) and those of the distinguished Senator from Massachusetts (Mr. KENNEDY).

The Senate has once again exhibited its willingness to respond effectively to its legislative chores. Today it did so on a highly important measure. I wish to commend each Senator for his participation and cooperation.

Mr. SCOTT. Mr. President, I welcome the Senate's action today in approving legislation to upgrade, continue, and improve vital rail passenger service in this country.

With this legislation, the "Railroad Passenger Service Act of 1970," I believe we have provided the necessary framework that will enable America's railroads to meet the challenge of a new era. As the Nation's highways and airways reach points of critical congestion, that challenge clearly demands that American railroads find new opportunities to regain lost patronage and to attract new riders.

That is the purpose of this bill. As a member of the Senate Commerce Committee and its Transportation Subcommittee, I am pleased especially by the role both have played in making the "Railroad Passenger Service Act of 1970" possible.

Basic to this bill, Mr. President, is its mandate to the Secretary of Transportation to develop a national rail passenger system to halt passenger discontinuances and to bring, for the first time, Federal coordination to the task of identifying cities between which passenger train service is to operate. It is worth noting that this plan would consider, as matters of equal importance, questions affecting the quality of passenger service, including accommodations to be provided, the number of trains to be operated, and scheduling convenience.

Once established, the national rail passenger system would be implemented through a new and innovative corporate structure which would be authorized to own, operate, manage, and contract with existing railroads for the maintenance and improvement of rail passenger service. Research and development in new and modern rail passenger techniques would be specifically authorized and encouraged.

The Federal commitment to this effort, provided by this bill, is substantial. Some $40 million for the improvement of existing railroad passenger service would be immediately available. In addition, the Federal Government would provide $60 million in loan guarantees for the purchase and rehabilitation of rolling stock, and $75 million in loans and guarantees over a 5-year period for Federal assistance to the railroads in the operation of rail passenger service.

In 1965, I cosponsored and worked actively for the enactment of the High Speed Ground Transportation Act, the legislation which already has made possible the New York-to-Washington "Metroliner" and its turbo-powered counterpart now operating between Boston and New York. Pennsylvanians, both through the Budd Co. at Philadelphia and General Electric's extensive facilities in the Commonwealth, are particularly proud of the major role they have played in the success of the "Metroliner" project. Proof is available that the concept of rail passenger service need not disappear in this country. Properly encouraged, especially in highly populated rail corridors, it can succeed.

Mr. President, I view today's passage of the "Rail Passenger Service Act of 1970" as a timely and logical extension of action already begun. I am hopeful that the House of Representatives will now move quickly on this bill so that the promise of a rail passenger transportation system capable of meeting the challenge of new decades can become a reality.

Finally, Mr. President, no comments that I have to make on this legislation would be complete if I did not pay the very highest tribute to the junior Senator from Vermont (Mr. PROUTY).

As ranking member of the Surface Transportation Subcommittee, his efforts in working to effect a compromise acceptable to the administration, to the railroads, and to the unions cannot be overstated.

If there is one man to whom credit should go for the favorable action that this body has taken today, it is to the junior Senator from Vermont (Mr. PROUTY).

This Senate, this Nation, and, above all, the people of Vermont, can take pride in knowing that a man, such as Senator PROUTY, represents them and has their interests at heart.

As a member of the Senate Commerce Committee, I again applaud the efforts of Senator PROUTY.

LEGISLATIVE PROGRAM

Mr. GRIFFIN. I should like to inquire of the distinguished majority leader, if he can advise us, concerning the schedule for the rest of the day and the rest of the week, if possible.

Mr. MANSFIELD. Mr. President, it is anticipated that following the disposal of the authorization for appropriations to the National Aeronautics and Space Administration, the next order of business will be Calendar No. 842, H.R. 15945, an act to authorize appropriations for certain maritime programs of the Department of Commerce; and following that, the coast guard authorization bill, which has been reported by the Committee on Commerce.

ORDER FOR ADJOURNMENT UNTIL 11 A.M. TOMORROW

Mr. MANSFIELD. Mr. President, I ask unanimous consent that, when the Senate completes its business today, it stand in adjournment until 11 o'clock tomorrow morning.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

ORDER FOR RECOGNITION OF SENATOR ALLOTT TOMORROW

Mr. MANSFIELD. I ask unanimous consent that, at the conclusion of the prayer tomorrow, the distinguished senior Senator from Colorado (Mr. ALLOTT) be recognized for not to exceed 1 hour and 15 minutes.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

LIMITATION ON STATEMENTS DURING THE CONSIDERATION OF ROUTINE MORNING BUSINESS TOMORROW

Mr. MANSFIELD. I ask unanimous consent that, at the conclusion of the remarks of the Senator from Colorado (Mr. ALLOTT) tomorrow, there be a period for the transaction of routine morning business, with statements therein limited to 3 minutes.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

EXECUTIVE PROGRAM

Mr. MANSFIELD. Mr. President, for the further information of the Senate, it is anticipated, barring objections, that the nomination of Judge Blackmun to the Supreme Court will be taken up on Monday next.

That is about the extent of the program.

MESSAGES FROM THE PRESIDENT—APPROVAL OF BILLS

Messages in writing from the President of the United States were communicated to the Senate by Mr. Leonard, one of his secretaries, and he announced that the President had approved and signed the following acts:

On May 1, 1970:

S. 3253. An act to provide that the Federal Office Building and United States Courthouse in Chicago, Ill., shall be named the "Everett McKinley Dirksen Building."

On May 4, 1970:

S. 1968. An act to authorize the Secretary of the Interior to permit the removal of the Francis Asbury statue, and for other purposes.

EXECUTIVE MESSAGE REFERRED

As in executive session, the Presiding Officer (Mr. EAGLETON) laid before the Senate a message from the President of the United States the nomination of J. Richard Lucas, of Virginia, to be Director of the Bureau of Mines, which was referred to the Committee on Interior and Insular Affairs.

CHANGE IN CONFEREES

Mr. WILLIAMS of Delaware. Mr. President, the Senator from Utah (Mr. BENNETT) was appointed as a conferee on H.R. 14465, the airports bill. The conference committee is meeting this afternoon, and the Senator from Utah is out of town on official business.

With his consent, I ask unanimous consent that the name of the Senator from Nebraska (Mr. CURTIS) be substituted as a conferee on this bill in place of the Senator from Utah.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

TRANSACTION OF ROUTINE MORNING BUSINESS

Mr. MANSFIELD. Mr. President, I ask unanimous consent that there be a period for the transaction of routine morning business, with a limitation of 3 minutes on statements.

The PRESIDING OFFICER. Without objection, it is so ordered.

COMMUNICATIONS FROM EXECUTIVE DEPARTMENTS, ETC.

The ACTING PRESIDENT pro tempore (Mr. BYRD of Virginia) laid before the Senate the following letters, which were referred as indicated:

PROPOSED LEGISLATION TO AUTHORIZE REIMBURSEMENT FOR QUARTERS FOR CERTAIN MEMBERS OF THE NAVAL SERVICE

A letter from the Secretary of the Navy, transmitting a draft of proposed legislation to amend title 10, United States Code, to authorize reimbursement for expenses incurred in obtaining quarters by certain members of the naval service on sea duty who are deprived of their quarters aboard ship, and for other purposes (with an accompanying paper); to the Committee on Armed Services.

PROPOSED LEGISLATION PROVIDING FOR PROMOTION OF CERTAIN OFFICERS IN THE NAVAL RESERVE

A letter from the Secretary of the Navy, transmitting a draft of proposed legislation to amend section 5891 of title 10, United States Code, providing for the consideration for promotion and the promotion of certain officers in the Naval Reserve (with an accompanying paper); to the Committee on Armed Services.

PROPOSED LEGISLATION RELATING TO ASSIGNMENT OF LINEAL POSITION TO CERTAIN OFFICERS OF THE NAVY AND MARINE CORPS

A letter from the Secretary of the Navy, transmitting a draft of proposed legislation to amend section 5504 of title 10, United States Code, relating to assignment of lineal position to certain officers of the Navy and Marine Corps (with an accompanying paper); to the Committee on Armed Services.

PROPOSED 4 YEAR EXTENSION OF LAW PERMITTING FOREIGN NATIONALS OF COUNTRIES ASSISTING UNITED STATES IN VIETNAM TO ATTEND THE THREE SERVICE ACADEMIES

A letter from the Secretary of the Navy, transmitting a draft of proposed legislation to amend the existing provisions of law which permit persons from countries assisting the United States in Vietnam to receive instruction at the U.S. Military Academy, the U.S. Naval Academy, and the U.S. Air Force Academy, and to extend for a temporary period the existing provisions of that law, and for other purposes (with an accompanying paper); to the Committee on Armed Services.

REPORT OF ACTUAL PROCUREMENT RECEIPTS FOR MEDICAL STOCKPILE OF CIVIL DEFENSE EMERGENCY SUPPLIES AND EQUIPMENT PURPOSES

A letter from the Secretary of Health, Education, and Welfare, reporting, pursuant to law, on actual procurement receipts for medical stockpile of civil defense emergency supplies and equipment purposes for the quarter ended March 31, 1970; to the Committee on Armed Services.

PROPOSED DONATION BY NAVY OF LOCOMOTIVE TO THE BLACKBERRY CREEK RAILWAY HISTORICAL SOCIETY

A letter from the Under Secretary of the Navy, transmitting, pursuant to law, the information of the intention of the Department to donate one locomotive, diesel-electric, to the Blackberry Creek Railway Historical Society, Inc., Jacksonville, Fla.; to the Committee on Armed Services.

REPORT OF BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM

A letter from the Chairman of the Board of Governors, Federal Reserve System, transmitting, pursuant to law, the report of the Board of Governors of the Federal Reserve System for calendar year 1969 (with an accompanying report); to the Committee on Banking and Currency.

REPORT OF GRANTS FOR BASIC SCIENTIFIC RESEARCH, DEPARTMENT OF DEFENSE

A letter from the Assistant Secretary of Defense, transmitting, pursuant to law, a report showing grants for basic scientific research made by the Department to nonprofit institutions during calendar year 1969 (with an accompanying report); to the Committee on Government Operations.

REPORT OF THE COMPTROLLER GENERAL

A letter from the Comptroller General of the United States, transmitting, pursuant to law, a report on the questionable justification and loose administration of the special cost-of-living allowance paid to certain civilian employees in the Republic of Vietnam, Department of State, dated May 5, 1970 (with an accompanying report); to the Committee on Government Operations.

PROPOSED LEGISLATION PROHIBITING UNAUTHORIZED USE OF THE CHARACTER "JOHNNY HORIZON"

A letter from the Assistant Secretary of the Interior, transmitting a draft of proposed legislation to prevent unauthorized use of the character "Johnny Horizon," and for other purposes (with accompanying papers); to the Committee on Interior and Insular Affairs.

THIRD PREFERENCE AND SIXTH PREFERENCE CLASSIFICATION FOR CERTAIN ALIENS

A letter from the Commissioner, Immigration and Naturalization Service, Department of Justice, transmitting, pursuant to law, reports relating to third preference and sixth preference classifications for certain aliens (with accompanying papers); to the Committee on the Judiciary.

PROPOSED LEGISLATION TO CLARIFY THE LAW RELATING TO SALARY PROTECTION IN THE POST OFFICE DEPARTMENT

A letter from the Postmaster General, transmitting a draft of proposed legislation to clarify the law relating to salary protection (with an accompanying paper); to the Committee on Post Office and Civil Service.

PETITIONS

The ACTING PRESIDENT pro tempore (Mr. BYRD of Virginia) laid before the Senate a Resolution of the Senate of the State of Maryland, which was referred to the Committee on Foreign Relations, as follows:

SENATE RESOLUTION No. 78

(By Senators Curran, Anderson, Azrael, Bailey, Bertier, Bertorelli, Bishop, Brubaker, Byron, Clark, Connelly, Conroy, Cook, Emanuel, Friedler, Hall, Hughes, Manning, McGuirk, Pine, Schweinhaut, and Steinberg)

Senate Resolution strongly protesting the treatment of American servicemen and civilians held prisoner by North Vietnam and by

the National Liberation Front of South Vietnam and calling upon them to comply with the 1949 Geneva Convention.

Whereas, More than 1,400 members of the U.S. Armed Forces, plus 35 civilians are known or believed to be prisoners of North Vietnam and the National Liberation Front of South Vietnam as a result of the conflict in Southeast Asia; and

Whereas, The families of forty-nine of these servicemen are residents of the State of Maryland; and

Whereas, North Vietnam and the National Liberation Front of South Vietnam have repeatedly refused to release the names of the prisoners that they hold, to allow inspection of prison facilities by neutral parties, to permit a regular exchange of mail between prisoners and their families, to release seriously ill or injured prisoners, and to engage in negotiations for the release of all prisoners; and

Whereas, These actions on the part of the enemy are in direct and flagrant violation of the requirements of the 1949 Geneva Convention on prisoners which North Vietnam has ratified and by which it is bound; and

Whereas, The refusal of North Vietnam and the National Liberation Front of South Vietnam to identify members of the United States Armed Forces and civilians who are in their custody has caused immeasurable distress, agony and uncertainly in the hearts of their loved ones; and

Whereas, All evidence indicates inhumane treatment of United States servicemen and civilians by their captors, which violates fundamental standards of human decency and deviates from civilized concepts concerning the treatment of prisoners of war; and

Whereas, The twenty-first International Conference of the Red Cross, on 13 September, 1969, approved by a vote of 114 to 0 a resolution calling on all parties to armed conflicts to prevent violations of the Geneva Convention on prisoners of war; and

Whereas, The House of Representatives, on 15 December, 1969, adopted by a roll call vote of 405 to 0 a resolution calling on North Vietnam and the National Liberation Front of South Vietnam to comply with the provisions of the 1949 Geneva Convention; and

Whereas, The United States of America has always abided by these provisions; now, therefore, be it

Resolved by the Senate of Maryland, On behalf of the residents of the State and United States citizens generally, strongly protests the treatment of American servicemen and civilians held prisoner by North Vietnam and the National Liberation Front of South Vietnam, and calls on them to comply with the requirements of the 1949 Geneva Convention relative to the Treatment of Prisoners of War, and endorses efforts by the United States Government, the United Nations, the International Red Cross, and leaders and peoples of the world toward attaining that objective; and be it further

Resolved, That copies of this Resolution be sent to the President of the United States, the Vice-President of the United States, the Speaker of the House of Representatives, the Department of State, the Department of Defense, all Maryland Senators, all Maryland Congressmen, and William Michael Tolley, 1206 Briggs-Chaney Road, Silver Spring, Maryland.

Read and adopted.

By the Senate, March 27, 1970.

By order, Oden Bowie, Secretary.

WILLIAM S. JAMES,
President of the Senate.
ODEN BOWIE,
Secretary of the Senate.

Mr. KENNEDY. Mr. President, I present for the consideration of the Senate a resolution passed by the House of Representatives of the Commonwealth of Massachusetts memorializing the President of the United States, the Congress of the United States and the Secretary of State in support of the State of Israel, and ask that it be printed in the RECORD and appropriately referred.

The PRESIDING OFFICER (Mr. SCHWEIKER). Without objection, it is so ordered.

The resolution was referred to the Committee on Foreign Relations, as follows:

RESOLUTIONS MEMORIALIZING THE PRESIDENT OF THE UNITED STATES, THE CONGRESS OF THE UNITED STATES, AND THE SECRETARY OF STATE IN SUPPORT OF THE STATE OF ISRAEL

Whereas, The United States of America was the first foreign power to recognize the new State of Israel in 1948 and since that time has maintained with the State of Israel common friendship, cooperation and an identity of interest in the aims of democratic government; and

Whereas, Israel is the sole bastion of democracy in the Middle East and the staunch and tested friend of the United States and its presence in the Middle East; and

Whereas, The identity of interests between the United States of America and Israel flourished and were secured under the bipartisan policy of all successive administrations since 1948; and

Whereas, Israel, without the utilization of a single foreign soldier, is resisting the communist thrust into the Middle East; and

Whereas, Recent policy statements of the State Department and of the present administration in Washington denote a reversal of that policy of mutual trust, cooperation and the pursuit of common goals in disregard of the realities of the historical perspectives, politics and physical necessities of Israel's present posture in the Middle East; and

Whereas, Such reversal of policy by the State Department threatens a grave injustice to a friend and ally and the destruction of our self interest in the Middle East; now, therefore, be it

Resolved, That the Massachusetts General Court calls upon the President of the United States, the Congress of the United States and the State Department of the United States to once again recognize and reaffirm its commitment to a peace between the Arab States and Israel arrived at only by direct negotiations between the two parties directly concerned, and by the recognition by the Arab States of the sovereignty of the State of Israel; to declare and affirm as basic policy that while the United States is desirous of being a friend to all nations of the Middle East that it will not purchase this friendship at the cost of a holocaust in the State of Israel; and to declare a restriction on the sale of arms to Israel cannot be imposed by the United States so long as the Soviet Union and other nations do not recognize a similar duty to restrict their contribution to the escalation of the arms race in the Middle East by wholesale commitment of offensive arms to the Arab States, in any event, to insure that Israel's capacity to defend herself without the requisite that foreign troops intervene be maintained in its complete integrity; and be it further

Resolved, That copies of this joint resolution be forwarded by the Secretary of the Commonwealth to the President of the United States, the Massachusetts members of the Congress of the United States and to the Secretary of State of the United States.

Senate, adopted, April 13, 1970.

NORMAN L. PIDGEON, *Clerk.*

House of Representatives, adopted in concurrence, April 21, 1970.

WALLACE C. MILLS, *Clerk.*

A true copy.

Attest:

JOHN F. X. DAVOREN,
Secretary of the Commonwealth.

REPORTS OF COMMITTEES

The following reports of committees were submitted:

By Mr. JORDAN of North Carolina, from the Committee on Agriculture and Forestry, without amendment:

S. 2991. A bill to extend the Act establishing Federal agricultural services in Guam (Rept. No. 91–844).

By Mr. AIKEN, from the Committee on Agriculture and Forestry, with an amendment:

H.R. 5554. An act to provide a special milk program for children (Rept. No. 91–842).

By Mr. HOLLAND, from the Committee on Agriculture and Forestry, with amendments:

H.R. 14810. An act to amend section 602(3) and section 608c(6)(I) of the Agricultural Marketing Agreement Act of 1937, as amended, so as to authorize production research under marketing agreement and order programs (Rept. No. 91–843).

By Mr. LONG, from the Committee on Commerce, without amendment:

H.R. 15694. An act to authorize appropriations for procurement of vessels and aircraft and construction of shore and offshore establishments for the Coast Guard (Rept. No. 91–846).

By Mr. LONG, from the Committee on Commerce, with amendments:

H.R. 13816. An act to improve and clarify certain laws affecting the Coast Guard (Rept. No. 91–847).

By Mr. GRAVEL, from the Committee on Interior and Insular Affairs, with an amendment:

H.R. 12858. An act to provide for the disposition of certain funds awarded to the Tlingit and Haida Indians of Alaska by a judgment entered by the Court of Claims against the United States (Rept. No. 91–848).

POISON PREVENTION PACKAGING ACT OF 1970—REPORT OF A COMMITTEE (S. REPT. NO. 91–845)

Mr. MOSS. Mr. President, on behalf of the Committee on Commerce, I report favorably, with amendments, S. 2162, the Poison Prevention Packaging Act of 1970, as amended.

The purpose of S. 2162 is to reduce injuries to, and illnesses of, young children arising from ingestion of toxic or harmful substances customarily produced or distributed for sale for consumption, use, or storage by individuals in or about the household. The purpose of the bill is to be accomplished by requiring household substances, which are accessible to young children and which may cause injury or illness, to be contained in special packaging that is significantly difficult for children under 6 years of age to open or obtain a toxic or harmful amount of such substances within a reasonable time, but not difficult for normal adults to use properly. Special packaging is considered to be practicable because young children lack adult capabilities of strength, mastery of more complex operations and dexterity.

The scope of S. 2162 extends across all product lines and types to include all substances customarily produced or distributed for sale for consumption, use, or storage in or about the household. The bill authorizes the Secretary of Health, Education, and Welfare to determine whether a substance should be contained in special packaging on the basis of its degree or nature of hazard to children. It empowers the Secretary after con-

sultation with a technical advisory committee to establish performance standards for special packaging designed to protect young children against obtaining harmful amounts of such substance. Failure to conform to special packaging standards will result in the substance being deemed misbranded under applicable provisions of the Federal Hazardous Substances Act, the Food, Drug, and Cosmetic Act and the Federal Insecticide, Fungicide, and Rodenticide Act and subject to the penalties therein prescribed.

Although special packaging, by definition, is not to be difficult for normal adults to use, the committee recognized that elderly and handicapped persons—such as those with infirmities of the hand—may experience particular problems in opening special packaging. Accordingly, the committee has provided that substances for which special packaging standards have been established may, nonetheless, be marketed in one size of ordinary container not complying with special packaging standard, or if dispensed pursuant to prescription, may be sold in ordinary packaging at the purchasers request, for the use of the elderly and the handicapped. The single size container is to bear a label statement: "This package for households without young children."

The bill provides for creation of a technical advisory committee composed of members representative of industry, the public and the scientific and medical professions to advise the Secretary in making findings and establishing standards for substances.

Although the bill would become effective upon enactment, it provides that the effective date of regulations will be not sooner than 180 days after final promulgation of regulations. Moreover, the bill provides that States may not establish or continue in effect standards not identical with Federal standards.

The problem with which S. 2162 is concerned is doubtless familiar to you in its general outlines. Young children are curious and determined to investigate their new and expanding world. But they are not experienced and they are not cautious. Products that are safe for adults can be deadly for children who have not learned to handle them properly.

More specifically, children explore by sampling—and their mouths are their sampling devices. They do not restrict their intake to rocks and worms; they also sample medicines and cosmetics, drain cleaners and furniture polish, kerosene and paint thinner. Medicines and drugs account for about 50 percent of the cases. But examples of poisons are legion. Ingestion of potentially hazardous household substances is the most common medical emergency facing young children. There were 71,000 ingestions and 4,000 hospitalizations involving children under 5 years of age reported to the Poison Control Centers in 1968; 325 children died in 1967 from these causes. But the reported figures do not give an accurate picture of the actual number of emergencies, and the number of deaths does not reveal the true dimensions of the tragedy. Estimates place serious cases of ingestion between 500,000 and 2 million. Mortality alone fails to reveal the suffering during convalescence of children who recover and the toll paid by those who are maimed for life.

I cannot forget a case described in our hearings. Young Michael, 18 months, got into electric dishwashing compound one morning. His mother, who had training as a nurse, quickly washed out his mouth and throat, but to no avail. The highly corrosive product severely burned his throat. He was in surgery for 6 hours, several times close to death, and to the date of the hearings, 14 months later, was required to return to the hospital for 1 of every 7 days to have dilated the scar tissue that threatens to close off his throat. Other witnesses testified that this was not a typical case.

The committee believes that the proper purpose of S. 2162 should be not only prevention of deaths, but also prevention of accidents themselves. Immeasurable tragedy occurs in cases where the child does not die, but is forced to undergo medical treatment and, perhaps, to spend the remainder of his life with some accident-caused impairment of his facilities.

The efficacy of several forms of existing child-resistant containers in preventing access to their contents has been established. For example, laboratory tests conducted with small, but statistically sufficient, numbers of children show that some types of child-resistant containers baffle at least three-fourths of the youngsters confronted with them. A large-scale field test involving over 600,000 containers and extending over 2 years has shown that 90 percent of poisoning due to medicines can be prevented by dispensing medicines in child-resistant containers.

In light of this evidence, and mindful of the failure of prior efforts to secure widespread usage of child-resistant packaging, the committee feels that legislation is now necessary to bring the benefits of such packaging to the American public. We look forward to the day when accidental poisoning of young children will not be as common a tragedy as it is today.

The PRESIDING OFFICER (Mr. SCHWEIKER). The report will be received and the bill will be placed on the calendar; and the report will be printed.

EXECUTIVE REPORT OF A COMMITTEE

As in executive session, the following favorable report of a nomination was submitted:

By Mr. EASTLAND, from the Committee on the Judiciary:

Harry A. Blackmun, of Minnesota, to be an Associate Justice of the Supreme Court of the United States.

BILLS AND A JOINT RESOLUTION INTRODUCED

Bills and a joint resolution were introduced, read the first time and, by unanimous consent, the second time, and referred as follows:

By Mr. COTTON:

S. 3803. A bill to amend part I of the Interstate Commerce Act, as amended, to authorize railroads to publish rates for use by common carriers; to the Committee on Commerce.

S. 3804. A bill for the relief of Constance W. Daniels; to the Committee on the Judiciary.

(The remarks of Mr. COTTON when he introduced S. 3803 appear later in the RECORD under the appropriate heading.)

By Mr. EASTLAND:

S. 3805. A bill for the relief of Richard W. Yantis; to the Committee on the Judiciary.

By Mr. BURDICK (for himself, Mr. METCALF and Mr. Moss):

S. 3806. A bill to promote the economic development of the Trust Territory of the Pacific Islands; to the Committee on Interior and Insular Affairs.

By Mr. SMITH of Illinois:

S. 3807. A bill to provide a program to improve the opportunity of students in elementary and secondary schools to study cultural heritages of the major ethnic groups in the Nation; to the Committee on Labor and Public Welfare.

(The remarks of Mr. SMITH of Illinois when he introduced the bill appear later in the RECORD under the appropriate heading.)

By Mr. THURMOND (for himself and Mr. ERVIN):

S. 3808. A bill to limit the jurisdiction of courts of the United States with respect to the assignment of students; to the Committee on the Judiciary.

By Mr. NELSON:

S. 3809. A bill to authorize the Commissioner of Education to award fellowships to persons preparing for environmental careers; to the Committee on Labor and Public Welfare.

(The remarks of Mr. NELSON when he introduced the bill appears later in the RECORD under the appropriate heading.)

By Mr. TYDINGS:

S. 3810. A bill for the relief of Miss Leonida D. Lilan; to the Committee on the Judiciary.

By Mr. WILLIAMS of New Jersey:

S. 3811. A bill for the relief of Vincenta Maria De Carazo; and

S. 3812. A bill for the relief of Catherine V. LaFayette; to the Committee on the Judiciary.

By Mr. TOWER:

S. 3813. A bill for the relief of Kim Julia and Park Tong Op; and

S. 3814. A bill for the relief of Bitten Stripp; to the Committee on the Judiciary.

S. 3815. A bill to amend the Land Acquisition Policy Act of 1960, so as to define the consideration to be paid for taking of property for public purposes along navigable waters of the United States; to the Committee on Public Works.

By Mr. THURMOND (for himself and Mr. ERVIN):

S. J. Res. 198. Joint resolution proposing an amendment to the Constitution of the United States relating to the attendance of students at public elementary or secondary schools; to the Committee on the Judiciary.

(The remarks of Mr. THURMOND when he introduced the joint resolution appear later in the RECORD under the appropriate heading.)

S. 3803—INTRODUCTION OF A BILL TO AUTHORIZE RAILROADS TO PUBLISH RATES FOR USE BY COMMON CARRIERS

Mr. COTTON. Mr. President, I am introducing a bill to improve freight transportation service in this country. With all of our capacity for the movement of goods, there has developed in recent years a near-crisis in the transportation of small shipments in the United States. I am convinced that one of the reasons for this is the lack of coordination among

the various types of carriers. The bill which I am introducing will authorize railroads to publish rates for use by other common carriers—motor, water, and freight forwarder. This should be particularly helpful in the case of freight forwarders, whose activities are basically limited to the small-shipment field but who have not been given the same flexibility as others carriers in dealing with the railroads.

I view this legislation as important to the achievement of two goals that are in the public interest: First, and most important, it will encourage the development of new, competitive common carrier services specifically geared to the needs of the small shipment transportation market, a market that has long been squeezed between the decreasing quality of service and increasing costs. Second, it will provide additional opportunities for railroads and freight forwarders, who have cooperated closely for more than a century, to render better services to small shippers.

The ACTING PRESIDENT pro tempore (Mr. BYRD of Virginia). The bill will be received and appropriately referred.

The bill (S. 3803) to amend part I of the Interstate Commerce Act, as amended, to authorize railroads to publish rates for use by common carriers, introduced by Mr. COTTON, was received, read twice by its title and referred to the Committee on Commerce.

S. 3807—INTRODUCTION OF THE ETHNIC HERITAGE STUDIES CENTERS ACT OF 1970

Mr. SMITH of Illinois. Mr. President, last Sunday, May 3, it was my honor to join with the many fine Americans of Polish descent in Illinois in celebrating the 179th anniversary of the adoption of the Polish Constitution. Unfortunately, Polish Constitutional Independence was short lived. Poland was partitioned by Russia, Austria, and Prussia in 1795, a mere 4 years later. She regained her independence but briefly between the two World Wars. The dream of freedom and liberty survives in the hearts of Poles around the world.

America has been indebted to Poland since the founding of our own Nation. From Kosciuszko, and Pulaski to the present the patriotism and contributions of the Polish people have helped to create the greatness that is the United States. Ten million Americans claim Polish ancestry. They are proud of their cultural heritage. They have reason to be proud.

Polish Americans form but one segment of the polyethnic nature of the American people. Across this country Americans whose families came from Poland, China, Estonia, and Greece, indeed from all corners of the world, still celebrate their native holidays, working to preserve their own cultural heritages and the contributions each has made to the fabric of American cultural life.

To recognize and preserve our national culture, I rise, today, Mr. President, to introduce the Ethnic Heritage Studies Centers Act of 1970. It is the purpose of this bill to provide the study centers for training teachers and developing curriculums to enable our elementary and secondary schools to give our young people a more balanced view of their total heritage.

Despite the impression created by many of our textbooks, this country was not created, settled, and tamed by the efforts of any one people or group of people. The building of this Nation required the mingled sweat from the brows of Asians, Africans, and Europeans alike. As the memories grow dim and the languages are lost a sense of identity with the American dream is lost.

The establishment of Ethnic Heritage Studies Centers would keep alive and disseminate what this country owes to the nations of the world. It will restore to the curriculums an understanding of the cooperative effort and spirit of competition which have made 13 colonies into the richest, strongest, and most diverse country in the history of the world.

Mr. President, I ask unanimous consent that the text of the Ethnic Heritage Studies Centers Act of 1970 be printed in the RECORD at this point.

Thank you, Mr. President.

The ACTING PRESIDENT pro tempore (Mr. METCALF). The bill will be received and appropriately referred; and, without objection, the bill will be printed in the RECORD.

The bill (S. 3807) to provide a program to improve the opportunity of students in elementary and secondary schools to study cultural heritages of the major ethnic groups in the Nation, introduced by Mr. SMITH, of Illinois, was received, read twice by its title, referred to the Committee on Labor and Public Welfare, and ordered to be printed in the RECORD, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as "The Ethnic Heritage Studies Centers Act of 1970."

SEC. 2. The Elementary and Secondary Education Act of 1965 is amended by adding at the end thereof the following new title:

"TITLE IX—ETHNIC HERITAGE STUDIES CENTERS

"STATEMENT OF POLICY

"SEC. 901. This title is enacted in recognition of the heterogeneous composition of the Nation and of the fact that in a multi-ethnic society, a greater understanding of the contributions of one's own heritage and those of one's fellow citizens can contribute to a more harmonious, patriotic, and committed populace. It is further enacted in recognition of the principle that all students in elementary and secondary schools of the Nation should have an opportunity to learn about the differing and unique contributions to the national heritage made by each ethnic group. It is the purpose of this title to assist schools and school systems in affording each of their students an opportunity to learn about the nature of his own cultural heritage, and those in which he has an interest, and to study the contributions of these forebears to the Nation.

"ETHNIC HERITAGE STUDIES CENTERS

"SEC. 902. The Commissioner is authorized to arrange through grants and private nonprofit educational agencies and organizations for the establishment and operation of a number of Ethnic Heritage Studies Centers, reflecting the readily identifiable ethnic groups represented in the population of the United States. Each such Center shall carry on activities related to a single culture or regional group of cultures.

"ACTIVITIES OF ETHNIC HERITAGE STUDIES CENTERS

"SEC. 903. Each Center provided for under this title shall—

"(1) develop curriculum materials for use in elementary and secondary schools which deal with the history, geography, society, economy, literature, art, music, drama, language, and general culture of the group with which the Center is concerned, and the contributions of that ethnic group to the American heritage,

"(2) disseminate curriculum materials to permit their use in elementary and secondary schools throughout the Nation, and

"(3) provide training for persons utilizing or preparing to utilize the curriculum materials developed under this title.

"ADMINISTRATIVE PROVISIONS

"SEC. 904. (a) In carrying out this title, the Commissioner shall make arrangements which will utilize (1) the research facilities and personnel of colleges and universities, (2) the special knowledge of ethnic groups in local communities and of foreign students pursuing their education in this country, and (3) the expertise of elementary and secondary school teachers.

"(b) Funds appropriated to carry out this title may be used to cover all or part of the cost of establishing, equipping, and operating the Centers, including the cost of research materials and resources, academic consultants, and the cost of training of staff for the purpose of carrying out the purposes of this title. Such funds may also be used to provide stipends (in such amounts as may be determined in accordance with regulations of the Commissioner) to individuals receiving training in such Centers, including allowances for dependents.

"AUTHORIZATION OF APPROPRIATIONS

"SEC. 905. There is authorized to be appropriated to carry out this title for the fiscal year ending June 30, 1970, the sum of $10,000,000, and for the fiscal year ending June 30, 1971, the sum of $20,000,000."

S. 3809—INTRODUCTION OF ENVIRONMENTAL CAREER FELLOWSHIPS ACT

Mr. NELSON. Mr. President, I am today introducing a bill entitled the "Environmental Career Fellowship Act." This bill authorizes a program of fellowship grants to enable persons preparing for environmental careers to pursue graduate or professional courses of study in institutions of higher education in all regions of the Nation.

In attacking the problems of our environment, a substantially increased supply of professional skills will be needed in the coming years. We must promptly undertake to expand opportunities for persons to acquire these skills in the Nation's universities.

A survey printed in the May 1967 issue of Occupational Outlook Quarterly projected an increase in State and local requirements for sanitation engineers, hydrologists, chemists, and biologists from 172,000 persons in 1965 to 320,000 persons in 1975. Those estimates project a doubling in a 10-year period just for skilled personnel needed in efforts to clean up polluted streams and rivers. Those figures do not take into account many other professional fields which must expand rapidly in order to enable the Nation to maintain a livable environment.

The legislation I am introducing today provides not only for fellowships to enable persons to pursue graduate or professional studies in preparation for environmental careers, but also authorizes program development grants to assist universities in developing and strengthening high quality programs of professional and graduate study for persons devoting their live to environmental careers. These program development grants are designed to help create and expand programs in all regions of the United States—not merely a few centers at a handful of universities.

Mr. President, I ask unanimous consent that the text of the bill be printed in the RECORD at this point.

The PRESIDING OFFICER (Mr. EAGLETON). The bill will be received and appropriately referred; and, without objection, the bill will be printed in the RECORD.

The bill (S. 3809) to authorize the Commissioner of Education to award fellowships to persons preparing for environmental careers, introduced by Mr. NELSON, was received, read twice by its title, referred to the Committee on Labor and Public Welfare, and ordered to be printed in the RECORD, as follows:

S. 3809

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Environmental Career Fellowships Act".

AWARD OF FELLOWSHIPS

SEC. 2. The Commissioner of Education is authorized to award fellowships in accordance with the provisions of this Act for graduate or professional study for persons who plan to pursue environmental careers, in such fields as ecology, hydrology, chemistry, biology, and engineering related to the control of environmental pollution.

ALLOCATION OF FELLOWSHIPS

SEC. 3. The Commissioner shall allocate fellowships under this Act among institutions of higher education with programs approved under the provisions of this Act for the use of individuals accepted for study in such programs, in such manner and according to such plan as will insofar as practicable provide for an equitable distribution of such fellowships throughout all regions of the Nation.

APPROVAL OF PROGRAMS

SEC. 4. The Commissioner may approve a program of study as eligible for fellowships under this Act only upon application by an institution of higher education and only upon his finding—

(1) that such program has as a principal or significant objective the education of persons for environmental careers, including professional or technical occupations for which there is a significant need in environmental fields;

(2) that such program will expand opportunities for persons to undertake graduate or professional study in preparation for environmental careers;

(3) that such program is in effect and of high quality, or can readily be put into effect and may reasonably be expected to be of high quality;

(4) that the institution provides satisfactory assurance that it will recommend to the Commissioner, for the award of fellowships under this Act, only persons who have demonstrated to the satisfaction of the institution a serious intent to pursue an environmental career upon completing the program;

(5) that such institution agrees to accept the cost-of-education allowance provided under section 6(b) of this Act in lieu of any tuition or fees which would otherwise be charged to fellowship recipients for their course of study.

PROGRAM DEVELOPMENT GRANTS

SEC. 5. In order to expand the number of opportunities for graduate and professional study for persons preparing to serve in environmental careers and to achieve an appropriate geographical distribution of high quality programs offering such opportunities, the Commissioner is authorized to make grants to or contracts with institutions of higher education to pay part of the cost of developing or strengthening programs of graduate or professional study which meet, or as a result of the assistance received under this section will be enabled to meet, the requirements for an approved fellowship program in accordance with section 4 of this Act.

STIPENDS AND COST-OF-EDUCATION ALLOWANCES

SEC. 6. (a) The Commissioner shall pay persons awarded fellowships under this Act such stipends (including such allowances for subsistence and other expenses for such persons and their dependents) as he may determine to be consistent with prevailing practices under comparable federally supported programs.

(b) The Commissioner shall (in addition to the stipends paid to persons under subsection (a)) pay to the institution of higher education at which such person is pursuing his course of study a cost-of-education allowance of such amount as the Commissioner may determine to be consistent with prevailing practices under comparable federally supported programs.

AUTHORIZATION OF APPROPRIATIONS

SEC. 7. For the purpose of carrying out this Act, there are authorized to be appropriated $50,000,000 for the fiscal year ending June 30, 1971, $100,000,000 for the fiscal year ending June 30, 1972, $150,000,000 for the fiscal year ending June 30, 1973, and $200,000,000 for each succeeding fiscal year.

SENATE JOINT RESOLUTION 198—INTRODUCTION OF A JOINT RESOLUTION PROPOSING AN AMENDMENT TO THE CONSTITUTION RELATING TO THE ATTENDANCE OF STUDENTS AT PUBLIC ELEMENTARY OR SECONDARY SCHOOLS

Mr. THURMOND. Mr. President, on behalf of myself and the Senator from North Carolina (Mr. ERVIN), I introduce, for appropriate reference, a joint resolution proposing an amendment to the Constitution of the United States relating to the attendance of students at public elementary or secondary schools. I ask unanimous consent that the joint resolution be printed in the RECORD.

The PRESIDING OFFICER (Mr. EAGLETON). The joint resolution will be received and appropriately referred; and, without objection, the joint resolution will be printed in the RECORD.

The joint resolution (S.J. Res. 198) proposing an amendment to the Constitution of the United States relating to the attendance of students at public elementary or secondary schools, introduced by Mr. THURMOND (for himself and Mr. ERVIN), was received, read twice by its title, referred to the Committee on the Judiciary, and ordered to be printed in the RECORD, as follows:

S.J. RES. 198

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled (two-thirds of each House concurring therein), That the following article is proposed as an amendment to the Constitution of the United States, which shall be valid to all intents and purposes as part of the Constitution when ratified by the legislatures of three-fourths of the several States:

"ARTICLE —

"SECTION 1. No student shall be assigned or compelled to attend any public elementary or secondary school on account of race, creed, color, or national origin, or for the purpose of achieving equality in attendance or increased attendance or reduced attendance, at any such school, of persons of one or more particular races, creeds, colors, or national origins; and no school district, school zone, or attendance unit, by whatever name known, shall be established, reorganized or maintained for any such purpose, provided that nothing contained in this article shall prevent the assignment of a pupil in the manner requested or authorized by his parents or guardian.

ADDITIONAL COSPONSORS OF BILLS

S. 2193

Mr. McGOVERN. Mr. President, on behalf of the Senator from New Jersey (Mr. WILLIAMS), I ask unanimous consent that, at the next printing, the name of the Senator from Maryland (Mr. TYDINGS) be added as a sponsor of S. 2193, the Occupational Safety and Health Act.

The PRESIDING OFFICER (Mr. ALLEN). Without objection, it is so ordered.

S. 3760

Mr. BAKER. Mr. President, I ask unanimous consent that, at the next printing, the name of the Senator from Oregon (Mr. HATFIELD) be added as a cosponsor of S. 3760, to provide for a Commission on Transportation Regulatory Agencies.

The PRESIDING OFFICER (Mr. ALLEN). Without objection, it is so ordered.

SENATE RESOLUTION 404—SUBMISSION OF A RESOLUTION TO ESTABLISH A SPECIAL COMMITTEE ON THE KENT STATE UNIVERSITY DISORDERS

Mr. YOUNG of Ohio submitted a resolution (S. Res. 404) to establish a Special Committee on the Kent State University Disorders, which was referred to the Committee on Labor and Public Welfare.

(The remarks of Mr. YOUNG of Ohio when he submitted the resolution appear earlier in the RECORD under the appropriate heading.)

ADDITIONAL COSPONSORS OF A RESOLUTION

S. RES. 399

Mr. MAGNUSON. Mr. President, I ask unanimous consent that, at the next printing, the names of the Senator from Missouri (Mr. EAGLETON) and the Senator from New York (Mr. JAVITS) be added as cosponsors of Senate Resolution 399, relating to the creation of a World Environment Institute to aid all the nations of the world in solving their common environmental problems.

The ACTING PRESIDENT pro tempore (Mr. METCALF). Without objection, it is so ordered.

ENROLLED BILLS AND JOINT RESOLUTION PRESENTED

The Secretary of the Senate reported that on today, May 6, 1970, he presented to the President of the United States the following enrolled bills and joint resolution:

S. 3007. An act to authorize the transfer of the Brown unit of the Fort Belknap Indian irrigation project on the Fort Belknap Indian Reservation, Mont., to the landowners within the unit;

S. 3435. An act to provide for the striking of medals in commemoration in completion of the carvings on Stone Mountain, Ga., depicting heroes of the Confederacy; and

S.J. Res. 193. Joint Resolution to provide for the appointment of James Edwin Webb as Citizen Regent of the Board of Regents of Smithsonian Institution.

AUTHORIZATION OF THE ESTABLISHMENT OF CERTAIN EDUCATIONAL PROGRAMS — AMENDMENT

AMENDMENT NO. 613

Mr. PELL submitted an amendment, intended to be proposed by him, to the bill (S. 3151) to authorize the U.S. Commissioner of Education to establish educational programs to encourage understanding of policies and support of activities designed to enhance environmental quality and maintain ecological balance, which was referred to the Committee on Labor and Public Welfare and ordered to be printed.

(The remarks of Mr. PELL when he submitted the amendment appear earlier in the RECORD under the appropriate heading.)

AMENDMENT NO. 614

Mr. CRANSTON submitted amendments, intended to be proposed by him, to Senate bill 3151, supra, which were referred to the Committee on Labor and Public Welfare and ordered to be printed.

ASSISTANCE TO PERSONS IN OVERCOMING OBSTACLES TO SUITABLE EMPLOYMENT—AMENDMENTS

AMENDMENTS NOS. 615 THROUGH 617

Mr. JAVITS. Mr. President, the Subcommittee on Employment, Manpower, and Poverty of the Committee on Labor and Public Welfare has been conducting hearings on the administration's proposed new Manpower Training Act (S. 2838) which I introduced in the Senate. The act would establish the basis for a major decentralization of the administration of Federal manpower training programs as States and localities show an ability to provide the necessary services. It recognizes the need to let those on the local level determine the "mix" of manpower services that will best serve their areas; and as in the case of welfare reform, the administration has taken the lead in the effort to provide more services to benefit the poor.

However, there are areas for improvement which are being developed and I shall offer amendments to deal with these as the bill is considered by the subcommittee.

When I introduced the Manpower Training Act, I indicated that one of the matters that the committee would have to consider very carefully is the relationship between the programs thereunder and the programs under the Economic Opportunity Act.

I submit today three amendments to the Manpower Training Act, each designed to insure for the Office of Economic Opportunity, its offices, and most importantly, community action agencies and similiar organizations a role in an evolving comprehensive manpower program.

First, Mr. President, I introduce an amendment to insure that the Office of Economic Opportunity will have full authority to act as "advocate" for the poor in respect to manpower policy, as in other areas where the poor are vitally affected.

As the result of delegation and transfers by this and previous administrations a number of programs designed specifically for the poor and authorized under the Economic Opportunity Act are now conducted by the Departments of Labor and Health, Education, and Welfare. Through these "spinoff" programs—once regarded as controversial—have found an established place in the total Federal effort to help the poor.

Although the ultimate responsibility for these programs has been placed in established departments that have evidenced their concern for the poor, I think that it is appropriate that the Office of Economic Opportunity continue an oversight of such programs.

As the President has noted, the Office of Economic Opportunity is the only agency whose "special concern" is the poor.

With that in mind, the administration's Manpower Act provides that the Secretary of Labor is directed to consult with the Director of the Office of Economic Opportunity in respect to the formulation of rules, regulations, and standards and guidelines for the conduct of State and local programs financed by the act; the Department of Labor's experimental pilot and related programs; and the implementation of title V, dealing with manpower policy as an economic stabilizer.

Under the first amendment which I submit, the Office of Economic Opportunity would be authorized to pursue its role of advocate in a number of additional ways. The amendment would:

Authorize the Director of the Office of Economic Opportunity to conduct a continuing evaluation of all programs and activities carried out under the Manpower Training Act to determine their effectiveness in meeting the special needs of disadvantaged low-income persons for meaningful employment opportunities and supportive services. As the President noted on September 16, 1969, in response to a letter from Chairman NELSON of the Subcommittee on Employment, Manpower and Poverty and myself:

The Office of Economic Opportunity must be an advocate for the poor within the Federal agency structure. To effectively perform this function, I have instructed the Director to establish a research and evaluation office capable of government-wide evaluation. . . .

The amendment would add such an authorization to section 304.

Authorize the Director of the Office of Economic Opportunity to evaluate the Job Corp program—which would be transferred to the Department of Labor under the act—and provide for consultation with the Director in respect thereto. Section 202 would be amended.

Provide that State manpower planning organizations and area comprehensive manpower planning bodies shall be empowered in their own discretion, or at the request of the Secretary, to convey their assessments or evaluations of the State and area programs to the Director of the Office of Economic Opportunity, as well as to the Secretary of Labor, the Secretary of Health, Education, and Welfare, the Governor, and the general public. Section 104(a)(5) would be amended.

Second, Mr. President, I submit an amendment to insure greater participation of the poor and their representatives in the formulation of manpower programs on the local and national level. The amendment would:

Specify that members of community action agencies and other community based organizations are to be represented on State manpower planning organizations and provide that the Director of the Office of Economic Opportunity shall be consulted in prescribing standards for such organization. Section 104(a)(3), which now refers to the participation of "low-income groups" would be amended.

Would emphasize that representatives of persons, including low-income persons, who would be serviced by programs and activities under the act are to be included on the Manpower Advisory Committee which would be established under section 603 of the act: "to make recommendations concerning problems and policy relating to employment, manpower and to the carrying out of his duties under this Act."

My third amendment would:

Require that every State plan provide for the participation of low-income groups, including community action agencies and other community-based organizations wherever feasible in the conduct as well as the planning and evaluation of State and area programs established under this act. Section 104(a)(6) of the proposed act would be amended.

Include the extent of such participation as one of the factors considered in determining whether a state plan meets exemplary performance standards under section 102(b).

Mr. President, if our manpower programs are to continue to provide relevant services, then the poor must continue to have the opportunity to participate fully not only in the formulation of programs, but in their conduct, whenever they demonstrate a capacity to do the job.

Testifying before the Subcommittee on Employment, Manpower, and Poverty on February 27, 1970, Secretary of Labor George P. Shultz stated quite clearly that community action agencies and similar groups will be given a continuing role, depending upon their performance.

Mr. President, I think that this legislation should make this policy clear to the States and to the cities as they assume greater responsibility for manpower programs. It must be made clear, that, although community action agencies and similar organizations are not to be given a mandated role, they are to be given an equal chance to contribute to manpower programs on the local level. In short, this legislation must say to the States and the cities that the principle of local decision-making and participation embodied in the proposed act will not stop at the statehouse or at the mayor's office.

Mr. President, community action agencies and similar community-based organizations have shown a vitality in the manpower field. They can contribute what no established agency can contribute—a first hand experience in dealing with the problems of the poor. I think that it is of the utmost importance that this legislation make clear through these and any other necessary amendments that as the lines of authority for manpower programs change on the national level and greater authority is given to the States and cities, community action agencies will continue nonetheless to make their important contribution on the local level. And, that on the national level the Office of Economic Opportunity, as the advocate of the poor, will be given clear statutory authority to review and evaluate future manpower policy from the standpoint of the participation of the poor and the benefits derived for the poor.

Mr. President, I ask unanimous consent that these amendments be printed in the RECORD.

The ACTING PRESIDENT pro tempore (Mr. METCALF). The amendments will be received, printed, and appropriately referred; and, without objection, the amendments will be printed in the RECORD.

The amendments (Nos. 615, 616, and 617) were referred to the Committee on Labor and Public Welfare, as follows:

AMENDMENT NO. 615

On page 17, line 13, insert before the word "Governor" the following: "the Director of the Office of Economic Opportunity".

On page 33, between lines 15 and 16, insert the following new paragraph:

"(7) Section 206 is amended by inserting after the word 'Secretary' in the first sentence thereof a comma and the following: 'after consultation with the Director of the Office of Economic Opportunity".

On page 33, line 16, strike out "(7)" and insert in lieu thereof "(8)".

On page 33, line 18, strike out "(8)" and insert in lieu thereof "(9)".

On page 33, line 22, strike out "(9)" and insert in lieu thereof "(10)".

On page 34, line 3, strike out "(10)" and insert in lieu thereof "(11)".

On page 34, line 12, strike out "(11)" and insert in lieu thereof "(12)".

On page 34, line 14, strike out "(12)" and insert in lieu thereof "(13)".

On page 34, line 18, strike out "(13)" and insert in lieu thereof "(14)".

On page 34, line 22, strike out "(14)" and insert in lieu thereof "(15)".

On page 34, between lines 24 and 25, insert the following new paragraph:

"(16) Section 215(a) is further amended by inserting at the end thereof a new sentence: 'The Director of the Office of Economic Opportunity shall provide for a similar evaluation of the Job Corps Program, which evaluation shall be published and summarized in the report required under section 608 of the Economic Opportunity Act of 1964.' "

On page 34, line 25, strike out "(15)" and insert in lieu thereof "(17)".

On page 35, line 4, strike out "(16)" and insert in lieu thereof "(18)".

On page 35, line 8, strike out "(18)" and insert in lieu thereof "(19)".

On page 35, line 8, strike out "(18)" and insert in lieu thereof "(20)".

On page 35, line 12, strike out "(19)" and insert in lieu thereof "(21)".

On page 40, line 16, insert "(a)" after the second period.

On page 40, after line 24, insert the following new subsection:

"(b) The Director of the Office of Economic Opportunity is authorized to conduct, either directly or by way of contract, grant, or other arrangement, a thorough evaluation of all programs and activities conducted pursuant to this Act to determine the effectiveness of such programs and activities in meeting the special needs of disadvantaged, chronically unemployed and low-income persons for meaningful employment opportunities and supportive services to continue or resume their education and employment and to become more responsible and productive citizens. The Director of the Office of Economic Opportunity shall report on the evaluation required by this subsection at least once in each calendar year to the Secretary."

AMENDMENT NO. 616

On page 14, line 13, strike out the word "and" and insert in lieu thereof a comma.

On page 14, line 14, before the period insert the following: "and the Director of the Office of Economic Opportunity".

On page 14, line 25, strike out the word "and".

On page 14, line 25, insert after the word "employment" a comma and the following: "and economic opportunity".

On page 15, line 1, strike out the word "and" and insert in lieu thereof a comma.

On page 15, line 2, before the semicolon insert the following: "and community action agencies and other community-based organizations".

On page 50, line 18, strike out the third comma and insert in lieu thereof the following: "and the Director of the Office of Economic Opportunity".

On page 50, line 22, before the word "and" insert a comma and the following: "representatives of persons who would be serviced by programs and activities under this Act, including low-income persons".

AMENDMENT NO. 617

On page 10, line 8, strike out the third comma and insert in lieu thereof the following: "and the Director of the Office of Economic Opportunity,".

On page 10, line 14, before the period insert a comma and the following: "and the extent of participation of low income persons, community action agencies, and other community based organizations in the planning, and conduct, and evaluation of such programs,".

On page 17, line 15, strike out "groups in the planning" and insert in lieu thereof "groups and representatives and organizations of such groups including but not limited to community action agencies and other community-based organizations, wherever feasible, in the planning, conduct".

RAIL PASSENGER SERVICE ACT OF 1970—AMENDMENT

AMENDMENT NO. 618

Mr. PELL (for himself and Mr. KENNEDY) submitted an amendment, intended to be proposed by them, jointly, to the bill (S. 3706) to provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13(a) of the Interstate Commerce Act, and for other purposes, which was ordered to lie on the table and to be printed.

(The remarks of Mr. PELL when he offered the amendment appear earlier in the RECORD during the debate on S. 3706.)

ADDITIONAL COSPONSORS OF AN AMENDMENT

AMENDMENT NO. 609

Mr. McGOVERN. Mr. President, I ask unanimous consent that, at the next printing the names of the Senator from Alaska (Mr. GRAVEL), the Senator from Wisconsin (Mr. NELSON), the Senator from Indiana (Mr. BAYH), and the Senator from Oklahoma (Mr. HARRIS), be added as cosponsors of amendment No. 609 to H.R. 17123, to authorize appropriations during the fiscal year 1971 for procurement of aircraft, missiles, naval vessels, and tracked combat vehicles, and other weapons, and research, development, test, and evaluation for the Armed Forces, and to prescribe the authorized personnel strength of the Selected Reserve of each Reserve component of the Armed Forces, and for other purposes.

The PRESIDING OFFICER (Mr. ALLEN). Without objection, it is so ordered.

THE NEED FOR A WORLD ENVIRONMENTAL INSTITUTE

Mr. MAGNUSON. Mr. President, on April 27 I introduced Senate Resolution 399, with the bipartisan support of 40 cosponsors. The Resolution would take the first steps toward creating a World Environmental Institute to serve as an international "clearinghouse" on environmental information and as a research center for global environmental problems. The Institute would be nonpolitical in nature, independent of existing international organizations, and open to all nations of the world.

There is a compelling need for creation of this Institute, a need that I outlined in my floor speech on April 27. Today, I want to share with the Senate the similar lines of thought developed on the same subject by two great Americans, Dr. George F. Kennan and Dr. Richard N. Gardner. Dr. Kennan is our former Ambassador to Moscow and one of our greatest experts in international affairs; Dr. Gardner has had a distinguished career both in the State Department and at Columbia University.

Both Dr. Kennan and Dr. Gardner have recently made statements about international environmental problems that

reflect, quite independently of each other and of my proposal, the thinking that makes a World Environmental Institute imperative. I did not have the benefit of their writings until after I had prepared my Resolution and my accompanying speech, and although the writings of these two men differ from my proposal in important aspects, the underlying philosophy of all our statements is much the same. The fact that their ideas and mine have independently come to light at this time suggests that international action on environmental problems is an idea whose time has come. The differences in our respective approaches are less important than the common need we have recognized.

I hope all Members of the Senate will have an opportunity to read the articles by Dr. Kennan and Dr. Gardner as well as the materials I have sent out, and I earnestly hope that all Senators will join me and many of our colleagues in cosponsoring this resolution.

I ask unanimous consent to have printed in the RECORD Dr. Keenan's article, published in the April 1970 issue of Foreign Affairs, Dr. Gardner's article, published in the Washington Post on April 1, 1970, and two representative pieces of commentary on my proposal, one an article published in the April 12, 1970 issue of the Seattle Times and the other a radio editorial by Mr. Edward P. Morgan that was aired on April 16.

There being no objection the material was ordered to be printed in the RECORD, as follows:

[From Foreign Affairs, April 1970]

TO PREVENT A WORLD WASTELAND: A PROPOSAL

(By George F. Kennan)

Not even the most casual reader of the public prints of recent months and years could be unaware of the growing chorus of warnings from qualified scientists as to what industrial man is now doing—by overpopulation, by plundering of the earth's resources, and by a precipitate mechanization of many of life's processes—to the intactness of the natural environment on which his survival depends. "For the first time in the history of mankind," U.N. Secretary-General U Thant wrote, "there is arising a crisis of worldwide proportions involving developed and developing countries alike—the crisis of human environment. . . . It is becoming apparent that if current trends continue, the future of life on earth could be endangered."

Study and debate of these problems, and sometimes even governmental action, have been developing with cumulative intensity. This response has naturally concentrated largely on environmental deterioration as a national problem. It is normally within national boundaries that the first painful effects of deterioration are felt. It is at the national level that the main burden of legislation and administrative effort will admittedly have to be borne, if certain kinds of pollution and destruction are to be halted.

But it is also clear that the national perspective is not the only one from which this problem needs to be approached. Polluted air does not hang forever over the country in which the pollution occurs. The contamination of coastal waters does not long remain solely the problem of the nation in whose waters it has its origin. Wildlife—fish, fowl and animal—is no respecter of national boundaries, either in its movements or in the sources from which it draws its being. Indeed, the entire ecology of the planet is not arranged in national compartments; and whoever interferes seriously with it anywhere is doing something that is almost invariably of serious concern to the international community at large.

II

There is today in existence a considerable body of international arrangements, including several of great value, dealing with or affecting in one way or another the environmental problem. A formidable number of international organizations, some intergovernmental, some privately organized, some connected with the United Nations, some independently based, conduct programs in this field. As a rule, these programs are of a research nature. In most instances the relevance to problems of environmental conservation is incidental rather than central. While most of them are universal in focus, there are a few that approach the problem—and in some instances very usefully—at the regional level. Underlying a portion of these activities, and providing in some instances the legal basis for it, are a number of multilateral agreements that have environmental objectives of implications.

All this is useful and encouraging. But whether these activities are all that is needed is another question. Only a body fortified by extensive scientific expertise could accurately measure their adequacy to the needs at hand; and there is today, so far as the writer of these lines is aware, no body really charged with this purpose. In any case, it is evident that present activities have not halted or reversed environmental deterioration.

There is no reason to suppose, for example, that they will stop, or even reduce significantly at any early date, the massive spillage of oil into the high seas, now estimated at a million tons per annum and presumably steadily increasing. They will not assure the placing of reasonable limitations on the size of tankers or the enforcement of proper rules for the operation of these and other great vessels on the oceans. They will not, as they now stand, give humanity in general any protection against the misuse and plundering of the seabed for selfish national purposes. They will not put a stop to the proliferation of oil rigs in coastal and international waters, with all the dangers this presents for navigation and for the purity and ecological balance of the sea. They will not, except in a degree already recognized as quite unsatisfactory, protect the fish resources of the high seas from progressive destruction or depletion. They will not seriously reduce the volume of noxious effluence emerging from the River Rhine and being carried by the North Sea currents to other regions. They will not prevent the automobile gases and the sulphuric fumes from Central European industries from continuing to affect the fish life of both fresh and salt waters in the Baltic region. They will not stop the transoceanic jets from consuming—each of them—its reputed 35 tons of oxygen as it moves between Europe and America, and replacing them with its own particular brand of poisons. They will not ensure the observance of proper standards to govern radiological contamination, including disposal of radioactive wastes, in international media. They will not assure that all uses of outer space, as well as of the polar extremities of the planet, are properly controlled in the interests of humanity as a whole.

They may halt or alleviate one or another of these processes of deterioration in the course of time; but there is nothing today to give us the assurance that such efforts will be made promptly enough, or on a sufficient scale, to prevent a further general deterioration in man's environment, a deterioration of such seriousness as to be in many respects irreparable. Even to the nonscientific layman, the conclusion seems inescapable that if this objective is to be achieved, there will have to be an international effort much more urgent in its timing, bolder and more comprehensive in its conception and more vigorous in its execution that anything created or planned to date.

The General Assembly of the United Nations has not been indifferent to the gravity of this problem. Responding to the timely initiative and offer of hospitality of the Swedish government, it has authorized the Secretary-General to proceed at once with the preparation of a "United Nations Conference on the Human Environment," to be held at Stockholm in 1972. There is no question but that his undertaking, the initiation and pursuit of which does much credit to its authors, will be of major significance. But the conference will not be of an organizational nature; nor would it be suited to such a purpose. The critical study of existing vehicles for treating environmental questions internationally, as well as the creation of new organizational devices in this field, is a task that will have to be performed elsewhere. There is no reason why it should not be vigorously pursued even in advance of the Conference—indeed, it is desirable for a number of reasons that it should. As was stated in the Secretary-General's report, "the decision to convene the Conference, and the preparations for it, should in no way be used to postpone or to cancel already initiated or planned programs of research or cooperation, be they at the national, regional or international level. On the contrary, the problems involved are so numerous and so complicated that all efforts to deal with them immediately should be continued and intensified." It will be useful to attempt to picture the functions that need to be performed if this purpose is to be achieved.

III

The first of these would be to provide adequate facilities for the collection, storage, retrieval and dissemination of information on all aspects of the problem. This would involve not just assembling the results of scientific investigation but also keeping something in the nature of a register of all conservational activities at international, national, regional and even local levels across the globe. The task here is not one of conducting original research but rather of collecting and collating the results of research done elsewhere, and disposing of that information in a manner to make it readily available to people everywhere.

A second function would be to promote the coordination of research and operational activities which now deal with environmental problems at the international level. The number of these is already formidable. To take a parallel from the American experience, it was calculated, when the President's Cabinet Committee on Environmental Quality was recently established in the White House, that there were already over 80 programs related to environmental questions being pursued just within the executive branch of the Federal Government. If a similar census were to be taken in the international field, the number would scarcely be less. A recent listing of just those bodies concerned with the peaceful uses of outer space noted 17 entities.

These activities have grown up, for the most part, without central structure or concept. There is not today even any assurance, or any means of assuring, that they cover all the necessary fields. The disadvantages of such a situation—possibilities for confusion, duplication and omission—are obvious.

A third function would be to establish international standards in environmental matters and to extend advice and help to individual governments and to regional organizations in their efforts to meet these standards. It is not a question here of giving orders, exerting authority or telling governments what to do. The function is in part an advisory one and in part, no doubt, hortatory: a matter of establishing and explaining re-

quirements, of pressing governments to accept and enforce standards, of helping them to overcome domestic opposition. The uses of an international authority, when it comes to supporting and stiffening the efforts of governments to prevail against commercial, industrial and military interests within their respective jurisdictions, have already been demonstrated in other instances, as, for example, in the European Iron and Steel Community. They should not be underestimated here.

The fourth function that cries out for performance is from the standpoint of the possibilities in international (as opposed to national or regional) action, the most important of all. In contrast to all the others, it relates only to what might be called the great international media of human activity: the high seas, the stratosphere, outer space, perhaps also the Arctic and Antarctic—media which are subject to the sovereign authority of no national government. It consists simply of the establishment and enforcement of suitable rules for all human activities conducted in these media. It is a question not just of conservational considerations in the narrow sense but also of providing protection against the unfair exploitation of these media, above all the plundering or fouling or damaging of them, by individual governments or their nationals for selfish parochial purposes. Someone, after all, must decide at some point what is tolerable and permissible here and what is not; and since this is an area in which no sovereign government can make these determinations, some international authority must ultimately do so.

No one should be under any illusions about the far-reaching nature, and the gravity, of the problems that will have to be faced if this fourth function is to be effectively performed. There will have to be a determined attack on the problem of the "flags of convenience" for merchant shipping, and possibly their replacement by a single international regime and set of insignia for vessels plying the high seas. One will have to tackle on a hitherto unprecedented scale the thorny task of regulating industrialized fishing in international waters. There may have to be international patrol vessels charged with powers of enforcement in each of these fields. Systems of registration and licensing will have to be set up for uses made of the seabed as well as outer space; and one will have to confront, undaunted, the formidable array of interests already vested in the planting of oil rigs across the ocean floor.

For all of these purposes, the first step must be, of course, the achievement of adequate international consensus and authorization in the form of a multilateral treaty or convention. But for this there will have to be some suitable center of initiation, not to mention the instrument of enforcement which at a later point will have to come into the picture.

IV

What sort of authority holds out the greatest promise of assuring the effective performance of these functions?

It must first be noted that most of them are now being performed in some respects and to some degree by international organizations of one sort or another. The United Nations Secretariat does register (albeit ex post facto and apparently only for routine purposes) such launchings of objects into outer space as the great powers see fit to bring to its attention. The International Maritime Consultative Organization is concerned with the construction and equipping of ships carrying oil or other hazardous or noxious cargoes. The United Nations Scientific Committee on the Effects of Atomic Radiation does assemble data on radiation and radioactivity in the environment and give advice to individual governments concerning standards and tolerances in this field. The Organization for Economic Development and Cooperation has recently announced its intention to work out international tolerance levels for pollutants and to tax those of its members which exceed these limits.

This list could go on for pages. Dozens of organizations collect information. Several make recommendations to governments. Some even exercised a limited coordinating role in individual fields. They cover a significant portion of needs; and they obviously cannot be ignored when it comes to the examination of the best organizational response to the problem in question. On the contrary, any approach that failed to take advantage of the work they are already accomplishing, any approach in particular that attempted to duplicate their present activity or to centralize it completely, would assuredly fail. But even in their entirety, they do not cover the whole spectrum of the functions that need to be performed, as listed above; and those that they do perform they perform, for the most part, inadequately.

The question therefore poses itself: How should these organizations be reinforced or expanded? Do they provide in themselves an adequate basis for the necessary expansion of function and activity? Or do they need to be supplemented by new organizational forms, and, if so, of what nature? Is there need for a central organization to bring all these activities under a single hat? Should there be several centers? Or none at all?

There is a view—and it is based on impressive experience and authority—which holds that there is no need for any unifying effort in these various forms of activity, at least not beyond such limited coordinating influence as United Nations bodies are able to exercise today; that any effort in this direction might only further confuse an already confused pattern; and that the most promising line of attack is for governments to intensify their support of activities already in progress, letting them develop separately according to function, letting one set of organizations continue to occupy itself with radiology, another with other forms of air pollution, another with the ecology of fresh water lakes and rivers, another with wildlife, another with oil pollution on the high seas, another with the ocean bed, etc. This is, of course, in many ways the easiest course. Existing efforts, under this procedure, are not disturbed. Existing arrangements for international control and support are not placed in question. Established competencies, sometimes conquered and defended in past years with much effort, are not jeopardized.

But there are weighty considerations that argue against such a course. A number of the existing organizations, including particularly ones connected with the United Nations, have primarily a developmental focus; yet developmental considerations are frequently in conflict with the needs of environmental conservation. Others are staffed, at least in considerable part, by persons whose professional enthusiasm runs to the exploitation of the very natural media or resources whose protection is here at stake. Others are closely connected with commercial interests engaged in just this sort of exploitation.

There is a considerable body of opinion, particularly in U.N. circles, to the effect that it is a mistake to separate the function of conservation and protection of natural resources from that of the development and exploitation of these resources for productive purposes. According to this view, there should not be separate organizations concerned with conservation. Considerations of an environmental nature should rather be built from the outset into all those activities that are concerned with the productive exploitation of natural resources, so that environment needs would be met, so to speak, at the source.

This writer must respectfully disagree. This is an area in which exploitative motives cannot usefully be mingled with conservational ones. What is needed here is a watchdog; and the conscience and sense of duty of the watchdog must not be confused by contrary duties and undertakings. It may be boldly asserted that of the two purposes in question, conservation should come first. The principle should be that one exploits what a careful regard for the needs of conservation leaves to be exploited, not that one conserves what a liberal indulgence of the impulse to development leaves to be conserved.

V

What is lacking in the present pattern of approaches would seem to be precisely an organizational personality—part conscience, part voice—which has at heart the interests of no nation, no group of nations, no armed force, no political movement and no commercial concern, but simply those of mankind generally, together—and this is important—with man's animal and vegetable companions, who have no other advocate. If determinations are to be made of what is desirable from the standpoint of environmental conservation and protection, then they are going to have to proceed from a source which, in addition to including scientific competence and having qualified access to all necessary scientific data, sees things from a perspective which no national body—and no international one whose function is to reconcile conflicting national interests—can provide.

The process of compromise of national interests will of course have to take place at some point in every struggle against environmental deterioration at the international level. But it should not occur in the initial determination of what is and is not desirable from the conservational standpoint. This determination should at first be made, so to speak, in its pure form, or as near as one can get to it. It should serve as the point of departure for the long, wearisome, often thorny and frustrating, road of accommodation that will have to be traversed before it can be transformed into reality. But it should not itself be compromised at the outset.

Nor is this the only reason why one cannot make do with just the reinforcement of what now exists. If the present process of deterioration is to be halted, things are going to have to be done which will encounter formidable resistance from individual governments and powerful interests within individual countries. Only an entity that has great prestige, great authority and active support from centers of influence within the world's most powerful industrial and maritime nations will be able to make headway against such recalcitrance. One can conceive of a single organization's possessing such prestige and authority. It is harder to conceive of the purpose being served by some fifty to a hundred organizations, each active in a different field, all of them together presenting a pattern too complicated even to be understood or borne in mind by the world public.

All of this would seem to speak for the establishment of a single entity which, while not duplicating the work of existing organizations, could review this work from the standpoint of man's environmental needs as a whole, could make it its task to spot the inadequacies and identify the unfilled needs, could help to keep governments and leaders of opinion informed as to what ought to be done to meet minimum needs, could endeavor to assure that proper rules and standards are established wherever they are needed, and could, where desired, take a hand, vigorously and impartially, in the work of enforcement of rules and standards. It would not have to perform all these various functions itself—except perhaps where there was no one else to do so. Its responsibility should be rather to define their desirable dimensions and to exert itself, and use its influence with governments, to the end that all of them were performed by *someone*, and in an adequate way.

This entity, while naturally requiring the initiative of governments for its inception and their continued interest for its support, would have to be one in which the substantive decisions would be taken not on the basis of compromise among governmental representatives but on the basis of collaboration among scholars, scientists, experts, and perhaps also something in the nature of environmental statesmen and diplomats—but true international servants, bound by no national or political mandate, by nothing, in fact, other than dedication to the work at hand.

VI

It is impossible to picture an entity of this nature without considering, in the first instance, the possible source of its initiation and sponsorship in the international community. Who would take the lead in establishing it? From whom would it draw its financial resources? Who would constitute the ultimate sanction for its existence and its authority?

Obviously no single government could stand as the patron for such an agency. To seek, on the other hand, the sanction of the entire international community for its inception and activity would scarcely be a promising undertaking. Aside from the fact that this would then necessitate procedures practically indistinguishable from those of the United Nations itself, it would mean involving in the control and operation of the entity to be established a host of smaller and less developed countries which could contribute very little to the solution of the problems at hand. It would also involve formidable delays and heavy problems of decision making. Were this to be the course selected, one would do better to content one's self, throughout, with the existing facilities of the United Nations, which represent just about the limit of what can be accomplished on the basis of a universal, or near-universal, governmental consensus.

One is driven to the conclusion that if anything very constructive is going to be accomplished along this line, the interest and initiative will have to proceed from a relatively small group of governments; and logic suggests that these should be those of the leading industrial and maritime nations. It is they whose economies produce, in the main, the problem of pollution. It is they, again, who have the means to correct it. It is they, finally, who have the scientific and other resources to analyze the problem and to identify the most promising lines of solution. The devastation of the environment is primarily, though not exclusively, a function of advanced industrial and urban society. The correction of it is primarily a problem for the advanced nations.

One can conceive, then, by an act of the imagination, of a small group of advanced nations, consisting of roughly the ten leading industrial nations of the world, including communist and noncommunist ones alike, together (mainly for reasons of their maritime interests) with the Scandinavians and perhaps with the Benelux countries as a bloc, constituting themselves something in the nature of a club for the preservation of natural environment, and resolving, then, in that capacity, to bring into being an entity—let us call it initially an International Environmental Agency—charged with the performance, at least on their behalf, of the functions outlined above. It would not, however, be advisable that this agency should be staffed at the operating level with governmental representatives or that it should take its decisions on the basis of intergovernmental compromise. Its operating personnel should rather have to consist primarily of people of scientific or technical competence, and the less these were bound by disciplinary relationships to individual governments, the better.

One can imagine, therefore, that instead of staffing and controlling this agency themselves, the governments in question might well insert an intermediate layer of control by designating in each case a major scientific institution from within their jurisdiction—an Academy of Science or its equivalent—to act as a participating organization. These scientific bodies would then take over the responsibility for staffing the agency and supervising its operations.

It may be argued that under such an arrangement the participating institutions from communist countries would not be free agents, would enjoy no real independence, and would act only as stooges for their governments. As one who has had occasion both to see something of Russia and to disagree in public on a number of occasions with Soviet policies, the writer of this article is perhaps in a particularly favorable position to express his conviction that the Soviet Academy of Sciences, if called upon by its government to play a part in such an undertaking, would do so with an integrity and a seriousness of purpose worthy of its great scientific tradition, and would prove a rock of strength for the accomplishment of the objectives in question.

The agency would require, of course, financial support from the sponsoring governments. There would be no point in its establishment if one were not willing to support it generously and regularly; and one should not underestimate the amount of money that would be required. It might even run eventually to as much as the one-hundredth part of the military budgets of the respective governments for the same period of time, which would of course be a very substantial sum. Considering that the threat the agency would be designed to confront would be one by no means less menacing or less urgent than those to which the military appropriations are ostensibly devoted, this could hardly be called exorbitant.

The first task of such an agency should be to establish the outstanding needs for environmental conservation in the several fields, to review critically the work and the prospects of organizations now in existence, in relation to those needs, to identify the main lacunae, and to make recommendations as to how they should be filled. Such recommendations might envisage the concentration of one or another sort of activity in a single organization. They might envisage the strengthening of certain organizations, the merging of others. They might suggest the substance of new multilateral treaty provisions necessary to supply the foundation for this or that function of regulation and control. They might involve the re-allotment of existing responsibility for the development of standards, or the creation of new responsibilities of this nature. In short, a primary function of the Agency would be to advise governments, regional organizations and public opinion generally on what is needed to meet the environmental problem internationally, and to make recommendations as to how these needs can best be met. It would then of course be up to governments, the sponsoring ones and others as well, to implement these recommendations in whatever ways they might decide to agree on.

This, as will be seen, would be initially a process of study and advice. It would never be entirely completed; for situations would be constantly changing, new needs would be arising as old ones were met, the millennium would never be attained. But one could hope that eventually, as powers were accumulated and authority delegated under multilateral treaty arrangements, the Agency could gradually take over many of the functions of enforcement for such international arrangements as might require enforcement in the international media, and in this way expand its function and designation from that of an advisory agency to that of the single commanding International Environmental Authority which the international community is bound, at some point, to require.

All this, however, belongs to a later phase of development which it is idle to attempt to envisage in an enquiry so preliminary as this. In problems of international organizations, as in war, one does well to follow the Napoleonic principle: *"On s'engage et puis on voit."* To engage oneself means, in this instance, to bring into being the personality. The rest will follow.

VII

The above is intended only as a suggestion of certain lines along which international action in this field might usefully and hopefully proceed. In the mind of the writer, these considerations would have validity even if founded only on the strictest and narrowest view of the environmental factors alone. They need no extraneous arguments for their justification.

It would be wrong, however, to close this discussion without noting that no such undertaking could be without its political and psychological by-products. The energies and resources men have to devote to international activities are not unlimited. To the extent that a place can be found in their hopes and enthusiasms for constructive and hopeful efforts, these must proceed at least to some extent at the expense of the sterile, morbid and immensely dangerous preoccupations that are now pursued under the heading of national defense.

Not only the international scientific community but the world public at large has great need, at this dark hour, of a new and more promising focus of attention. The great communist and Western powers, particularly, have need to replace the waning fixations of the cold war with interests which they can pursue in common and to everyone's benefit. For young people the world over, some new opening of hope and creativity is becoming an urgent spiritual necessity. Could there, one wonders, be any undertaking better designed to meet these needs, to relieve the great convulsions of anxiety and ingrained hostility that now rack international society, than a major international effort to restore the hope, the beauty and the salubriousness of the natural environment in which man has his being?

[From the Washington (D.C.) Post, Apr. 1, 1970]

TOWARD A WORLD ECOLOGICAL SYSTEM

(By Richard N. Gardner)

Our new concern with the environment has focused so far on domestic problems. We have largely neglected the international dimension. But we are finally beginning a systematic look at our global environment in a new U.N. committee preparing for a world conference in Stockholm in 1972.

A U.N. response to the environmental challenge is long overdue. While some measures to deal with the environment can be taken by individual nations alone, there are resources that do not belong entirely to any nation—the sea, certain lakes and rivers, migratory animals—whose effective management requires international cooperation. Even management of the environment within the confines of a single nation may benefit from the sharing of national experience.

Moreover, we are finally beginning to recognize that how a nation deals with its national environment is no longer its own and nobody else's business. We are beginning to comprehend the unity of the world's ecological system, which means that all nations may be affected by how any one of them treats its air, water and land.

We are gradually awakening to the realization that all mankind depends on the same scarce and relatively shrinking resource pool, and therefore has an interest in the wise husbanding of resources wherever they may be located. And business firms around the world are beginning to argue that they cannot ac-

cept the additional costs of antipollution unless their overseas competitors do the same.

For all these reasons, the international community will be increasingly involved in environmental issues—even those that have hitherto been regarded as "domestic." Indeed, the most powerful impetus to world order may no longer be the threat of nuclear war, but rather the urgent necessity of new trans-national measures to protect the global environment.

President Kennedy asked the General Assembly in 1963 for a U.N. effort to deal with environmental problems—but nobody was listening. Although President Nixon mentioned the environment in his address to the Assembly last fall, his only proposals for international action have been made in NATO. As an organization of limited membership whose principal function is military defense, NATO is not well suited to be the centerpiece of our effort in this field.

The global environment concerns all nations, regardless of national, ideological, or racial differences. Some work on the environment can be usefully undertaken in regional agencies like OECD, but a universal problem needs a universal system of organizations to deal with it. The U.N. system, including its regional commissions and specialized agencies, is the nearest thing to a universal system we have. The Stockholm Conference provides an additional reason to make it more universal by admitting mainland China and divided states. At the very least, the U.N. should invite the Peking regime, the two Germanies, the two Vietnamese and the two Koreas to participate in the Stockholm meeting.

What exactly can the U.N. do about environmental problems? To begin with, it could undertake a massive program to educate the world's people, particularly political leaders, on the problems of the environment; could sponsor joint research efforts and studies; and could finance the training of specialists to handle different environmental problems.

It could organize a world-wide observation network, using observation satellites and other new technology, to monitor the world's environment on a continuing basis, and it could operate a service for the evaluation and dissemination of this information for all nations.

It could encourage the negotiation of international agreements providing for firm anti-pollution and other environmental commitments so that nations and industries accepting their environmental responsibilities suffer no competitive disadvantage in international trade.

It could ensure that multilateral aid programs are carried forward with due regard for their environmental implications, and could encourage the application of environmental safeguards in bilateral aid. (Downstream erosion from the Aswan Dam, we now discover, may wash away as much productive farm land as is opened by the new irrigation systems around Lake Nasser.)

Finally it could establish a U.N. Program for the World Heritage, including scenic, historic and natural resources now in danger of destruction whose survival is a matter of concern to all mankind. Obviously, each nation would be free to decide whether or not to nominate a property within its territory for inclusion in such a U.N. program. At the same time, the community of nations would be free to decide whether or not to accept it.

Countries whose resources were included in the program would gain the advantage of international advice and financial aid in their development with consequent benefits to their economies as a whole. And the world community would be in a position to protect unique and irreplaceable properties—Venice, Angkor Vat, some of the great wildlife reserves of Africa—in whose survival all mankind has a common interest.

[From the Seattle (Wash.) Times, Apr. 12, 1970]

MAGNUSON LAYING GROUNDWORK: GLOBAL EFFORT TO SAVE ENVIRONMENT URGED

(By William W. Prochnau)

WASHINGTON.—Senator Warren G. Magnuson will begin to lay the groundwork here this week for a cooperative international effort to lure the man-made ailments of the world's environment. Magnuson hopes to attract all the nations of the world—including such usually antisocial giants as Communist China—into the effort.

The senator believes that a world-wide approach is the only practical way to halt damage to the environment.

Soot from British factories falls on Swedish forests, he said, just as construction of a dam on the Nile can upset the ecology of the whole Mediterranean Sea.

Magnuson will propose the creation of a world environmental institute, a sort of nonpolitical clearinghouse of information that would be available to scientists throughout the world.

The senator is expected to make the proposal in a speech to geoscientists here this week. His next step will be to introduce a Senate resolution calling on the United States to lead the way in creating the institute.

Magnuson concedes that his plan still is in the dream stage. But he has seen similar dreams come true. He is the legislative founder of the National Cancer Institute and an early sponsor of the National Institute of Health.

Present-day attempts at international cooperation on environmental problems are too limited, Magnuson said. Even efforts by the United Nations exclude China, he observed.

The senator also pointed out that most world organizations are political in nature, whereas the environmental institute would be completely apolitical and would not attempt to arbitrate differences between nations.

Magnuson said that environmental problems are far from peculiar to the United States or even to the industrialized nations of the world.

India's Ganges River is more polluted than the Rhine, he said, and DDT is a greater threat in the tropics than it is in the United States. The Soviet Union, he added, has serious environmental problems.

"Pollutants from pulp mills are quickly destroying beautiful Lake Baikal and a recent accident in a chemical plant is known to have killed millions of fish in an important Soviet river," Magnuson said.

The senator suggested that perhaps the East and West could be stimulated to engage in an "environmental race"—if that is what it takes to move nations—as a replacement for the arms and space races.

One of the side benefits of the institute, he said, could be the beginning of a breakdown of political differences that so often hobble international cooperation.

Magnuson said it was important, perhaps even to man's survival, to begin to realize that pollution of the Yangtze River is as threatening as pollution of the Potomac.

Although Magnuson's hopes face obviously rugged obstacles, he will be in a key position to push his proposal. Magnuson is expected to be a senior member of the new joint committee on the environment which Congress will set up later this year.

His Washington colleague, Senator Henry M. Jackson, also will be on the committee and is a strong advocate of environmental protection.

Magnuson said he stands ready to meet personally with foreign leaders and scientists to promote creation of the institute.

The senator also said he would urge that the proposal be placed on the agenda of the World Environmental Conference scheduled by the United Nations in 1972. Nonmembers of the U.N., such as China, should be invited to the conference, he said.

AMERICAN INFORMATION REPORTS

From Washington this is Edward P. Morgan again for American Information Reports with the shape of one man's opinion. A look at the polluted price of caviar in a moment.

In case you haven't checked your grocery bill lately, the price of caviar has gone up. Reason: the Russians have been polluting with industrial waste and careless oil drilling the waters of the Caspian Sea and the Volga river, where the roe of the sturgeon play, so to speak.

Which brings us to Washington's senior Senator Warren C. Magnuson, who is certainly a Puget Sound salmon man, whatever his taste for sturgeon and its by-product, caviar.

One of the legislative leaders in the fight to preserve our environment, Magnuson told an international convention of scientists in the national capital tonight something they already know but which the public has given too little thought to, namely that pollution is an international matter which doesn't bother to go through customs as it crosses national boundaries.

Noting, for example, that pulp mill wastes are poisoning Russia's beautiful Lake Baikal, the senator warned that the cumulative pollution of the oceans may foreclose the survival of mankind. Magnuson suggests a positive approach to the problem. In a week or so he will introduce in the Senate a resolution urging creation of a World Environmental Institute, as a kind of living encyclopedia where all nations, including China, can get the latest correlated data on ecological problems and how to solve them—individually and collectively.

With a nod of recognition to the opening of the second round of U.S.-Soviet arms control talks in Vienna today, Senator Magnuson envisioned a new kind of contest to "replace the arms race and the space race: an 'environmental race' between East and West to see who will have the cleanest air and water and the quietest streets." He noted that while short-sighted bureaucrats may be needlessly compounding the Soviets' clean water problem, Moscow is ahead of us in battling noise pollution by banning traffic in the capital while most Muscovites are asleep.

If the Magnuson Environmental Institute becomes an alarm clock against international dangers of pollution, so much the better. . . .

This is Edward P. Morgan in Washington for American Information Reports with the shape of one man's opinion—a service of ABC News.

THE LAW WITH RESPECT TO LOWERING THE VOTING AGE

Mr. MAGNUSON. Mr. President, President Nixon recently sent a letter to House leaders explaining why he believes it is unconstitutional for Congress to lower the voting age by statute. Mr. Nixon believes that the Constitution generally leaves setting of voting qualifications to the States. While this statement is generally true, it has been strictly qualified by the Supreme Court.

Mr. Nixon does not mention that the Voting Rights Act as presently drafted also removes the literacy test and any durational residency requirement. These provisions certainly set voting qualifications, yet no one seriously doubts that

this is appropriate legislation under section 5 of the 14th amendment.

The proposition that Congress can lower the voting age to 18 is also supported by *Katzenbach* v. *Morgan*, 338 U.S. 641 (1966). The Supreme Court held that the power of Congress under section 5 of the 14th amendment to enact legislation prohibiting enforcement of a State law is not limited to situations where the State law is unconstitutional. The test as to the power of Congress in such a case is whether the Federal statute is appropriate legislation, that is, legislation plainly adopted to the end of implementing the 14th amendment and consistent with the Constitution.

In the Morgan case, the Supreme Court explicitly recognized that Congress had the power to legislate beyond the initial dictates of the equal protection clause especially in the area of suffrage.

The Supreme Court held that Congress has broad power to weigh the facts and make its own determination under the equal protection clause and that where there was a reasonable basis for legislation by Congress in this area, then the legislation will be sustained as the court stated in Morgan:

> Thus our task in this case is not to determine whether the New York literacy requirement . . . violated the Equal Protection Clause . . . Without regard to whether the Judiciary would find that the Equal Protection Clause itself nullifies New York's English literacy requirement . . . could Congress prohibit the enforcement of the State law by legislating under Section 5 of the 14th amendment? In answering this question, our task is limited to determining whether such legislation is, as required by Section 5, appropriate legislation to enforce the Equal Protection Clause.
>
> By including Section 5, the founders sought to grant to Congress, by a specific provision applicable to the 14th amendment, the same broad powers expressed in the Necessary and Proper Clause, Article I, Section 8, Clause 18.

In *Ex parte Virginia*, 100 U.S. 339, 345, decided 12 years after the adoption of the 14th amendment, the Supreme Court held that congressional power under section 5 had the same scope as that under the necessary and proper clause. The Court stated with regard to the section 5 power:

> Whatever legislation is appropriate, that is, adopted to carry the objectives the amendments have in view, whatever intends to enforce submission to the prohibitions they contain, and to secure to all persons enjoyment of perfect equality of civil rights and the equal protection of the laws against State denial or invasion, if not prohibited is brought within the domain of Congressional power.

The issue, therefore, before the Supreme Court in the test of congressional power to lower the voting age to 18 by statute, will be the same as it was in Morgan, that is, whether the congressional action is appropriate legislation under section 5 of the 14th amendment. In Morgan the Court held that section 4(a) of the Voting Rights Act was appropriate legislation to enforce the equal protection clause. The Court said:

> Section 4(e) . . . enables the Puerto Rican minority better to obtain perfect equality of civil rights and the equal protection of the laws. It was well within Congressional authority to say that the need of the Puerto Rican minority for the vote warranted Federal intrusion upon any State interests served by the English literacy requirements. It was for Congress . . . to assess and weigh the various conflicting considerations . . . It is not for us to review the Congressional resolution of these factors. It is enough that we be able to perceive a basis upon which the Congress might resolve the conflict as it did.

In other words, with respect to granting the vote to 18-year-olds, it is enough for Congress to weigh the justifications for and against extending the franchise to this age group. If Congress concludes that the justifications in favor of extending the franchise outweigh the justifications for restricting the franchise, then Congress has the power to change the law by statute and grant the vote to 18-year-olds, even though, in the absence of action by Congress, the Supreme Court would have upheld State laws setting the voting age at 21.

The next issue raised by President Nixon is that thousands of elections will be in doubt if the constitutional question is not settled in time by the Supreme Court. Apparently the President questions the length of time necessary to have a Supreme Court test of the 18-year-old provision. I am convinced that a judicial test would be achieved quite quickly.

For instance, the Voting Rights Act was passed on August 6, 1965. The Sureme Court passed on the merits on March 7, 1966, only 7 months after the voting rights measure was passed. In that case, *South Carolina* v. *Katzenbach*, 338 U.S. 301 (1966), South Carolina invoked the Supreme Court's original jurisdiction under article III, section 2, of the Constitution, seeking a declaration of unconstitutionality as to certain provisions of the Voting Rights Act of 1965 and an injunction against their enforcement by defendant, the Attorney General. South Carolina wanted to obtain a ruling prior to its primary elections in June 1966. The basic problem was the registration of voters under the Federal provisions.

Obviously this situation will present itself again when 18-year-olds try to register for local elections after this bill is passed. Although the Court is not compelled to exercise its original jurisdiction, *George* v. *Pennsylvania R. Co.*, 324 U.S. 439, 464 (1944), it probably would do so because of the compelling reasons stated by President Nixon and because of the importance of resolving this question quickly.

The Voting Rights Act also includes a provision giving district courts of the United States jurisdiction of proceedings instituted pursuant to the Voting Rights Act. Such proceedings shall be heard and determined by a court of three judges in accordance with the provisions of section 2284 of title 28 of the United States Code, and any appeal shall be to the Supreme Court. The provision also states:

> It shall be the duty of the judges designated to hear the case to assign the case for hearing and determination thereof, and to cause the case to be in every way expedited.

It is obvious to me that these two judicial procedures provide the possibility for quick judicial review. The President is obviously trying to defeat the Voting Rights Act by raising this false issue. The President, not Congress, will be responsible for the continued disillusionment of our young people if this measure is defeated.

I am convinced that the Senate has passed a constitutional provision, and that a rapid judicial test of this provision can be obtained.

Let us also remember, that if for some reason the Court did strike down this provision, that we can still use the constitutional amendment technique. I also feel that because of the President's recent action, that Congress should continue in its consideration of the 18-year-old Constitutional amendment. In this way we do not put all our eggs in one basket. I believe we should move courageously and immediately to give younger Americans the right to vote.

The Senate overwhelmingly passed this provision and has laid down a very strong and persuasive legislative history. The Court in South Carolina against Katzenbach, relied heavily on the "finding of fact" as made by Congress. Our young people are waiting to see if their leaders are responsive to change, let us show them that we in Congress, at least, recognize that the times are changing and that younger Americans do deserve the right to vote.

ECOLOGY MUST NOT OBSCURE OTHER ISSUES

Mr. MAGNUSON. Mr. President, one of the most constructive efforts during the recent Earth Day observance was the publication, by the University of Washington Daily, of an 80-page special "Environment Edition". Although much of the edition centered around the ecological crisis of the Puget Sound region, many articles dealt with general questions of population growth, technology, and the nature of industrial society here in the United States.

I wish that it were possible for me to have this entire special edition reprinted in the RECORD for the benefit of the Senate, but its great length makes that prohibitive. I will ask that one editorial be reprinted, however, because it represents one of the most thoughtful and constructive pieces of journalism that I have seen on the subject of environmental action.

The author of this editorial is Mr. Steve Weiner, who was the editor of the special environmental edition of the Daily. Mr. Weiner's editorial is significant because of its assertion that the response to the environmental crisis cannot be the dismantling of civilization. Instead, Mr. Weiner points out, we must make hard choices about the tradeoffs between environmental quality and other social needs. Our past shortsightedness in ignoring environmental factors must be replaced with a balanced view of civilization, not with a new shortsightedness that treats environmental causes to the exclusion of other human needs.

Mr. Weiner's editorial and the fine environment edition that he and the Daily staff have put together are testimony to the dedication and sophistication of today's youth on the environmental issue. We should welcome that commitment, but we should not suppose—as much of the press has done—that this commitment to ecology will

supplant earlier commitments to peace and social justice. Too many observers have mistakenly supposed that the environment issue will replace other issues; that the crusade for cleaner air and water will smother the many voices clamoring for peace in Vietnam, justice for the downtrodden, and food for the hungry.

The most fatal mistake that American society could make today would be to suppose that the environmental issue will co-opt the social conscience of America. For many millions of Americans, pollution does not override other criticisms of "the system": It merely adds one more damning indictment to an already long list. Rather than relieving us of the necessity for action on other social issues, the environment issue makes action on all fronts all the more imperative.

Perhaps the most dramatic evidence that pollution intensifies, rather than obscures the need for action on other social issues is another editorial about Earth Day. This one appeared in the May 1970 issue of Ramparts magazine. On the cover of the magazine is a picture of the Santa Barbara Bank of America in flames, with a caption taken from the editorial: "The students who burned the Bank of America in Santa Barbara may have done more toward saving the environment than all the teach-ins put together."

The point of the Ramparts editorial is simple and fallacious. Pollution is seen as an inevitable byproduct of a system that also produced the war in Vietnam, poverty, discrimination, hunger, and consumer exploitation. The solution to the environmental crisis, according to Ramparts, is revolution and the wholesale dismantling of contemporary civilization—the exact opposite of what Mr. Weiner advocates in his Daily editorial.

The fact that Ramparts describes a simplistic and incorrect view of our society does not answer the issue that produces such thinking. Some Americans simply will not overlook this country's other shortcomings while the environment battle rages. Instead of working to combat pollution, some will work to combat the system that produced it. The fact that technology and population, not capitalism, are the root causes of our environmental problems—and those of the Soviet Union—will not impress them.

The environmental issue, far from being a panacea for dissent, may be the straw that breaks the back of the social harmony remaining in this country if the type of thinking that produced the Ramparts editorial flourishes. The burden of salvaging and fostering social harmony, let us be clear, rests on the shoulders of all levels of government and "mainstream" America, not on the dissidents. That burden can be successfully borne only if there is action—not only on the environment issue, but on all sources of discontent in American society.

In summary, let me say that effective and immediate action on the environment issue is not a sufficient condition for renewed social harmony, but it is a necessary one. We cannot and must not delude ourselves by thinking that mere rhetoric will appease any person concerned with this issue. In a very real sense, the steps we take to restore the quality of the American environment may be the acid test of our political system.

At the same time, we must move with renewed determination to root out the other ills that plague this Nation. We must not become involved in a wider war in Asia; we must not retreat from, but must vigorously pursue, our efforts to achieve social justice; we must not enter a period of "benign neglect" for the poor, the black, and the hungry. We must prove that our Government is responsive to the needs of our whole society, not just the needs of those whose desire for stability outweighs their desire for justice.

If we can do this, if we can demonstrate the true responsiveness of our political system, we will emerge from this period of environmental awareness much stronger than we entered it. If we fail to do this, we will enter into a period of greater unrest and greater turmoil than the Nation has ever known.

I ask unanimous consent that the two editorials to which I have referred be printed in full at the conclusion of my remarks, and I urge the Senate to consider the alternatives that these editorials represent.

There being no objection the editorials were ordered to be printed in the RECORD, as follows:

MANKIND'S DILEMMA

You've heard the phrase before—"we are in the midst of an environmental crisis."

What exactly does that statement mean? Strictly speaking, using dictionary definitions, the sentence means this: The collective mass of human beings in this state, nation or world (depending on where the mind focuses) have reached a crucial and critical turning point in history, where the conditions surrounding and affecting human development are changing, for better or worse.

Contemporary environmentalists represented in part by contributors to this special section, would say the factors contributing to the total environment unequivocably are changing for the worse. Few, if any, of the experts in the various aspects of the field would say the situation is changing for the better.

Obviously, man is the cause of the environmental problems we are facing today. The basic question, yet unresolved by environmentalists, is this: are the problems we face today the result of human goals and aspirations evil in nature, or are they merely a flaw in an otherwise good history of productivity and success? In other words, is man guilty of some unspeakable crime caused by factors inherent within himself, or is he guilty only of oversight and insufficient awareness of the consequences of his actions?

WARPED VALUES

Nearly every environmentalist of the "new breed" says the philosophical roots of the question lie in warped or perverted value systems. Man, they say, has adopted a technological society, and in doing so, has perpetrated great rapes of the environment while drifting away from "human values." Some groups go so far as to preach the doctrine of "original environmental sin." For instance, a group that calls itself Zero Population recently said in its publication that "the fact is that people are pollution." Hence, simply by being alive, many environmentalists would say that man has made his first, and most basic mistake.

Consider "Zero Population's" statement. By saying ". . . people are pollution," the group is saying that merely by existing, man is making his habitat impure and unclean; simply because he exercises free will, he is defiling his surroundings. Man, this human group is saying, is evil.

This line of thought is prevalent to a greater or lesser degree in much environmental philosophy. Though the assertion is made that man is "unnatural," and hence, somewhat environmentally obscene, the question of the *nature* of man rarely is resolved in experts' writings. Therefore, some basic questions need to be asked.

1. By what standards should men measure their ideal "quality environment?"

Environmentalists seem to indicate that a quality environment is one that insures maximum opportunity for the growth of all species of life, within ecological limitations, *except man*. The assumption underlying much environmental writing seems to be that man has no requirements for a good life outside of satisfaction of normal bodily needs (food, water, air), and that he should be happy living an idyllic life "close to nature." The optimum environment, many experts seem to be saying, is one untouched by human hands.

But this type of situation obviously is impossible and unsuitable for human needs. Man, with free will and a conceptualizing brain, has other requirements that must be satisfied; to meet those requirements, he must "touch" his surroundings and alter the landscape. How, then, do man's needs affect a concept of environmental quality?

2. Most environmental philosophy seems to indicate that man has strayed from his "human values." Does this mean, as the experts seem to imply, that because man is a unique organism—possessing the power to severely alter his surroundings to meet his needs—his civilized values are necessarily inhuman? Must man first satisfy the needs of "nature" before the environmentalists approve of his actions, or can he function to meet his own needs as his primary priority, leaving, his surroundings somewhat intact secondarily? In other words, are human values, as environmentalists speak of them, truly human, or are they something else entirely?

3. Are man-made objects inherently evil, simply because man has made them? Are man-made objects "unnatural?" What does "natural," particularly in human terms, actually mean?

4. Many experts point to our economic system as the culprit in the environmental question. They say that man is a greedy, thoughtless organism, who stops at nothing in seeking personal power and dominance over his surroundings. Is this necessarily true? Is it even close to the truth?

Which is worth more, the knowledge that there is untouched wilderness just around the corner, or the ability of an individual to take that wilderness and fashion from it the articles that make human life comfortable and possible? Can some kind of balance between the needs of civilization and aesthetic qualities be struck in an industrialized society. Or is it better for men to return to their agrarian background, excluding technology and all it means because of what that sophisticated knowledge eventually might mean to the surrounding area?

The future of our civilization in palatable form may depend on extremely large numbers of individuals arriving at their own conclusions with respect to these and similar questions. The conditions affecting and surrounding human development are extremely complex; nature has interwoven its ecological web to the nth degree, and has done so without the aid of man. Man's industrial appearance on the scene, coupled with the complexities of his social systems, is the additional factor to be taken into account in environmental considerations.

The individual, the basic building block in our social system, is faced with the difficult task of establishing environmental priorities. To do so, he must reach down to the very foundations and nature of his existence. If the individual regards himself as inherently evil, and if that attitude spreads to or is mirrored by the society as a whole, mankind may already have committed a horrible form of ideological suicide. But if the individual is prepared to make the necessary differentiation between man and other forms of life, and is willing to provide for his needs (while remaining cognizant of environmental necessities and the effect of his actions on his surroundings), there may be a chance for survival.

To be sure, all "laws of nature" must be observed by humankind if it is to survive on earth. But, environmentally speaking, man has in many ways freed himself from natural limitations on his biological facts of life. For instance, men are not limited to areas of warm climates in seeking habitats; they roam about the earth where they please, scientifically able to sustain themselves in inhospitable areas. This is a fact that environmentalists should not forget in their considerations. Human beings control their surroundings; because the individual has free will and abstract mental ability, he is not subservient to nature as is, say, a timber wolf or a douglas fir.

CLASS BY THEMSELVES

Human beings, then, truly are in a class by themselves. Furthermore, man is the only type of organism that operates in a goal-directed manner with value systems—human value systems. Man for centuries has struggled to develop the technology and acquire the knowledge that has made him the master of his world.

Consequently the choice before him is not whether to reject his scientific and industrial gains in order to return to nature; that would appear to be completely out of character, as much in defiance of nature as it would be to try to create a rose that talked. Rather, our civilization and the individuals that comprise it must decide just how much they want to control some of the uglier and potentially harmful aspects of their society.

Rather than blindly rejecting human nature and declaring humanity intrinsically immoral, environmentalists would do well to remember that it is only because of human nature that most of us are alive and well at all. We have created a technological behemoth and material-hungry civilization that continues to grow and to support increasing numbers of persons; our crisis would appear to be one consisting not of rejection of the values that have gotten us this far, but one of realizing just how much of our output we should begin to manage carefully.

Human values, then, are peculiar to man, the environmental answers, when found, must be subservient to man as well.

EDITORIAL

The environment may well be the gut issue that can unify a polarized nation in the 1970's, writes Time magazine. The Hearst Press sees it as a movement "that could unite the generations." And the New York Times solemnly predicts that ecology "will replace Vietnam as the major issue with students."

The wishful thinking of a frightened Establishment? Perhaps. But the organizers of the officially-sanctioned April 22 Teach-In movement are doing their best to give life to the media's daydream about the co-optive potential of ecology. If they succeed, thousands of young people across the country will engage in a series of environmental extravaganzas, embellished to capture the excitement of the original Vietnam teach-ins, but structured to encourage the young to forsake the "less important issues" and enlist in a crusade to save the earth.

We think that any analogy between what is supposed to happen around April 22 and the organization of the Vietnam teach-ins is obscene. We think that the Environmental Teach-In appparatus is the first step in a con game that will do little more than abuse the environment even further. We do not think it will succeed.

The originators of the Vietnam teach-ins worked at great odds and against the lies and opposition of government, university administrations and the media. They raised their own money and had offices in student apartments or small storefronts. "Earth Day" came to life in the offices of Senator Gaylord Nelson, received blessings from Nixon's Department of Health, Education and Welfare, was funded by foundations, and has worked out of facilities lent by the Urban Coalition.

Vietnam protestors had to create their own reading lists, fact sheets and white papers; they had to work against the "expertise" of Southeast Asia scholars. The Environmental Teach-In comes pre-packaged; a well-paid and well-staffed national office sends local organizers an official brochure which avoids mentioning the social and economic environment with which Mother Nature has to cope. Friends of the Earth (FOE) provides, through Ballantine Books, a semiofficial "Environmental Handbook," which insists that saving the environment "transcends the other issues" and that we should in non-partisan fashion "support a man from any political party if he is a true Friend of the Earth."

Never mind if he's a racist. Don't worry about whether or not he supports American imperialism. This spring the Nixon Administrtaion is busy undoing 15 years of struggle for school integration; the police continue to murder black people in the streets; the American judicial system is disintegrating and, in the eyes of the State, every radical has become a conspirator; the war machine in Washington has made clear its intention to stay in Vietnam indefinitely and to spread its war to Laos. All this—and the Teach-In organizers want to banish everything but environment to the back pages of our minds. They must be blind, or perverse, or both.

How can anyone in this dark springtime believe kind words—about environment or anything else—from the men in power? Once we might have been able to believe that because a President had embraced the civil rights issue, apartheid in the Deep South was dead. But such illusions can hardly be sustained any longer. The Open Housing Act, the chief legislative victory of those years, finds use this season only for its "H. Rap Brown Amendment"—the interstate travel ban on which the Justice Department hung the Chicago 7.

Lyndon Johnson promised that We Shall Overcome. Now Richard Nixon promises to clean up America. Even TV's "Laugh-In" knows the punch-line: "If Nixon's War on Pollution is as successful as Johnson's War on Poverty, we're going to have an awful lot of dirty poor people around."

Haven't we learned after a decade of social struggle that major problems like Vietnam, Race, Poverty—now Environment—can't be packaged separately, each protected from contamination by "other issues"? Even the Kerner Commission realized that white racism was systematic, structural and linked to economic and social institutions. Even the most determined skeptic has now been shown by the Nixon Administration that the Vietnam war was no honest mistake, but the result of a long history of American expansion into Asia and a long-term policy of subjecting poor nations to the imperatives of American investors. To understand why Washington has persisted in its genocidal war in Indo-China, don't look at the politicians who come and go; look at the structures of power and interest that remain.

II

Threats to the environment are no different. At their source is the same division of society—those with power against those without: the corporations, which organize for their own benefit, against the people whom they organize destructively.

Look at the values which galvanize energies and allocate resources in the business system: pursuit of money, enrichment of self, the exploitation of man—and of nature—to generate still more money. Is it surprising that a system seeking to turn everything into gold ends up turning everything into garbage? The market is master. Business makes money meeting consumer demands; it makes even more money creating new demands. More money is spent on advertising and sales promotion in America, on planned obsolescence and consumer manipulation, than on all education—public and private, elementary school through the university. This is pollution of the mind, and it has its own costs. Some students estimate that socially useless, ecologically disastrous waste products make up nearly half of the Gross National Product. Nixon has already predicted a 50 per cent increase in the GNP by 1980, ostensibly to finance new priorities like environmental reform. It would be better if he had questioned how much waste the dynamic American economy will have to produce in the next decade simply to clean up the waste of past decades.

Others, like the organizers of the National Teach-In, tell us that it is in the interest even of the corporate rich to clean up the environment. If all their customers are asphyxiated by air pollution, explain these optimists, business (and businessmen) would expire as well. By this same logic, the military-industrial complex should bar the ABM from its cities, and the corporations, always eager to bring new consumers into the market, should make the war on poverty work. But no businessman, alone or with other businessmen, can change the tendencies of our ultimately ecocidal process unless he puts the system out of business. As long as society organizes production around the incentive to convert man's energies and nature's resources into profit, no planned equable, ecologically balanced system of production can ever exist. Teach-ins which fail to confront this fact of life do worse than teach nothing. They obstruct knowledge and stand in the way of a solution. They join the struggle on the side which permits them truly to say—not of mankind, but of themselves—"We have found the enemy and he is us."

Perhaps the Teach-Ins could teach better if, instead of their present brochure, they distributed a full-page ad from Fortune's special environment issue. Sponsored by the New York State Department of Commerce, the ad pictures Governor Nelson Rockefeller inviting businessmen to come grow with New York. The pitch is simple: "Personal property of manufacturers is completely exempt from taxation in New York . . . During the past eleven years, there has not been one single new business tax in New York." Nowhere does the ad mention New York's long series of new *non-business* taxes. In 11 years in office, Rocky has first imposed, then hiked a new state sales tax; quadrupled the cigarette tax; tripled the gasoline tax; and lowered the minimum income below which poor people are free of the state income tax. Businesses apparently aren't expected to care who subsidizes their growth. But the ad does want them to know that Governor Rockefeller, author of the "soak-the-poor program," considers "economic growth—a continuing expansion of the private economy—to be the indispensable ingredient of all progress."

Rockefeller doesn't say this only because he's a Rockefeller; he says it because he's Governor and every governor wants business to invest in his state. Private business accounts for 85 per cent of the GNP; it must be kept happy and expanding, or, short of revolution, there will be nothing for anyone at all. Regulation of business consequently can never be more than self-regulation, fed-

eral intervention into the business sector never more than federal intervention on behalf of the business sector.

But regulation is not the question. We simply don't need any more gross national product, any more unnecessary goods and factories. What we do need is a *redistribution* of existing real wealth, and a *reallocation* of society's resources. Everyone knows what this redistribution and reallocation should do; the crises of the last ten years have made it all so obvious: The poor must have adequate income, the cities must be rebuilt to fit human requirements, the environment must be de-polluted, the educational system must be vastly expanded, and social energies now poured into meaningless pursuits (like advertising and sales promotion) must be rechanneled into humanly edifying and creative activities.

We must, in short, junk the business system and its way of life, and create revolutionary new institutions to embody new goals—human and environmental.

All this sounds utopian. Well, utopias are relative. More utopian by far than revolution is the idea that the present society, dominated by business, can create lasting, meaningful reforms sufficient, for example, to permit mankind to survive the century.

III

At a recent "survival faire" in San Jose, California, ecology organizers bought a new car and buried it as a symbol of the task which they saw confronting ecology action groups. This was an indication of dangerous political naivete that must be overcome. To buy the car in the first place was to pay the criminal and strengthen him. But this act also pointed the finger of guilt at the consumer, who has only the choice of traveling to work by auto or walking 30 miles to work on the freeway. In opposition to this misdirected gesture of revolt, San Jose's black students angrily demanded that the car be raffled to provide defense funds for their brothers on trial. The blacks made their point very clearly.

In contrast to this Survival Faire, the week after the Conspiracy defendants were sentenced in Chicago, angry students razed the local branch of the Bank of America in Santa Barbara, California. The only bank in the Isla Vita youth ghetto, B of A had long treated young people as a class apart. It had opposed the grape strikers centered in Delano. It had supported, with branches in Saigon and Bangkok and with its leadership of the investment build-up in the Pacific, the American occupation of Southeast Asia. Two of its directors sit on the board of Union Oil, which had for so many months desecrated the once-beautiful beaches of Santa Barbara and destroyed their wildlife. Most important, as the branch manager explained to the press, it had been the major local symbol of capitalism and the business system.

Burning a bank is not the same as putting the banks and their system out of business. To do that, millions of people in this country will first have to wake up to the real source of their misery. The action in Santa Barbara, a community which has seen its environment destroyed by corporate greed, might spark that awakening. If it does, the students who burned the Bank of America in Santa Barbara will have done more to save the environment than all the Survival Faires and "Earth Day Teach-Ins" put together.

FACULTY AND STUDENTS PROTEST VIETNAM WAR

Mr. JAVITS. Mr. President, yesterday, two students from the school of engineering and science of New York University presented to me off the floor of the Senate a petition containing approximately 350 signatures constituting one-half of the faculty and one-third of the student body of the school of engineering and science, protesting the expansion of the Vietnam war into Cambodia, and the bombing of North Vietnam.

For I am informed that the petition was signed by the dean, John K. Ragazzini; the associate dean, Emanuel A. Salma; the provost, Mr. W. F. Hyde; the two assistant deans and the heads of various departments, all signatures were obtained in a period of 5 hours when the petition was circulating. This was the first time that the school of engineering and science had ever circulated such a petition for presentation to their elected representatives. In addition, the dean arranged for the school to send two student representatives to Washington to present the petition to the Congress.

I would like to tell the students and faculty of the school of engineering and science of New York University how much their efforts in expressing themselves this way are appreciated and how meaningful is the method they have chosen.

This petition shows that students and faculties have not given up on our representative system and still feel it is worthwhile to petition their Government. This is most admirable. We in the Senate must not let that effort be in vain and must listen and give serious consideration to the views expressed in the petition.

I ask unanimous consent that a letter of transmittal and the text of the petition together with selected signatures of faculty members be printed in the RECORD.

There being no objection the material was ordered to be printed in the RECORD, as follows:

NEW YORK UNIVERSITY,
Bronx, N.Y., May 5, 1970.

To whom it may concern:

This will introduce Messrs. Peter E. Lind, University Senator representing the School of Engineering and Science and Robert S. Schaps, President of the Undergraduate Engineering Council of the School of Engineering and Science.

They are carrying a petition signed by faculty and students of the School concerning the expansion of the conflict in South East Asia.

Sincerely,

JOHN R. RAGAZZINI,
Dean.

We, the faculty and students of the School of Engineering and Science of New York University, are appalled by the decision of the National administration to send troops to Cambodia and to reinstitute the bombing of North Vietnam.

We wish to express our strong disapproval and dissent to this action by peaceful means in the hope of impressing on the Administration our revulsion of this action.

To show our solidarity with students at New York University and other schools, we present this petition indicating our opposition and requesting immediate congressional action by our Senators and Representatives in Washington during the next few days.

John R. Ragazzini, Dean, School of Engineering and Science.

Emanuel A. Salma, Associate Dean, School of Engineering and Science.

Irwin Wlodan, Assistant Dean, School of Engineering and Science.

Benjamin Soldin, Electrical Engineering Department.

Ferdinand L. Singer, Professor of Mechanical Engineering.

Fred Landis, Professor of Mechanical Engineering.

L. A. Bernstein, Professor of Physics.

W. Tom Hyde, Provost.

Barry Wolf, Associate Professor, Mechanical Engineering.

Paul F. Hintermt, Sen. Res. Scientist.

Sylvan Ehrenfeld, Professor, Dept. of Industrial Engineer and Operation Research.

Leon H. Herbach, Professor of Operation Research.

ADDITIONAL STATEMENTS OF SENATORS

DEPARTMENT OF INTERIOR IGNORES CONGRESS AS WELL AS INDIANS

Mr. ERVIN. Mr. President, On April 11, 1968, over 2 years ago, the Indian bill of rights was signed into law. This legislation was the result of 7 years of painstaking investigation by the Constitutional Rights Subcommittee into one of the most difficult and neglected areas of American law. The reports from those years of hearings, research and field trips have documented the need for this law and indeed, for many other guarantees of the rights of the Indian where he deals with his tribal government, with the courts and with State and Federal Governments.

Consequently, the new law defined for Indians certain rights in their dealings with their tribes and placed limitations on the power of tribes over their people similar to the restrictions in the Bill of Rights to the United States Constitution. It also provided that States may assume criminal and civil jurisdiction in Indian country, but only with the consent of the Indian tribe concerned, and it imposed a 90-day time limit for the approval of contracts relating to the employment of legal counsel by Indians or Indian tribes.

The heart of the new law, however, may well rest in two provisions which together constitute a freedom-of-information law for the Indian. The first, title III, directs the Secretary of the Interior to recommend to the Congress a model code to govern the administration of justice by Courts of Indian Offenses on Indian reservations. The second, title VII, directs the Secretary of the Interior to compile, bring up to date, and publish certain materials relating to constitutional rights of Indians.

Mr. President, these sections of the act reflect a belief by Congress in the most basic tradition of Anglo-American jurisprudence, that due process of law in society depends on the foreknowledge by the citizen of what his rights and duties are under the law, and that whether that law flows from statute, rule, or court decision, he have access to the written word of the law. Congress recognized full well that the legal rights of Indians could not be protected unless the Indian and his counsel had knowledge of and access to the law that governs those rights. This truth was recognized and this basic right was secured in the 1968 law because subcommittee investigation had revealed the injustices suffered over many years in the name of secrecy,

lethargy, and ignorance about the laws governing Indian rights.

On December 24, 1969, more than 20 months after the passage of the act and 18 months beyond the due date of the model code, I wrote Secretary Hickel asking him when the model code would be submitted to Congress and what progress had been made in the preparation and compilation of the materials referred to in title VII.

On December 29, 1969, my letter was acknowledged and a prompt reply promised. On January 19, 1970, a letter was sent to me from the Office of the Solicitor, Department of the Interior, stating they had asked the Bureau of Indian Affairs for a report and would reply in detail as soon as the necessary information was received.

Mr. President, it has now been more than 4 months since my letter of December 24, 1969, and I have just now received a reply. It has taken these 4 months for the Department to prepare an answer which says that in 2 years they have not complied with the mandate of Congress.

Many problems face the Indian in our Nation today. If the Interior Department and the Bureau of Indian Affairs function in all matters affecting Indians in the same manner as they have so far in matters affecting the most basic constitutional and legal rights of Indians, it is apparent that the Department is not contributing to the solution of those complex problems. On the contrary, the Department adds to those problems when it fails to carry out its obligations, even those obligations expressly imposed upon it by Congress.

The things required of the Secretary of the Interior by the 1968 act are of fundamental importance because, if done they would make available in usable form information necessary for the Indians to know their rights and duties. It is disappointing to me that the Department has not even begun this important task. And it is distressing that it took more than 4 months for someone in the Department to tell the subcommittee that they have done nothing.

I note that a complaint has been filed in the U.S. District Court for the Northern District of California to enforce this congressional mandate. The complaint alleges that as a consequence of the failure of the Secretary of the Interior to comply with the act, the plaintiffs are less able to protect Indian rights, and that those plaintiffs who are law professors are unable to instruct others on how to protect Indian rights.

The fact that Congress directed the Department to do these things has apparently had little effect. The Department just does not seem to view the obligations of the 1968 act as particularly important. They tell us, that the delay in carrying out the obligations of titles III and VII has not significantly impaired the salutary effects of the substantive provisions of the act. They miss the point that titles III and VII lie at the heart of the matter. Congress did not pass this statute requiring the publication of Indian laws because it had nothing better to do with its time. It passed that law because congressional investigation had demonstrated that the Department had been inexcusably negligent in failing to carry out its responsibilities to the Indians. They seem to operate on the basis of business as usual, all things in good time. That is the spirit in which they applied themselves to my inquiry. And it took 4 months for a reply. At this rate, it will take years before the 1968 act is complied with, assuming the Department ever gets started.

In the answer to my December letter, we are told that the Department has no money and no personnel to do the job it was directed to do. The Department says it needs to find additional money for one attorney and one secretary. I cannot believe that these important projects have been stalled for 2 years because the Department cannot find $26,000 out of a total budget of $2,301,382,600.

Mr. President, we have heard much talk about a new day dawning for the first Americans. But those words are useless without action. In order for the constitutional rights of Indians to be more fully protected it is imperative that the Department of the Interior comply immediately with its constitutional duty to execute the law.

TRIBUTE TO HARRY S. TRUMAN BY SENATOR EDMUND MUSKIE IN INDEPENDENCE, MO.

Mr. SYMINGTON. Mr. President, on April 11, the 25th anniversary of President Truman's succession to the Presidency, the Senator from Maine (Mr. MUSKIE) delivered a truly magnificent speech in Mr. Truman's honor at the Harry S. Truman Library in Independence, Mo. Senator MUSKIE's speech vividly recalls the courage, decisiveness, and toughness which characterized Mr. Truman's entire Presidency during the difficult years immediately after World War II.

President Truman will be celebrating his birthday this coming Friday, May 8. It is a most appropriate time to recall the qualities that Senator MUSKIE described.

I ask unanimous consent that the text of his eloquent statement be inserted in the RECORD.

There being no objection, the remarks were ordered to be printed in the RECORD, as follows:

PRESIDENT TRUMAN—25 YEARS AFTER

(Remarks by Senator EDMUND S. MUSKIE)

When Dean Heller invited me to speak, today, he asked that I "talk from the viewpoint . . . of a public figure active today." I accept the compliment, because I hope those who doubt my public existence and question my activity will experience the same sense of wonder which came to Mr. Kaltenborn in 1948.

It is always an honor to be invited to pay tribute to one's heroes. I confess to my admiration for President Truman, but I would not want you to think that I am wholly uncritical of his record. I think he set a bad precedent when he made Presidential piano playing respectable.

Years ago, an out-of-stater struck up a conversation with an elderly native—an octogenarian—in one of our lovely little Maine towns. "I suppose you have lived in this town all your life?" he inquired. The old man replied, "Not yet!"

In the same spirit this group gathers here in Independence each year.

To pay tribute;

To draw inspiration;

To give continuity to those values, and qualities, and principles which are the mark of greatness in a man, and his community, and his country.

I remember that one of my first political acts after becoming a Democratic National Committeeman from the state of Maine in 1952 was to defend President Truman. The President had just visited the state, and had been subjected to an unwarranted and inhospitable attack by a Portland newspaper. I wrote a letter to the editor. The newspaper featured the letter and conceded, in an editorial, that it had been intemperate. I was pleased; the newspaper editor felt virtuous and I am sure the President—if he was aware of the exchange—smiled with the knowledge that history would be the final judge. Incidentally, it was also timely reassurance that a Democratic point of view, vigorously asserted, could be influential in Republican Maine.

President Truman is one of those fortunate public men who has lived to hear the vindication of history. And if he takes some pleasure in the knowledge that he confounded the doubters, we can rejoice with him.

Each of us comes to this occasion with his or her own memories of April 12, 1945, and the years which have followed. And each of us, I suspect, must confess to a change in perspective toward Harry S. Truman and the Presidency since that date.

Today's observance affords a singular opportunity to use that perspective, as President Truman would, to learn more about ourselves, our country, and the qualities the times require of us.

The world of that dark Thursday afternoon in 1945 was one caught between hope and chaos. The President to whom the nation and the world had looked for twelve years for leadership, was dead. A terrible world war was approaching its end, and in its wake we could see a world order far different from that we had known before. No longer were there several major powers in Europe. Both the victors and the vanquished had been decimated by the war. In Asia, Japan was defeated and China splintered. In the world there were now only two major powers—the United States and the Soviet Union—about to confront each other in a new type of war—a cold war, generated by Soviet dreams of expansion.

What would this mean—for man—and his hopes and dreams—for a better world and a better life?

At home, a nation weary of war desired a speedy return to peace and the comforts war had denied us. A few saw the difficult problems of reconversion from a war economy to peace, but most were oblivious to the backlog of crisis the President would face at home.

What sort of man was this who would now preside over our effort to influence the shape of an uncertain and perilous future?

Much of his background was humble. He had been reared in a small town in middle America. He had no formal education beyond high school. He had worked as a timekeeper for a railroad, in the mail room of a newspaper, as a bank clerk, as a farmer. He had been a small businessman, a soldier and a county judge. He had experienced the rough and tumble of local and state politics, and risen through the ranks. At one phase of his development he might have been classed—if I may coin a phrase—as a member of the "Silent Majority."

And so there were questions about the quality of the new leadership in the White House.

Walter Lippman comforted himself by writing that "The genius of a good leader is to leave behind him a situation which common sense, without the grace of genius, can

deal with successfully." He was wrong, both with respect to the situation and the quality of the new President.

Harry Truman did have an average American background, but he was not an ordinary man. He had zest, vitality and energy that were the marvel of those with whom he worked. He had a rare capacity for decision and administration. He had the judgment to realize what principles in American life were worth preserving and the courage to fight for those principles.

His capacity for decision may be the most fabled of his attributes.

He made it clear—in a way which was never fully understood before by grassroots Americans—that the White House was primarily a place where decisions are made—tough, potentially final decisions which cannot be avoided and which carry awesome implications for life in our country and on our planet.

And our people understood—more clearly than before—that such decisions should be made by men of capacity, understanding, and courage—who understand that a President must lead his people in the direction indicated by their best instincts and traditions.

And they came to the realization that Harry Truman was such a President—and they have given him his place in history.

There followed the many bold—often spectacularly successful decisions of the Truman Era. Dean Acheson has described them:

"The 1947 assumption of responsibility in the Eastern Mediterranean, the 1948 Grandeur of the Marshall Plan, the response to the Blockade of Berlin, the NATO defense of Europe in 1949, and the intervention in Korea in 1950—all those constituted expanded action in truly heroic mold. All of them were dangerous. All of them required rare capacity to decide and act."

This was the leadership of a man who saw the world as it was—the need for new and unprecedented action—ranging far beyond any earlier concept of American responsibility in the world.

This man of ordinary background stepped out into the unknown—leading his people—unhesitatingly—clear-eyed—and wisely.

There have been a number of analyses of the Truman decision-making process. Dean Acheson, for example, in his latest book, "Present at the Creation," credits much of the President's capacity for leadership and decision to two qualities. First of all, the President had, Mr. Acheson tells us, a magnificent vitality and energy that allowed him to assimilate and understand a prodigious amount of material. Secondly, he had a passion for orderly procedure and a superb administrative ability which had been nurtured by his experience in local government.

Acheson reports that the President employed a brand of the adversary process, adapted from the law, and that, in keeping with another venerable legal tradition, he reduced all major decisions to writing.

One of the most delightful accounts of Truman's decision-making process, however, came from Mr. Truman, himself, reportedly in a question and answer session at the University of Virginia in 1960.

The question from the floor was: "Mr. Truman, how did you go about making a decision?"

Mr. Truman's answer was reported as follows: "I asked the members of my staff concerned to submit their recommendations to me in writing. In the evening I read the staff proposals. Then I went to bed and slept on it. In the morning I made a decision."

The next question was: "What happened if you made a mistake?"

The answer: "I made another decision."

Decisiveness is a Truman characteristic. It is an important characteristic of leadership. As a quality, it can inspire confidence and trust in a people—impel them to risk change, to consider new values, to assume new responsibilities. But there must be more. The decisionmaker must also be guided by historic principles and dedicated to their implementation. If the Declaration of Independence and the Constitution mean anything, it is that the *goals* of a Democratic Society are important, that they should be remembered, and that our leaders should lead us toward them. Nowhere is this more important than in the case of Civil Rights.

From the vantage point of the Seventies, many of us tend to think of the 1954 decision in *Brown* v. *The Board of Education* as the watershed for civil rights in the nation. It was a tremendously important decision in the evolution of our country, but it followed by some years Harry Truman's drive to promote equality of opportunity. As President Truman put it in his characteristically blunt language: "The top dog in a world which is over half colored ought to clean his own house."

I doubt that this man from Missouri gave a moment's thought to a Southern strategy.

He saw the United States as a divided country—divided by barriers that were unhealthy, unwholesome, and unAmerican. It was his responsibility to try to make it whole.

He supported his sentiments by action. He insisted, over considerable objection, that the armed services be integrated. He established a committee on Civil Rights to investigate the need for Civil Rights legislation and upon the recommendation of the committee, he asked the Congress:

To establish a permanent commission on Civil Rights, Joint Congressional Committee on Civil Rights and a Civil Rights Division in the Department of Justice;

To strengthen existing Civil Rights laws and laws protecting the right to vote;

To provide for Federal protection against lynching;

To establish a Fair Employment Practices Commission;

To provide for Home Rule and sufferage in Presidential elections for the District of Columbia.

At his insistence—with a full appreciation of the political risks involved—these proposals were also contained in the Democratic Party's Platform in the 1948 elections. He preferred to take risks that could lead to a united country to the risk of an increasingly divided country.

The result is well known. The Dixiecrats left the Democratic Party. In the perilously close election that followed, their defection cost the President four states from the supposedly "Solid South" that otherwise would have been in his camp. Mr. Truman knew he could have avoided this result. But he refused to compromise on principle. As he wrote in his memoirs:

"I believed in the principles these platforms advanced . . . I was perfectly willing to risk defeat in 1948 by sticking to the Civil-Rights plank in my platform."

Devotion to principle means a willingness to risk such defeat. It is also the only way to appeal to the best in men. It is a quality we need now—at a time when the country is even more divided than it was in 1948. It is a quality we must produce in our leaders, if we are to produce it in our people.

There is another example of that Truman blend of decisiveness, judgment and dedication to principle which has relevance today.

A principle in which Mr. Truman believed deeply—that the civilian government must at all times exercise ultimate control over the military.

It was one thing to state the principle. It was another to relieve General MacArthur of his command. The General enjoyed immense popularity at home. It was clear that MacArthur's removal could precipitate the biggest fight of his administration. And it did.

But Mr. Truman believed he had no other choice. As he wrote in his memoirs:

"If there is one basic element in our Constitution, it is civilian control of the military. Policies are to be made by the elected political officials, not by Generals or Admirals."

This was a deep-seated instinct, rooted in the experience of mankind. If any society is to climb toward the goals which are humanity's highest aspirations, the military response must be subordinated to non-military values.

Whenever man feels insecure—whenever he feels beleaguered by the hostile manifestations of frustrated hopes and dreams—he seeks security.

What may constitute security at a given time—in given circumstances can be a terrible judgment to make—requiring a sensitive and balanced appreciation of the nature of the threat and of the consequences of the available courses of action.

The principle of civilian domination over the military must be regarded as something more than a transient response to the experience of the American revolution.

It is a fundamental principle—enshrined in our Constitution—related intimately to the survival of freedom and the kind of lives our children will live.

It is a principle in which Mr. Truman believed—and for which he fought at great political cost to himself and to other causes he would have liked to advance.

It is a principle which has application to several difficult national decisions with which we are confronted today:

Our policies in Southeast Asia:

The dangers of the Nuclear Arms Race and the initiatives we should take to avoid them;

Our budgetary priorities;

The "Voluntary" Army.

In each case, which course offers the real security?

What values—military or nonmilitary—should predominate in shaping our answer?

Mr. Truman was a man of his time—keenly aware that his was the responsibility for dealing with problems in the "here and now."

He was enabled to do so by the personal qualities which we all know so well—and because he knew the American experience—and the principles and values which must be projected into the future, if the American experience is to survive.

All who observed the Truman years in the White House were often frustrated by the political "mistakes" he made.

The man in the White House is always the "Master Politician"—shrewd in the use of maneuver and expediency to reduce the political cost of his policies and to stretch out his political bankroll.

The perspective of time tells us that President Truman believed his political bankroll to be a resource—to be spent without stint in the country's best interest.

Time also tells us that the judgment of history is more likely to vindicate such a view of the Presidency that any other. Political sagacity is not enough to make a wise President. Energy is not enough to give him a forceful Administration. Mastery of the arts of communication is not enough to win the hearts of his people. Knowledge of the principles of public Administration is not enough to command the loyalty of public servants.

Leadership consists in appealing to the best that is in a people, not in exploiting their differences and weaknesses. And that leadership can come only from a man who insists on the best from himself, by knowing what history has to tell us, by understanding what is in the hearts of his people, and by exercising judgment, courage and dedication to principle in the office of the Presidency.

Undoubtedly Dean Acheson had these qualities in mind in dedicating his book to President Truman, saluting him as "The Captain with the mighty heart."

And so he was and is.

TRAGEDY AT KENT STATE

Mr. YOUNG of Ohio. Mr. President, the entire Nation was shocked over the recent mindless and tragic slaying of four students at Kent State University, at Kent, Ohio, by members of the Ohio National Guard. Assessing blame for this tragedy cannot bring these two young men and two young women back to life, nor right the horrible wrong that was perpetrated at Kent on Monday. Those who were guilty must be found and tried. However, if these slayings are to have any meaning at all—if these young people are not to have died in vain—then it behooves all Americans to search their souls for the answer as to why it occurred and to how similar incidents can be avoided in the future.

Mr. President, no excuse can be given for the killing of these young men and women by National Guardsmen. Their taking of human life has no justification. National Guardsmen, with little training and lacking adequate riot control training, should not have been permitted to have rifles loaded with live ammunition and fixed bayonets on a university campus. Those who ordered this action must accept the responsibility for its consequences.

Mr. President, on a much broader scale, in recent months there has been taking place an ominous polarization of our society. The middle ground between those of opposing views is rapidly disappearing. In many cases it is no longer possible for Americans of different viewpoints on any issue to resolve their differences peacefully. Instead, fear has set in—a cancerous fear that threatens to destroy the very fabric of our society. With this fear comes mistrust of one another, a questioning of honest motives and unfortunately in some cases, deep hatred.

The stage was set for the recent violence at Kent State and other colleges throughout the land by President Nixon's decision to invade Cambodia without a formal declaration of war by the Congress, and thereby to widen our involvement in that immoral, undeclared war in Indochina. This, despite his repeated promises to end the war in Vietnam.

Is it any wonder that the disillusioned young people of the Nation, after receiving promise after promise for the last year and a half that we would withdraw from Vietnam, reacted violently to the President's expansion of the war into Cambodia. Then, to compound that tragic error President Nixon publicly referred to student protesters as "bums" and contrasted them with young men fighting in Vietnam. The President made it clear last November that he would not be moved by massive, nonviolent protest. When hundreds of thousands of Americans marched peacefully in Washington to demonstrate their opposition to the war, President Nixon commented only that it was a nice day to watch a football game.

Mr. President, the four young men and women who were killed at Kent State Monday were not themselves engaging in any violent or unlawful demonstrations. They were not radicals. They were not bums. If similar tragedies are to be avoided in the future, the cause for this tragedy must be looked into.

President Nixon's response through an intermediary revealed the deplorable lack of insight on his part of the conditions that gave rise to the massacre. The President showed no compassion or understanding over what happened. His statement that the deaths "should remind us all once again that when dissent turns to violence it invites tragedy" was coldly unfeeling. The context in which it was made would lead Americans to place the blame on the dead students instead of those who murdered them. The President's response only added to the alienation deeply felt by millions of young Americans. It drove many moderate students to take the side of those who advocate violence.

What happened at Kent State and is now happening on campuses throughout the land has grave portent for the future of the Nation. It is tragic that the President does not realize this. The bonds of trust and confidence which must exist between the people and their Government have been strained to the breaking point in recent years. Events of recent days threaten to destroy them. Nothing we can do will restore the lives of the students slain at Kent State. However, action must be taken from the very highest level of government on down to prevent a similar occurrence in the future.

Mr. President, I am today introducing in the Senate a resolution calling for the establishment of a select Senate committee to investigate the Kent State killings. This committee would be composed of the two Senators from Ohio, two members of the Armed Services Committee to be selected by the chairman, and two members of the Labor and Public Welfare Committees to be selected by the chairman.

Many important questions remain to be answered by this committee. Who gave the guardsmen the order to carry live ammunition in their guns? Who, if anyone, gave guardsmen the right to fire at individual demonstrators? What kind of training did these young men have in controlling civil disorders? Could local and State policemen have done the job without help from the National Guard?

More important perhaps are broader questions. May students on a university engage in nonviolent protest without being repressed by police or injured by tear gas hurled at them in canisters? Must damage to property be stopped by the use of loaded rifles in the possession of untrained trigger happy National Guardsmen? Can any action be taken on a national level that would make violent protest unnecessary?

Mr. President, it is imperative that these questions be considered without delay. They must be given a thorough and impartial study that cannot be achieved through self-investigation by the National Guard or State police.

HELP FROM MICHIGAN FOR VIETNAM ORPHANS

Mr. GRIFFIN. Mr. President, in all wars the innocent, the women, the children, and the aged invariably suffer. The war in Vietnam is no exception.

But a Michigan soldier who served a tour of duty in the war decided to do something about the plight of scores of children orphaned by the war. And through a Detroit newspaper, the Free Press, he got plenty of help from back home.

Mr. President, I submit that the kind of compassionate concern demonstrated by former Sgt. Jack Hanley, of Birmingham, Mich., is more the hallmark of the vast majority of our American fighting men than is the ugly picture painted by allegations growing out of the incident at Mylai.

The Free Press published a followup article on Sergeant Hanley's efforts on Thursday, April 23, 1970.

I ask unanimous consent that the article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

HOW ONE DETROITER'S PLEA BROUGHT MIRACLES IN VIETNAM

(By Jean Sprain Wilson)

You have undoubtedly heard of My Lai and as an American you are ashamed. But have you heard of the hamlet of An Khe and Sgt. Jack Hanley of Birmingham, Mich.? As a Detroiter, it might make you proud.

It will especially if you are one of the hundreds of Free Press readers who helped him perform his miracles in Vietnam.

This story began last fall when the sergeant broke it gently to his parents, the John Hanleys, Sr., 835 Westwood Dr., that he was postponing his Army discharge because 63 hungry, ragged orphans in that village needed him.

Before returning to Vietnam he talked a great deal to everyone about his sickly, toyless, bookless urchins, so much so that the Pontiac Jaycee Woman's Auxiliary in Pontiac and 12 other Detroit area chapters decided to collect and send him the articles which he said they needed.

Then the Free Press wrote about Jack and his kids. As a result the Jaycettes, as the auxiliaries are called, were inundated by gifts from readers in Detroit area and the whole Midwest. Seven tons of useful goods were shipped out of the Pontiac post office, a record mailing, according to the Postmaster General.

What happened half-way across the world when Sgt. Jack's "mail" caught up with him was not fully known until he came home recently. This is what he says:

"The director of the high school at An Khe and those orphans were so delighted at having books at last that they built a library and a school where English is now being taught. I taught English there myself for a while.

"We didn't have enough vehicles, so the New Zealand Red Cross distributed two tons of food and clothing for us to the primitive Vietnamese in the outlying districts. They are the Aborigines of the country who still hunt with crossbow and spears and who have suffered terribly during the war.

"Just before I came home 69 Viet Cong were smoked out of where they had been hiding since 1967. These were frightened children and old people. They were so starved their rib cages showed and their stomachs protruded. We gave them eight boxes of clothing, food, and toys.

"You should have seen the change in them. They were running around and hollering with joy. Even the old ones were down on the ground winding the toys and pushing them around.

"Then we made up propaganda leaflets and dropped them and 600 more came out."

So it was that, instead of bringing joy and better health to 63 orphans, the whole village of An Khe, another orphanage at Phoc Thien, and thousands of Vietnamese in the hinterlands benefited from Detroit's generosity.

Sgt. Hanley, in calling to thank the Free Press for its part the other day, estimated that some 30,000 Vietnamese have had a better life—indeed life itself in some cases—because Detroiters had a heart.

The good-looking 24-year-old suburbanite who used to spend his days off working with inner city youths, lost his heart to the people of An Khe when he was transferred there on civil pacification duties after suffering a partial hearing loss while in the combat lines. Sgt. Hanley's "family" was later expanded to include another orphanage, 12 schools, a leprosarium, and "a lot of Viet Cong."

But the Army, deciding that Sgt. Jack's stint in Vietnam had been long enough, has transferred him to Fort Meade, Md. until his discharge in July. Now on leave in Birmingham, this is the last time he can call it "home." His parents are moving this week to Boca Raton, Fla.

"I was kind of sorry to leave my kids," he says, referring to the An Khe orphanage where he has become Santa Claus. "I'll keep in touch by writing some of them."

That will keep the mailman busy over there, but not nearly as busy as the great day he received 278 cartons from you . . . and you . . . and you.

VIOLENCE AND COUNTERVIOLENCE DESTROY FREEDOM

Mr. RANDOLPH. Mr. President, the right of dissent and protest must not be denied any American—including students. The same is true of the right of peaceful assembly.

But mob rule, arson, or other types of destruction of property—whether on a college or university campus or off it—must not be permitted and cannot be tolerated.

The tragic deaths of four youths at Kent State University emphasize the growing division among our young people, law enforcement officials, college administrators, and our Government. It appears as though troops and other law enforcement officials could have dispersed that on-campus overcrowding by other methods than resorting to automatic weapons.

Confrontations between students and police and/or National Guard troops must not only be discouraged; they must be avoided. Reason and reform must replace revolt if academic freedom is to be preserved. There must come understanding as well as necessary discipline. We must have less name-calling.

Cooler heads must prevail on the campuses, from the office of the president to the freshman classroom or dormitory—in the cities, from the mayor to the police recruit—in the State house, from the Governor to the National Guard private—in the Nation, from the White House to the guard at the gates.

These admonitions are difficult to bring to fruition unless and until there are many changes in attitudes of many, many people throughout the country.

We must determine areas of agreement. We must stop being so quick in disagreeing in so many areas of national concern. If there is to be consensus on any one major aspect, I hope it would be that no responsible person condones violence and no responsible person should condone unwarranted counterviolence.

Too much blood is being spilled in too many conflicts—and too many human lives are being lost—both abroad and at home.

As we criticize the mistakes of youth, we of the so-called establishment must admit also our errors in having for too long placed too much stress on materialism.

Human compassion, human dignity, and respect for human life can, I believe, be strengthened even now in this era of malice, polarization of viewpoints, and terror.

MAYOR DALEY, FORMER PRESIDENT JOHNSON RALLY BEHIND PRESIDENT NIXON

Mr. SMITH of Illinois. Mr. President, I ask unanimous consent that two newspaper articles be printed in the RECORD at the close of my remarks. The first is a Chicago Tribune report on a statement by the leader of the Democratic Party in Illinois, Mayor Richard Daley, in which the mayor expressed his support for the action taken by our President last Thursday evening. The other article, published in the Chicago Sun Times, reports on the support given our President in his hour of crisis by former President Lyndon B. Johnson at a Democratic fundraising dinner in Chicago Friday evening.

As U.S. Senator from the State of Illinois, I want to express my personal appreciation to these leaders of the opposition party for their recognition that our Nation must remain united if we are to succeed in Vietnam or anywhere else.

I can also report that the sentiments so eloquently expressed by Mayor Daley and Former President Johnson have found broad acceptance among most other leaders of the Democratic Party in Illinois.

It is most unfortunate that a few Illinois Democrats have seen fit to issue statements over the weekend which tend to divide our people, rather than unite them—all for the sake of partisan advantage.

These pseudo-experts, whose knowledge of foreign affairs is confined to reading certain liberal columnists, would have made the same choice our President made in Vietnam, if they had had the responsibility—and they know it.

Instead of doing the truly responsible thing—supporting our President in what they must know was the only acceptable alternative he had—they have chosen to take the low road of partisan politics.

I only wish there were more Democrats like Mayor Daley, willing to put aside partisanship when the safety of our boys in Vietnam is at stake.

The PRESIDING OFFICER. Is there objection to the unanimous consent request of the Senator from Illinois?

There being no objections, the articles were ordered to be printed in the RECORD, as follows:

DALEY URGES PUBLIC: BACK NIXON ON WAR

Mayor Daley called yesterday for public support of President Nixon on his decision to send troops into Cambodia, and said the President made his decision "on the best advice he could get."

"I am not familiar and you are not familiar with all the information available to the President," Daley told reporters. "We can't be Monday morning quarterbacks.

"I may be old-fashioned, but I'm still one who feels we should support our President and he is the President of all the people. We should give him support and hope and pray his decisions are right."

NOT A POLITICAL ISSUE

Asked if he thought the decision would be an issue in the November elections, Daley said:

"I said it under (former President) Johnson, and I repeat it. I don't think our foreign policy should become an issue in an election. Issues should end at the waterline of our country. I feel strongly that we need unity, cohesiveness, and togetherness of our people as it affects our foreign policy."

A reporter noted that some members of Nixon's own party disagree with his decision. and said these people "have access to information we don't have here."

DECISION TOOK COURAGE

"I'm just a local fellow," replied the mayor. "I'm not a senator or a congressman."

Asked if he thought Nixon's decision required political courage, Daley said: "I think it did. He did what he thought was right."

Daley was asked if he agreed with the President that this move would be a short term action.

"From what he said, I think it is about like President Johnson on withdrawal of troops," said Daley. "To analyze it, you couldn't withdraw them with guns and weapons at their backs. Only a few miles from Saigon (across the border in Cambodia) was this great concentration of Viet Cong troops and supplies. This has been going on for many years."

[From the Chicago Sun-Times, May 2, 1970]

BACK NIXON, LBJ URGES THE NATION AT DINNER HERE

(By John Dreiske)

Former President Lyndon B. Johnson Friday night asked that "all who love freedom" give President Nixon support in the Southeast Asia crisis.

Speaking of Mr. Nixon's ordering of U.S. troops into Cambodia, Mr. Johnson told 7,000 Democrats attending a $100-a-plate dinner in the Conrad Hilton Hotel:

"I hope our President's voice is not drowned out by those other voices who are without knowledge and the responsibility to make the agonizing decision."

It was Mr. Johnson's first major policy speech since he announced on March 31, 1968 near the end of his first full term that he would not run again.

Mr. Johnson told his audience that "our problem is getting Hanoi to listen."

Mr. Johnson called repeatedly, in his address for a united America. He asked for the nation to unite behind President Nixon.

"I hope that he (Mr. Nixon) and all others under his command have the support of all who love freedom," Mr. Johnson said.

"He does have my support. Because I understand. I have been there."

Mr. Johnson went on to say that "we cannot draw into a shell," and what is happening in Asian cities and countries "happens to us."

In contrast with what the President said, one prominent Democrat, Ald. Ralph H. Metcalfe (3d), nominee for the 3d District

seat in Congress, said, "Nixon seems hellbent on escalating the war in Cambodia."

Earlier in the day, Mayor Daley sounded a keynote, which he evidently meant for all Democrats, by announcing that he is supporting Mr. Nixon on Cambodia.

Mr. Johnson warned that tendencies in political parties toward either the extreme left or extreme right threaten to make the Democratic Party a minority party—"or worse, several minority parties."

"This nation," Mr. Johnson said, "is strong enough to stand a certain degree of contention." But when contention turns to violence and divisiveness, he said, beware.

"Without tolerance and understanding, a political party cannot function properly," Mr. Johnson said. "We must constantly try to heal wounds and to build to fend off strife and violent dissent."

"We must continue to reflect the common hope and aspirations of all Americans," the former President added.

He also called for a "Democratic agenda for the future, including the elimination of poverty, the right of everyone to good homes, full educational privileges for all—regardless of color or economic standing—freedom from hunger and the right of all to drink clean water and breathe pure air."

Mr. Johnson mentioned the Nixon announcement on Cambodia in the course of appealing for peace in the world.

"A keystone of this aspiration," he said, "is that this nation, which can have only one President at a time, cannot present to the world a divided land without one man speaking for it."

Greeted by his old friend, the mayor, at O'Hare Airport, Mr. Johnson then attended a reception at the Conrad Hilton Hotel before the banquet fund-raiser.

Mr. Johnson's reception at the airport was free of unfriendly pickets. A group of members of the Leyden Twp. regular Democratic organization carried signs bearing the word, "Welcome LBJ."

When he left his chartered jet, the former President first shook hands with the mayor and then an accompanying squad of lesser Democratic Party officials and officeholders.

While a small, professional band that performs at Bear football games lustily rendered, "Hail to the Chief," the visitor smiled happily and was escorted past a 100-man police honor guard.

NATIONAL ENVIRONMENTAL TEACH-IN

Mr. NELSON. Mr. President, the national environmental teach-in last April 22 was certainly a significant success, if for no other reason than that it evoked the attention and concern of millions and millions of Americans over the crisis of our environment.

Many speeches were made and many words said about this crisis, but I would like to call special attention to the words of the Senator from Minnesota (Mr. MONDALE), delivered in a series of teach-in addresses throughout the State of Minnesota.

He called attention to the broad social and cultural basis for the neglect of our total environment, urging "fundamental changes in these economic habits, social values, and national priorities" if we are to save ourselves.

His speech also deserves attention for pointing to the magnitude of the commitment needed, and to the regulations and enforcement which we must abide by to save our land, air, and water.

I ask unanimous consent that the speech be printed in the RECORD.

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

ENVIRONMENT: THE COMMITMENT FOR SURVIVAL

(By Senator WALTER F. MONDALE)

Every five to twenty years, an extraordinary phenomenon takes place in Scandinavia. The lemmings, for reasons unknown, begin their suicidal march to the sea.

We are not unlike this little creature—seemingly bent on the marches, and we seem determined to take every other creature along with us.

I wonder what would happen if we sent out a questionnaire—which, incidentally, is one of the things we do best in this country—to all the other animals in the kingdom asking whether or not they would be upset if their brother, homo sapien, were to disappear from the earth. My guess is that we would get back a nearly unanimous answer that not one of them would shed a tear for our passing, since we have created such an unlivable environment for them . . . Except, maybe, the dog who is sort of the Uncle Tom of the animal kingdom.

I am extremely proud to be sharing this day with you. "Earth Day" is *your* day—4,000 campuses and community groups, and 10,000 high schools around the country—the greatest expression ever of concern for mankind and his planet.

But it's *our* day too—as a nation—because it is we who are being awakened to the profound crisis of our environment. We are awakening to:

Lakes and rivers, fouled by sewage, poisoned by industrial wastes, and suffocating in algae.

Air turned black by 173 million tons a year of smoke and fumes;

A countryside violated with concrete, asphalt, and neon; and strewn with the yearly remnants of 48 billion cans, 28 billion bottles, 30 million tons of waste paper, and 7 million junked cars;

22 species of wildlife gone forever and another 80 awaiting the end of their species . . . "Not with a bang but with a whimper;"

The oceans, so seriously polluted that scientists predict the end of their productivity in 10–20 years;

And a generation of young people who carry "strontium 90 in their bones, asbestos in their lungs, iodine-131 in their thyroid, and DDT in their fat."

Once again, the young people of America are stabbing at our social conscience: What kind of a society are we to have let this happen? And the vastly more important question: What kind of a society will we be if we allow it to go on?

There are some who hope your concern for the environment, shown here today, means that you will forget about the other symptoms of our discontent.

"The environment," to them, is a "healthy" diversion—a new trick—to occupy restless minds and bodies during spring. "Let the amateurs clean up America and leave the professionals alone to clean up Southeast Asia."

But they are wrong.

The crisis of environmental decay is clearly bound to the crises of poverty, blight, racism, war, and economic injustice.

Our "environment" includes:

The mangrove fields of South Vietnam, made barren for a generation by 50,000 tons of herbicides.

"The environment" is a deprived child, stunted in mind and body from disease, hunger, and a world without hope.

"The environment" is people—well over 200 million now, with 5,500 born each day, jamming into the cities, neglecting the towns and rural areas.

"The environment," in the words of the Kerner Commission, is "two societies, one black, one white—separate and unequal."

"The environment" is violence . . . as the Eisenhower Commission told us: "making fortresses of portions of our cities and dividing our people into armed camps."

"The environment" is a mood of retreat—encouraged by some in high office—which would replace urgency and idealism with self-interest and "benign neglect."

"The environment" is a federal budget which allocates:

$106 million for air pollution and $3.4 billion for space programs;

$200 million to feed hungry children and $290 million for the SST;

$800 million for the preservation of our water, and $1.5 billion for the second stage of ABM.

Most of all, "the environment" is a culture which seems to value:

Quantity above quality;

Self-interest, convenience and expediency above the beauty and mystery of nature;

And the preservation of institutions above the well-being and full opportunity of men they were born to serve.

Twelve years ago, John Kenneth Galbraith described this culture in his brilliant book, *The Affluent Society*. He wrote:

"The family which takes its mauve and cerise, air conditioned, power-steered, and power-braked automobile out for a tour passes through cities that are badly paved, made hideous by litter, blighted buildings, billboards, and posts for wires that should long since have been put underground. They pass on into a countryside that has been rendered largely invisible by commercial art. They picnic on exquisitely packaged food from a portable icebox by a polluted stream and go on to spend the night at a park which is a menace to public health and morals. Just before dozing off on an air mattress, beneath a nylon tent, amid the stench of decaying refuse, they may reflect vaguely on the curious unevenness of their blessings. Is this, indeed, the American genius?"

This, then, is the nature of the task before us . . . It is more than raking up our backyards . . . More than getting the phosphates out of detergents, developing bio-degradable containers, or cracking down on indsutrial polluters.

The task is not simply an "add-on" in which we direct a small amount of our staggering productivity over to the task of our own survival.

The task calls for some fundamental changes in these economic habits, social values, and national priorities.

WATER: THE CRISIS

Consider, for example, the magnitude of the crisis in water.

Probably no single resource is as precious to the people of Minnesota as their lakes and waterways.

Yet, everyday, we pour 25 billion pounds of human, chemical, and industrial wastes into our nation's lakes and rivers. Two million pounds of pesticides, and over 104 million pounds of fertilizer are added to the land each day, to find their way into the nearest waterway and feed the growth of green algae.

Lake Erie is already dead, killed by the steady discharge of poison at the rate of one ton per minute.

The Mississippi, south of St. Louis, is so toxic that signs warn against eating food *near* the banks.

Ohio's Cuyahoga River flowed so thick with oil scum that it caught fire.

According to Gaylord Nelson: "We have in the last forty years polluted every major watershed in America east of the Mississippi to a serious degree, and every major watershed west of the Mississippi to some degree."

Here in Minnesota:

The magnificent Lake Superior, the third greatest body of fresh water in the world, is threatened with 60,000 tons a day of taconite

tailings—only a single example of our abuse of that lake.

The Boundary Waters Canoe area—with some of the purest water and most unspoiled land in the nation—is threatened by mining interest which would cash in this irreplaceable wilderness for a possible profit in metal.

The Mississippi, where it is not yet spoiled by chemical and organic discharge, is threatened at Monticello by thermal heat and radioactive discharge.

Hundreds of our 14,000 lakes are threatened by eutrophication. We have already seen our precious fresh water community lakes fill up with slime and algae which feed upon the nitrates and phosphates washed in from fertilizers, detergents, and sewage.

WATER: THE NEEDED COMMITMENT

This list of environmental horror stories is known to all of you. The cure—the means by which we might reverse our past sins is equally familiar.

First of all, we must as a nation stand ready *now* to commit the vast resources needed to undo a history of abuse and neglect.

Not the vague token commitment of $4 billion spread over the next 10 years as promised by the Administration.

This kind of non-commitment, in fact, would allocate *less* to water pollution control in each of the next four years than Congress appropriated *this year*.

How much then?

The New York Times estimated the cost of cleaning all the nation's waterways at $100 billion. Out of sight? We have already spent that much in Vietnam.

Gaylord Nelson of Wisconsin has called for a commitment of $20–$25 billion a year. Impossible? Studies by the Brookings Institution and by the Joint Economic Committee suggest that our defense budget could be cut by $10–$20 billion with no real loss in defense capability. In fact, if we had simply been able to prevent the monstrous cost overruns on 38 weapons systems now in progress, we would have saved $21 billion dollars. That much alone would have met the 5 year goal set in 1968 by the Federal Water Pollution Control Agency. And that sum would represent less than the $24 billion we spent getting a man to the moon . . . which we found so far to be much cleaner but far less hospitable than the earth.

Two weeks ago I introduced the *Clean Lakes Act of 1970*, a new bill designed to provide federal funds for the restoration and preservation of our fresh water, community lakes.

I have asked in this bill for $1.5 billion over a four-year period. Too much? It's just about what we've been asked to spend next year for the second step in the ABM system.

ENFORCEMENT AND REGULATION

But beyond the commitment of resources, we need far, far stronger *regulation* and *enforcement*.

We hear so much today about rising crime and disrespect for the law.

It's time to apply a little "law and order" to the industries, municipalities, and individuals who are fouling our environment.

The laws are on the books. But the regulations are inadequate, the penalties often insufficient, and the enforcement tragically lacking.

Radioactice pollution, for example, is a growing threat with 80 million gallons of radioactive wastes already buried in our country—there to remain for an active life of up to 20 thousand years.

But disposal and regulation is carried out by the AEC—which is also the chief *promoter* of atomic power. Their priorities may be revealed in the one-fifth of one percent of their budget spent on disposal research, and the one-half of one percent spent on regulation. They have jealously resisted Minnesota's efforts to set her own stricter standards for radioactive safety.

Another example of inadequate regulation and enforcement is *automobile pollution*.

The auto is the greatest air polluter of them all, causing about 60 percent of all air pollution, and adding some ninety million tons of pollutants a year to our atmosphere, filling the air with lead, carbon monoxide, hydrocarbons, and 200 other chemicals.

But for the past 17 years, according to Justice officials, the major auto companies had engaged in a conspiracy to prevent the development and installation of effective pollution-control devices.

Evidently, the auto makers have promised to be good in the future, because the charges were dropped and settled out of court. Now we are relying on law that sets emission standards only on the newest cars, and monitors only the prototypes sent by the manufacturers for testing.

Eight years ago, Rachel Carson wrote *The Silent Spring*, and the world awakened to the terrifying danger of DDT—a persistent poison accumulating in the fat of virtually all creatures on earth.

We know that DDT causes abnormalities of egg shells, birth defects in fish, cancer in mice, and disastrous damage to insect ecology.

Denmark, Sweden, Finland, Great Britain, Hungary, Germany, and the Soviet Union have already banned the use of DDT and other chlorinated hydrocarbons. The United States has allegedly banned the use of DDT, but it is allowing the continued production, marketing, and release of over 25 million pounds of this poison while challenges and appeals are going on.

Even more shocking for their direct effect on human beings are the organo-phosphates. These poisons take an estimated annual toll of 800 deaths and 80,000 injuries to farmworkers bought into contact with them.

While farmworkers are struck down by chemicals structurally similar to nerve gases used in chemical warfare, the state and Federal Departments of Agriculture argue about "legal tolerance limits."

A CAUSE FOR HOPE

I don't want to belabor the specific examples any further.

We have committed great crimes against man and nature.

But our "environmental conscience" has been awakened . . . an awakening which is due very largely—perhaps primarily—to the efforts of all of you and the thousands of other students, faculty, and citizens who have brought us "Earth Day."

I think that this awakening is cause for tremendous hope.

We are finally learning what a terribly fragible and finite planet we live on.

But we are also learning the power of an aroused public. Especially a young public, and especially a young public who may soon become voters at age 18.

In his final speech to the United Nations, Adlai Stevenson said:

"We travel together, passengers on a little spaceship, dependent on its vulnerable reserves of air and soil; all committed for our safety to its security and peace; preserved from annihilation only by the care, the work, and the love we give our fragile craft."

Keep up the care, the work, and the love which you are showing today, and I will keep up the hope I feel for a cleaner and better Earth.

CHIEF JUDGE ROSZEL C. THOMSEN, OF MARYLAND, HONORED

Mr. TYDINGS. Mr. President, recently I had the privilege of attending an affair honoring the chief judge of the U.S. District Court for the District of Maryland, Roszel C. Thomsen.

The principal speech that evening was delivered by Stephen H. Sachs, U.S. attorney for the District of Maryland. I commend that speech to the attention of Senators for its wit and for its insight into a man who has graced the Federal bench with wisdom and distinction.

Like Mr. Sachs, I was privileged to try cases before Chief Judge Thomsen both as a private practitioner and as U.S. attorney for Maryland.

I can attest to his uncanny ability to pierce the complexities of a case and to bring good sense to bear on its central issues. I can also attest to the esteem in which he is held by his colleagues and by those who have practiced before him.

Men such as Roszel Thomsen bring honor to the bench. We are in his debt.

I ask unanimous consent that Mr. Sachs' speech be printed in the RECORD.

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

SPEECH DELIVERED BY STEPHEN H. SACHS

Mr. President, Mr. Toastmaster, Judge and Mrs. Thomsen, Mr. Justice Clark, Senator Tydings, Mayor D'Alesandro, members of the federal and state judiciary and their wives, friends of Chief Judge Thomsen:

When I was asked to speak at this tribute to Chief Judge Thomsen and in his presence—his very formidable presence—I was quick to appreciate the challenge but not so quick to accept it. I did not, it must be recorded, leap at once to the task. I am and hope to remain a very active practitioner in his very active court. To speak of him with too much reverence is to run the risk of being thought a toady, or worse. But to speak of him with too little reverence—well, I am a young man with growing children and a mortgage, the outer limits of the contempt power are not well defined and then, too, there is Mrs. Thomsen. But worst of all is to be, or to be thought to be, a coward. It was the immortal Justice Holmes, after all, who said "the place for a man . . . . is in the fight".

In any case, I am sure we can all agree that my assignment is delicate.

A biographical sketch of Roszel Cathcart Thomsen which appeared in THE SUN over twenty-five years ago tells us that the first Thomsen came to the United States from Denmark in 1815. Curiously, the author felt obliged to note that the decision to depart the old country was Thomsen's, not Denmark's. The author assures us that members of the Judge's family have been "responsible citizens for generations" and, as if to put the point beyond dispute, quickly adds that they "have also been staunch members of the Republican Party."

We are told that one of his ancestors, Robert Cathcart, was "killed in defense of his hearthstone at the Battle of North Point." Another Robert Cathcart was provost marshal of Baltimore during her occupation by federal troops in the course of the Civil War. State court judges present this evening may well reflect on the role of this Thomsen ancestor as a kind of federal super-cop, and detect an echo in the Judge's exercise of his habeas corpus jurisdiction over state prisoners.

The Judge was born to William Edward and Georgia A. C. Thomsen at 1620 Linden Avenue on August 17, 1900. McKinley was in the White House; Victoria on the Throne. Neither survived much beyond the Judge's first year.

The *Sunpapers* chronicle points out that he "learned his letters" from his grandmother before kindergarten and was drilled daily by his father in "mental arithmetic," an "odd rite" performed while his father was shaving. He was, from all accounts, a

"bright lad," "ahead of his years in aptitude." He was not yet ten years of age when his first published work, four pages in length, entitled "The Conversion of Joe," appeared in print, a striking accomplishment, even if his father was in the printing business. The little book had a lively sale at ten cents a copy but, unfortunately, the Judge's career as a best-selling author blossomed no further. To my knowledge none of his written opinions had ever fetched such a price.

He graduated Boys' Latin School at 14 and entered the Johns Hopkins University, where he excelled. He was editor of the News-Letter, manager of a championship lacrosse team, editor-in-chief of The Hullabaloo, winner of a gold "H" for prowess on the debating team, and was elected to ODK and Phi Beta Kappa. There is a rumor to the effect that he finished second in his class but President Goodnow forgot to read the honors list at graduation and we shall probably never know.

Young Thomsen was a mere sophomore when the Lusitania went under but, in that more openly patriotic day, the descendant of the Cathcart who fell in defense of his country at North Point promptly enlisted in the Student Army Training Corps. The Armistice, however, cut short a brilliant military career. He was mustered out an "acting sergeant."

And then, guided by the wise counsel of his mother's cousin, Judge Morris A. Soper, young Thomsen entered the law. During his years at Maryland Law School, where he consistently led his class, he also served as bailiff to Judge Soper, then Chief Judge of the Supreme Bench of Baltimore City, and after graduation, an event marked by Thomsen's capture of the thesis prize, went to work for the law firm of Soper, Bowie & Clark. After five years the Judge formed what became a renowned partnership with Walter L. Clark of the old firm and Clater Smith, a partnership from which Judge Thomsen engaged in an active and successful trial practice until named to the federal bench in 1954.

But I am ahead of my story and must discuss two events central to an understanding of the man and his work. The first, and of surpassing importance, was his marriage. The *Sunpapers* historian tells it best. "At that time (young Roszel's Boys' Latin days) the Thomsens were living at 4 Midvale Road and their closest friends, the Wolfs, were across the street. The Wolfs had a little girl named Carol and in accordance with an old Baltimore custom the two families hatched a benevolent plot which had for its object the ultimate marriage of their offspring. This the offspring stubbornly resisted in accordance with another custom equally sanctified by time." By his senior year at Hopkins, both offspring were reported still holding out, but by 1929, only after both families had long since given up, and about two decades after the match was made on Midvale Road, Roszel Thomsen married the girl across the street. To that union three children were born—George Edward, Grace Griffing (Gay) and Margaret Lucille (Peggy) who produced, in turn, nine grandchildren.

The second event, though less romantic, was of high public importance. On March 21, 1944 Mayor McKeldin named lawyer Thomsen President of the Board of School Commissioners, thus honoring a compaign pledge to keep the schools free from politics. That Mr. Thomsen had served as chairman of the Lawyers for McKeldin League, and had made two campaign speeches for the new mayor, had nothing whatever to do with the appointment. Mr. Thomsen expressed "complete surprise" at his selection.

The finest accolade, however, came from that doughty defender of the public interest, Marie Bauernschmidt. Careful to note that she was speaking personally, and not in her capacity as Executive Secretary of the Public School Association, she called the appointment "a splendid thing" and said it "look[ed] like there are better times ahead." The modest appointee said only that he had much to learn about his new job and, apparently mindful of the crisis that had made the School Board an election issue, proceeded at once to establish a public relations committee.

By today's standards the ten-year Thomsen school administration was mild. That it lasted ten years is probably proof enough. By most accounts it was progressive and constructive, marred only slightly by a quibble or two from Hyman Pressman and a minisquabble over the use of public funds to publicize a school loan appearing on the ballot. Board President Thomsen diplomatically acknowledged that the propriety of the funds' use "was a close and troublesome" question, and the voters approved the loan. The Judge's tenure as school board head ended on May 17, 1954, the day he was sworn in as a District Judge, and the same day, those of you with a sense of history will have noted, on which a unanimous Supreme Court decided *Brown v. Board of Education*.

And so we come to his practice of what Learned Hand has called the "art and craft" of judging—his fifteen years as a District Judge for the District of Maryland, most of it as the court's Chief. What strikes one at once is the sheer bulk and range of it all. According to his secretary, Miss Erma Leonard, a splendid lady and the ultimate authority, his published opinions alone approach 700 in number and cover thousands of pages in West's Reports. He has logged over 2000 court days in this decade and a half, most of it presiding at the trial of hard fought issues, a good part in that most awful of responsibilities, the imposition of sentence in criminal cases. Incidentally, Judge Thomsen, I'm sure it's appropriate to bring you greetings from the long list of defendants you have sentenced to prison, many of whom were unable to be here with us this evening.

Listen to only a short litany of some of the major causes which have engaged the Judge's time and attention over the years. And bear in mind that each represents weeks of trial and an extended written opinion.

The habeas corpus petition of John David Provoo, charged with treason, the ultimate crime, detained without trial for five years under circumstances in which the United States of America was shown to have stooped to conquer.

The elaborate pre-trial proceedings and two-months trial of two Congressmen of the United States on charges of conspiracy and conflict of interest.

The mail fraud trial of Stewart B. Hopps, confidence man, par excellence.

The nine-weeks trial—held in the Richmond courtroom in which John Marshall presided at Aaron Burr's trial for treason—of the promoters of Security Financial Insurance Corporation, the centerpiece of Maryland's savings and loan scandals in the early sixties.

The celebrated kidnap-murder trial of Melvin David Rees.

The Colgate-Palmolive trade secrets case which probed the mysteries of Rapid Shave and Rise.

The Electrical Workers case which tested the legality of a revocation by the International of a local union charter.

The Agricultural Adjustment Act cases in which the Judge instructed the Department of Agriculture that it must follow its own regulations if it was going to force entry onto the wheat fields of embattled Maryland farmers.

The celebrated affair of *Heine* v. *Raus* in which the Judge jousted with the double-agentry of the C.I.A. in order to decide a slander suit.

One of the things I like best in the Judge's opinions is the way he cheerfully wrestles with great and cataclysmic events from the Fifth Floor of the Post Office Building. How far his writ doth run!

In 1957, for example, he decided that the defection to the Chinese Communist Regime of the crews of seven Nationalist Chinese ships—they "ran up the red flag," the Judge observed—constituted barratry as that term is used in the marine insurance field and therefore a ground for recovery on an insurance claim by the Chinese Republic. Simply put, the insurance company loses after an exhaustive opinion by the Judge which interweaves the details of preferred ship mortgages, hypothecations and the fine print of insurance clauses, with a learned discussion of the history of China from the Manchurian war lords to Chou En Lai and a perfectly hair raising description of the seizure of the vessels on the high seas. If you liked the Caine Mutiny you will love *Republic of China* v. *National Union Fire Insurance Co.* at 151 F. Supp. 211. The careful reader will detect a note of displeasure in the opinion at the unseemly haste with which the British Government recognized the new regime in Peking.

In another admiralty case the Judge met and mastered the tortured politics of the Middle East. The Ulysses II, a Panamanian vessel flying the Liberian flag, was under a time charter with a United States Steel subsidiary when hostilities broke out in the Middle East following Egypt's nationalization of the Suez Canal in 1956. As the opinion puts it, in a masterpiece of understatement: "On July 26, 1956, Gamal Abdul Nasser, President of Egypt, nationalized the Suez Canal. The United Kingdom and France protested vigorously and it was generally recognized that a serious crisis had been created." The owners of Ulysses II, invoking a contract clause permitting cancellation if war was declared, terminated the time charter. The U.S. Steel subsidiary sued. The question here on Calvert Street was whether Abdul Nasser had declared war on France and England.

The evidence included a stem winding speech by Nasser which concluded ". . . we shall fight and never surrender. We shall fight; we shall fight and we shall never surrender", words which, as the Judge observed, showed that Nasser "was not proceeding cautiously." The question was close. Distinguished experts in the laws of war testified for both sides. Judge Thomsen was dismayed at the difficulty in translating Nasser's speech, difficulties which arose, he felt, "because Arabic is not rich in words to express the fine distinctions argued by counsel in this case."

Despite the difficulties, however, the Judge was sure he knew a declaration of war when he saw one and that Nasser had declared himself a war. Held: the termination of the time charter was justified. The opinion is replete with references to the great and near great of the period, including President Eisenhower, Prime Minister Eden and King Farouk, and contains a gripping account of the diplomatic demarches which led up to the hostilities. I recommend it for those who enjoyed *Casablanca, The Desert Fox* or *The Bagdad Express*.

Another rich vein in the collected opinions of Roszel C. Thomsen is his body of work on the legal dimension of the world of sport. They reflect the lively interest in sporting events which one would expect from the championship lacrosse manager who himself played for an amateur lacrosse team known as the "Druids," an assemblage which I have been told is very famous but of which I must confess I've never heard.

Time permits mention of only a few of the Judge's sporting opinions but certainly the celebrated anti-trust suit brought by the American Football League against the National Football League must take first place. That contest—in a very real sense, the first super-bowl game—was played to an empty courtroom in Baltimore in 1962. The National

League won but the loser's share of the gate, so-to-speak, was the acknowledgement by the Judge that the AFL had been "notably successful in its operations" and his prediction that the AFL "gives promise of increasing success." The prescience of that statement was soon brought home in spades to all NFL fans via the strong right arms of Joe Namath and Len Dawson.

Two other of the Judge's excursions into the world of sport deserve brief mention. In one, *Simmons* v. *United States*, the Judge denied the claim of a taxpayer who insisted that his $25,000 prize from a local brewery for catching Diamond Jim III—a fish—was not taxable income. Taxpayer's argument that his efforts constituted a "civic achievement" and his money, therefore, non-taxable, "merits the smile," said the Judge, "it was no doubt intended to evoke."

Finally, in *Klasmer* v. *Baltimore Football Inc.* the Judge rejected a suit for copyright infringement by the composers of the Baltimore Colts official marching song. He held that the song had been dedicated to the public within the meaning of the copyright laws. In the course of his opinion, and in defense of his decision, the Judge pointed out what every Baltimorean, especially during football season, knows only too well: "The song is played, usually from memory without any sheet music or score, by bands and orchestras at civic functions, club functions, Bar Mitzvahs, dances, at night clubs and elsewhere."

Of course, there have been disappointments in the Judge's career. Some minor ones—like an occasional reversal by a shortsighted court of appeals, even a reversal in the Supreme Court which once instructed the Judge on when a car was stolen within the meaning of the Dyer Act. Mr. Justice Frankfurter, with whom Justices Black and Douglas concurred, thought Judge Thomsen was right and dissented. Mr. Justice Clark, who is with Judge Thomsen tonight, was against him on that occasion. Further comment, if any, I shall leave to Mr. Justice Clark.

And, sadly, one disappointment must be recorded as major. For who can doubt that late in the day, at his window in the privacy of his chambers, as he watches the shadows lengthen over Fayette Street, the Judge secretly bears the pain and the regret of knowing in his heart, that despite fifteen years of dedicated service as Chief Judge of his court, he will never achieve his impossible dream—he will never be elevated to that most coveted and lofty pinnacle—of United States Attorney for the District of Maryland.

It is time to be serious—not solemn, but serious in sharing with you a few brief reflections about Judge Thomsen's fifteen years on the Court.

Facts not law, decide most lawsuits and the capacity to marshal facts is central to a judge's function. Judge Thomsen not only marshals facts; he absorbs, digests and devours facts. He is the most factual man I know. It is not uncommon, by the end of a trial, for the Judge to have a better command of the operative facts than the lawyers who have lived the case for months. Litigants respect the talent whether they win or lose. If they lose, it is not because the Judge did not understand; more likely, it is because he did.

He is a most contemporary man. He likes young people, young lawyers in particular. He talks to them as parents are supposed to talk to children—with respect, as if they were grown. And, best of all, he listens. He teaches his law clerks; I think he would agree that he learns from them at the same time.

He distrusts extremes. He suspects, usually, correctly, that no cause is as just as its advocates claim. A skepticism, a distrust of absolutes, informs his work as a judge, ironic perhaps in a man of deep religious faith, but essential to the art of judging in a time when moral passion confronts the rule of law. As one who watched the trial before him of the Catonsville Nine, I suspect that he does indeed believe that there is a City of God and a City of Man and that in the American democracy, designed as it is to accommodate the conflicting faiths and beliefs of a diverse people, "the spirit of liberty," as Hand put it, is "the spirit which is not so sure it's right."

He loves his court. He is proud of the relationship among its judges and its capacity to act as a unit in order to bring certainty to the administration of justice. And he is proud—as are we all—of its honored place in the state and in the nation. And I suppose if there is one abiding point of my remarks this evening in commemoration of Judge Thomsen's fifteen years on the Court it is that like Rose, like Soper, like Chestnut before him, Roszel Thomsen, in Holmes' phrase "lives greatly in the law."

FOR LAW AND ORDER ON OUR CAMPUSES

Mr. THURMOND. Mr. President, Sunday's edition of the Greenville News carried a fine editorial stressing the need for law and order on our college campuses. Since a few of the liberal newspapers in this country are encouraging rebellion and disruption of our society, it is comforting to see editorials from outstanding newspapers like the Greenville News, which advocate a return to the principles on which this great Nation was founded.

Disorders, use of narcotics, and discourteous conduct on the part of a few students have posed serious problems to our educational institutions. Unless students are taught sound principles of government during their formative years, Mr. President, they will enter today's world with little or no ability to become productive citizens.

I have always advocated the protection of individual rights for all of our citizens, and fair and equal justice under the law. However, all citizens in this country, including our students, have the responsibility to obey the law, and violations of the law should not be overlooked simply because they are committed by one attending an educational institution.

Mr. President, I ask unanimous consent that the editorial entitled "Law Has a Place on Campus," published in the Greenville News of April 26, 1970, be printed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

LAW HAS A PLACE ON CAMPUS

It is difficult to follow the reasoning of a small group of University of South Carolina students who have demanded that university officials ban narcotics agents from the campus. As a "demand" the request is on pretty weak ground.

If it was not such a serious matter, it would be humorous to even consider that law enforcement should stop at campus boundaries—any campus. To follow through on the "demand" of the USC students would turn the university into a sort of no man's land for lawlessness.

A crime is a crime no matter whether it takes place on a city street or in a college dormitory. And a lack of law enforcement and prosecution of crime in either place will have the same result—chaos and an eventual breakdown of society.

The protesting USC students, and it was, thank goodness, only a very small percentage of the total enrollment, were actually asking the university to place a protective wing over illegal drug activity. They were saying "Protect us harmless and fun loving narcotics fanatics from the big, mean cops."

Law enforcement officers not only have a right, but a duty to pursue illegal drugs onto the campus, and to use every means at their disposal to stop the campus drug traffic. If some of the students regard the police activities as unsporting, that's just too bad. Many adult criminals now serving jail time probably have the same opinion.

The students charged that the police have planted evidence to make drug cases on the campus. This is a serious charge, and if the students can produce evidence of its validity, a thorough investigation is in order.

The students do have rights—the same rights that all other citizens have to fair treatment and justice under the law. But any claim that inhabitants of a campus are exempt from the law is ridiculous and irresponsible on the face of it.

THE EXTRADITION PROVISIONS OF THE GENOCIDE CONVENTION ARE THOROUGHLY COVERED BY MR. GEORGE ALDRICH: DEPUTY LEGAL ADVISER FOR THE STATE DEPARTMENT

Mr. PROXMIRE. Mr. President, today I shall continue my review of the excellent testimony of Mr. George Aldrich, Deputy Legal Adviser of the State Department, before thte Special Subcommittee of the Committee on Foreign Relations considering the Genocide Convention.

The question of extradition is one of the most confusing aspects of this treaty. One of the most frequent points of opposition to the Genocide Convention is that U.S. accession will "allow our citizens to be spirited out of the country and tried before an international court." First, there just is no international penal tribunal in existence at this time. Second, as Mr. Aldrich explains in his comprehensive testimony, the above view of the extradition procedures is oversimplified and distorted.

I should like to emphasize two particularly important points brought out in Mr. Aldrich's testimony. First, article VII of the Genocide Convention does not compel the United States to negotiate extradition treaties with every foreign country that is a signatory to the treaty. Mr. Aldrich points out:

> The Convention does not propose to be an extradition treaty in force. It would require only that the United States provide for extradition for genocide in new extradition treaties which we might negotiate or in revisions of existing extradition treaties.

Second, Mr. Aldrich repeatedly noted that legal safeguards protecting the rights of American citizens to a fair trial on the charge of genocide can be built into the extradition treaties governing extradition for this crime. He stressed that an important consideration in the negotiation of these, or any extradition treaties, is "whether the judicial process of the other country affords persons who may be extradited a fair trial."

Mr. President, I ask unanimous consent that a portion of Mr. Aldrich's testimony be printed in the RECORD.

There being no objection, the excerpt was ordered to be printed in the RECORD, as follows:

Article VII of the Convention provides that parties pledge to grant extradition of persons charged with genocide "in accordance with their laws and treaties in force" and that there shall be no defense to extradition on the grounds that the crime was a "political" one. United States law provides for extradition only where there is an extradition treaty in force. The Convention does not purport to be an extradition treaty. It would require only that the United States provide for extradition for genocide in new extradition treaties which we might negotiate or in revisions of existing extradition treaties.

Thus, no person could be extradited from the United States for trial in a foreign country on a genocide charge unless we have an extradition treaty with that country making genocide an extraditable offense. There are no such treaties now in existence with any country.

We would not negotiate such treaties until the Congress has passed legislation making genocide a crime in the United States, because it is our policy, shared with most countries, not to make an offense extraditable unless it is a crime in both the State requesting extradition and the State receiving the request. Another factor in any decision to negotiate an extradition treaty is whether the judicial process of the other country affords persons who may be extradited a fair trial. In addition, since extradition treaties often remain in force for a long time, during which judicial systems can charge, basic procedural protections have to be built into the treaty at the beginning.

While the Senate would have an opportunity to review these aspects of each extradition treaty actually concluded when asked for advice and consent to ratification, it may be helpful for me to outline now the basic safeguards we have in mind. First, any extradition treaty will require the State requesting extradition to produce sufficient evidence to persuade both a United States Court and the Executive that the person sought would be held for trial under United States law if the offense had been committed here. Second, any extradition treaty will assure the person sought the right to the remedies and recourses provided by the law of the requested State. In the United States, for example, habeas corpus would be available. Next, any extradition treaty will preclude extradition when the person sought is undergoing or has undergone trial in the United States for the same act.

CRIMINAL JUSTICE DECISIONS OF SUPREME COURT

Mr. TYDINGS. Mr. President, 2 years ago at the time of debate on title II of the Omnibus Crime Control and Safe Streets Act of 1968, some claimed that the rise in crime had a direct and significant relationship to the Supreme Court's Miranda decision and other decisions that limited the admissibility of illegally obtained evidence. At that time, I argued that blaming the High Court for the spiralling crime rate was simple and popular, but it simply was not factual.

Attacking the Supreme Court for our social woes remains, unfortunately, as politically popular as ever. The problem with these continuing attacks is that not only are they not factually justified, but also that they serve to obscure the real bedrock problems in our system of criminal justice—the neglected and deficient condition of our police, our courts, and our correctional facilities.

Fred P. Graham, in the New York Times of April 6, has written a fine article on the changing views of law enforcement officers toward the Supreme Court's criminal justice decisions. Mr. Graham reports that more and more prosecutors and police officials "are becoming less disturbed by the Supreme Court's rein on their conduct toward suspects." He noted that even the most ardent of the critics of the Court's Miranda decision do not now press for reversal of this ruling. Mr. Graham also points out that our law enforcement personnel are becoming increasingly aware that one of the most significant barriers to fair and efficient law enforcement is the problem of long and unjustifiable delays in bringing a criminal case to trial.

I ask unanimous consent that Mr. Graham's fine article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

LAW ENFORCEMENT OFFICERS LESS UPSET AT COURT CURBS

(By Fred P. Graham)

WASHINGTON, April 5.—Big-city law enforcement officers are becoming less disturbed by the Supreme Court's rein on their conduct toward suspects despite new evidence that crime has been steadily outstripping their capacity to control it.

The atmosphere now is a far cry from that of two years ago, when prosecutors and police officials throughout the land were cheering on the Senate as it added anti-Supreme Court provisions to the Omnibus Crime Control Act.

Today, many of these authorities seem either to have mellowed after more experience under the Warren Court's restrictions or to have been succeeded by men who place the primary blame for rising crime elsewhere.

MANPOWER INSUFFICIENT

In interviews with law enforcement officials in a dozen major cities, the prevailing feeling was that the most serious problems lay in delays, faulty administration and insufficient manpower in the local courts rather than in the law as laid down by the Supreme Court.

At the same time, the annual national crime report by the Federal Bureau of Investigation shows again, as it has for several years, that the chances are declining that a person who commits serious crime will be punished for it.

In some cities, the decline in law enforcement effectiveness seems due to the simple fact that crime is increasing in volume faster than policemen, prosecutors, judges and courtrooms are being added.

In others, the apparatus of justice seems to have been jammed by the glut of cases. New York City's criminal justice system has become so overwhelmed that at last count it was producing fewer felony convictions than in 1960 although the number of reported crimes has more than doubled.

Police officials are more likely than prosecutors to lay some of the blame on the Supreme Court for the decline of law enforcement effectiveness. But they also tend increasingly to see the problem in terms of criminal justice machinery.

This sentiment emerged in a talk with New York's Police Commissioner, Howard J. Leary. Normally a cool, controlled man, when Mr. Leary was asked his opinion of current proposals for preventive detention he snapped: "What we need is detention, period!"

"If a man has been arrested again and again for felonious assault and he's found guilty he should be locked up," Mr. Leary said. "When you see the same man committing 15 burglaries over a period of two years and nothing happens, we know something's wrong. We should not only examine what's happened to the police, we should examine the total system of justice and decide if we're willing to pay the price to make it work."

The latest calculations by the F.B.I. bear out Mr. Leary's impression that the administration of justice is losing ground all along the line.

In the years between 1961 and 1968, the number of reported serious crimes rose by 115 per cent, while arrests increased by only 53 per cent. The total number of policemen rose by even less—30 per cent—and the ratio of police then to the population remained the same.

The rate of offenses "cleared by arrest" or solved to the satisfaction of the police declined by 30 per cent, and the rate of convictions per criminal charge dropped by six per cent.

As a result, there were the following changes in the average disposition of 100 serious crimes reported to the police:

Crimes cleared (solved):	
1961	26
1968	21
Persons arrested:	
1961	23
1968	20
Persons charged:	
1961	22
1968	18
Adults guilty:	
1961	9
1968	6
Acquittals:	
1961	3
1968	2
Sent to juvenile court:	
1961	8
1968	7

(In the table, there are more crimes cleared than persons arrested because one man was arrested for more than one crime.)

Last year, however, the rate of increase in reported crime declined for the first time in several years. In 1967, the rate rose by 16 per cent; in 1968, by 17 per cent, and in 1969 by 11 per cent.

FEW CITIES DATA COMPLETE

Very few cities maintain complete enough data to show long-term trends in arrests, indictments and convictions, material that is necessary to determine how well the community is contending with crime.

An examination of criminal justice problems in 12 major cities turned up only three—New York, Chicago and Los Angeles—with adequate statistics. It showed New York was faring worst.

According to figures gathered by the New York State Legislative Commission on Crime, the number of felony arrests in New York rose from 29,257 in 1960 to 49,803 in 1967. Felony indictments increased only slightly, from 11,086 to 11,528. But convictions for felonies actually declined—from 3,361 to 3,296.

The figures for robbery, the offense often used by experts to gauge violent crime trends, are even more striking. From 1960 to 1967, the number of reported robberies (muggings, stickups, and other thefts by the use of threat or force) more than doubled, from 15,500 to 35,934. The number of convictions for robbery declined—from 837 to 803.

There was some slippage at all stages. The number of arrests for robbery did not quite double, rising from 2,845 to 5,540. The number of robbery indictments barely increased, from 1,936 to 2,152.

LOS ANGELES AND CHICAGO

In Los Angeles, robberies also doubled in roughly the same period. Convictions were up, too, but only by 60 per cent. By contrast in Chicago, which has been stereotyped as a crime capital, the police reported almost no increase in robberies and a slight decline in convictions.

Law enforcement officials point out that criminal statistics are treacherous, particularly because of the lag between offenses and convictions. They also note that many of those arrested for robbery plead guilty to and are punished for lesser offenses, such as assault, petty theft or other misdemeanors.

This appears to be the source of the most serious lag in bringing criminals to justice in most communities. Court backlogs have grown so huge and trial delays so long that prosecutors are under intense pressure to reduce charges in order to persuade suspects to plead guilty and avoil time-consuming trials.

This process gives the police and the public the impression that people who are repeatedly caught committing serious crimes are receiving little if any punishment. Often a defendant will remain free on bond for months and then on the eve of his scheduled trial will plead guilty to a misdemeanor.

DELAYS LAID TO RULINGS

When big city prosecutors criticize the Supreme Court's rulings these days, it is frequently because the rulings have contributed to these delays. The usual complaint is that the additional procedural safeguards for defendants have lengthened the time required to try the average case.

Burton B. Roberts, the district attorney in the Bronx, complains that the state's laws do not permit speedy detention of narcotics addicts, but his only criticism of the Supreme Court's rulings is that they have added procedural glue to the machinery of justice.

In the four years since the Supreme Court ruled in Miranda v. Arizona that the police must warn suspects of their rights before questioning them, Mr. Roberts says, "if anything I find that our rate of conventions has gone up."

Mr. Roberts has found no drop in the number of confessions. People who are willing to talk will do so after having been warned. He says, but the public have eased under the Miranda rule because policemen do not feel pressures to obtain confessions.

The pinch has come from an increase in pretrial motions to suppress evidence and post-conviction appeals and petitions for habeas corpus, which Mr. Roberts attributes to new defenses announced by the Warren Court.

CHICAGOAN PRAISES RULINGS

He points out that the number of indictments in the Bronx has doubled since 1960, and even though the number of judges has increased from one to five and sometimes six, the case backlog has doubled.

James Murray, a former member of Congress from Chicago who is now first assistant district attorney for Cook County, also praises the Warren Court's rulings on criminal suspects' rights. He hopes that the Court will "maintain the same philosophy and explain it further" under Chief Justice Warren E. Burger.

His criticism is that the Warren Court's new procedures have stretched the time from arrest to punishment. "We're in the 'now' generation," Mr. Murray said. "Two years between a crime and punishment doesn't impress the tough kids we see these days."

The most outspoken critic of the Miranda decision among big-city prosecutors is Arlen Spector of Philadelphia, who quotes copiously from statistics that he says show a decline in * * * from suspects accused of serious offenses in Philadelphia.

But even he only stresses the need to eliminate the Miranda decision's retroactive aspect, which invalidates some confessions given years ago. He does not strenuously press for a reversal of the ruling itself.

Lawyers disagree as to the significance of the change in law enforcement officials public attitudes toward the Supreme Court's decisions. Some feel that some police officials were responding to adverse public reaction to their anti-Court statements, which some people took as an indication that they wanted a green light to violate citizen's rights.

Jack S. Hoffinger, Manhattan defense lawyer, feels that the police are sanguine about the Miranda ruling because they have learned to get around it.

"The police ignore the Miranda rule more often than they follow it," Mr. Hoffinger says. Each confession case degenerates into a "swearing contest" between the police and the defendant as to whether the warnings were given, he said—with the judge almost believing the police.

The official line from most top-level police officials is that stated by Attorney General Robert H. Quinn of Massachusetts:

"The police are adapting very well to recent Supreme Court decisions, not because they have learned how to circumvent the decisions but because they have learned to work within its strictures. Today, they are sure to heed the Miranda warnings and to be more careful in obtaining warrants."

Outsiders find it hard to tell how much of this is "stiff-upper-lipmanship" and how much reflects the true feeling of policemen. But occasionally older police officers down in the ranks hint that the rulings still have an adverse bite.

Recently a visitor to the police chief's office in San Francisco found that the chief was away, but was assured by a subordinate that the chief would have no complaints against the Supreme Court and would say that the police were doing very well. A lower-level officer then added matter-of-factly that that was the official line, but that in fact "it's hurt us a hell of a lot."

When such officers are questioned, it usually develops that very few cases have been lost because of constitutional rules.

In the Bronx, for instance, about four out of five arrests for such serious crimes as robbery and burglary are currently made by uniformed patrolmen—not detectives. The patrolmen's arrests were almost all made because they were at or near the scene of the crimes and collared the suspects. Few involve questioning or other sophisticated evidence-gathering.

But almost every policeman can tell a story of a crime that probably could have been solved if the police were permitted to ask the prime suspect to explain his actions.

They cannot believe that the Supreme Court is right in saying that suspects cannot be asked to explain such circumstances, and that if they refuse their refusal cannot be used as evidence against them.

BILL TO LIMIT CROP SUBSIDY PAYMENTS TO $20,000

Mr. SMITH of Illinois. Mr. President, last Thursday, April 30, I introduced a bill—S. 3782—that would limit the total Federal farm subsidy payments to $20,000 per producer per year. This measure would amend title I of the Agricultural Act of 1949 to terminate, once and for all, the shocking and excessive sums paid to the very few, but very rich, corporate farms and agribusinessmen who annually collect up to as much as $4 million each for not planting crops.

When the Agriculture Committee reports the farm bill it is at present studying, I will offer an amendment to that measure identical to the bill I have already introduced.

The idea of limiting crop subsidy payments is not new, but I believe I am among the first Members of this body from a prominent agricultural State to initiate legislation calling for a dollar ceiling on farm subsidies. I have taken this step because I believe it is time the Federal government stopped contributing to the trend towards bigness in agriculture. As far as I am concerned, there are already too many independent forces at work encouraging heavy concentration in large farm corporations or agribusinesses: The high price of land and equipment requires immense capital outlay. Intense mechanization requires far greater acreage for full machinery utilization, consistently lower per-unit prices for farm products necessitate bigger volume to support the producer.

All these forces by their nature are the consequence of the technological revolution in agriculture and are virtually beyond effective Government direction. The ceiling the Federal Government chooses to pay individual farming units for not planting is directly within its control, and I propose we do something about it—now.

Numerically, very few farming units will be affected by a subsidy ceiling. Less than 13,000 agribusinessmen out of the 2½ million subsidy recipients in 1969 received more than $20,000 in subsidies. Broken down by crop, the growers of approximately 2 percent of all feed grains, 3 to 4 percent of all wheat, and about 28 percent of all cotton would be affected by my proposal.

Who are these 13,000 producers? We know this: In 1969 eight subsidy payments were in excess of $1 million. A high percentage went to corporations. Among those receiving more than $20,000 are many large, nonfarm corporations like Standard Oil, Reynolds Aluminum, and others. A substantial number of banks, several State prison farms, and even State governments share in the Federal largess under a program designed and intended to strengthen the rural family farm. The startling truth is that, altogether, a mere 0.51 percent of subsidy recipients collected 13.77 percent of all payments—for a total of $508,622,613. Compare that statistic with these: More than a third of all subsidy payees—approximately 1.1 million farmers out of 2,525,800 payees in 1969—received less than $500 in payments. In all, in 1969, the average participating farmer was paid $1,463.57.

We are already paying $3.7 billion in annual farm subsidies. 14 percent of that amount is going to half of one percent of participating farmers. Thus, the giant corporate farms continue to multiply, feeding on the small farm and the taxpayers dollar. The number of payees receiving in excess of $20,000 has gone up 30 percent in 1 year alone, and the trend is expected to continue unless it is checked by strong congressional action now.

Mr. President, my bill will do more than equitably apportion farm subsidies: It will save taxpayers money—approximately $200 to $300 million annu-

ally. This money could be reserved, or expended on other, more worthy, projects like farm pollution control, conservation, and wildlife management. It is clear to me that whatever constructive use of the money saved we make, it will be a better use than swelling corporate and agribusiness bank accounts.

Subsidy ceilings are not new. They have been suggested before and debated before. Let us look at some of the objections that have been raised to crop subsidy limitation per producer.

One argument often heard is that if big producers cannot receive full payment for all diverted acres, they will simply drop out of the program completely, pour on the fertilizer and multiply production. The result, the Department of Agriculture has argued, would be a glut on the market—followed by a sharp drop in commodity prices and the squeezing out of the small producer our farm program was designed to protect.

That future projection of an imaginary horrible was flatly contradicted by the last administration's Under Secretary of Agriculture, John A. Schnittker. In a report dated November 27, 1968, the closing days of Secretary Freeman's term, Dr. Schnittker stated unequivocally:

> Payments to producers under existing price support and acreage control programs. . . . Could be limited to around $20,000 per farm, for all payments . . . without serious adverse effects on production or in effectiveness of production adjustment programs.

The then Under Secretary went on, examining supporting data in some detail, documenting fully the reasons that a subsidy limitation could not ruin the farm payments program. The Johnson administration, however, did not permit the report to see daylight.

Some of Dr. Schnittker's reasons will be more obvious when we recall the history of recent agricultural legislation: The original purpose of subsidy payment was to stabilize production—and thereby markets—through orderly crop reduction—diverting acreage from the raising of commodities. The Congress had once resolved to pay the farmer high price supports for his produce. That policy failed when it stimulated even greater production and brought a gigantic surplus. At one time those surplus commodities were worth $8 billion and cost as much as $1 billion per year simply to store. Thus U.S. farm policy was redirected to provide subsidy payments to farmers who limited production by diverting their land to nonproduction. Payments were awarded to compensate them for not using their most valuable capital asset—the land.

From some commodities, like feed grains and wheat, the purpose of limiting output was achieved. Fully 89 percent of all feed grain payments in 1968 were devoted to limiting output. For wheat, the figure was 51 percent and will increase in 1970.

For cotton, the story was different. In 1969, only 35 percent of subsidy payments went to limit production. In 1970, virtually all cotton payments will be for income supplements and not payment for production limitation.

Let me make clear at this point that I have nothing against cotton farmers. Raising cotton in the United States has been an essential part of our economic growth since the birth of the Republic, and I would not, under any circumstances favor compromising that portion of our agricultural output. I am flatly against the outrageously excessive payments to rich agribusinessmen and corporations who receive more than $20,000 in any year. It is necessary, however, to examine somewhat more closely the cotton program, since the brunt of my legislation will fall on the cotton agribusinesses who compose about two-thirds of the farm units whose payments would be affected by my bill.

Cotton acreage is not severely limited at present. In fact, the national cotton acreage allotment has been increased. As a consequence, Federal cotton subsidies go to enhance income, and not to limit production. Right now, the taxpayer is paying about $900 million a year to generate a cotton crop worth only slightly more than $1 billion. These "superpayments" of more than $20,000 to cotton agribusinesses only add insult to his injury.

Admittedly, farmers who produce only 2 percent of all feed grains and 3 to 4 percent of wheat would be affected by my bill. Some will suggest that this measure would discriminate against cotton since 28 percent of that crop would feel the impact of ceiling limitations. But the important point to remember is that these programs can be distinguished because wheat and feed grain payments are working: They limit production, cotton subsidies do not work. Instead they simply supplement income and most of these are incomes which do not need supplementing.

Some have objected that, if a subsidy limitation is enacted, cotton producers will simply shift to other crops like soybeans or corn and glut those markets. A Louisiana State University study, however, has recently demonstrated that even without subsidy payments, cotton is a more profitable crop than, for instance, soybeans.

Others have argued that the congressional purpose in payment ceilings would be evaded by means of farm splitting. My bill meets that problem headon. It provides the Secretary with authority to counter any attempt at avoidance of this limitation.

In conclusion, Mr. President, S. 3782 is intended primarily to cure a major flaw in the farm subsidy program—excessive payments to individual producers. But this long overdue legislation will do more: it will build a bridge of understanding between rural and urban America.

In our country, three out of four citizens are city dwellers, while only one of every 20 is a farmer. Because of the flagrant abuse of a program designed to assist the family farm, many city people picture the farmer as a wealthy property holder receiving vast subsidies from the Federal Government for doing nothing. The recent attention given by the national media to the 13,000 producers receiving more than $20,000 per year has presented the average citizen with an image of the farmer. To them he appears a bloated caricature; a rural Daddy Warbucks.

These 13,000 constitute a total of 0.51 percent of all subsidy payees. Any farmer, or anyone with family or close friends who farm, knows this caricature is a vicious libel to millions of honest hard working, frugal family farmers caught in the squeeze of rising costs and diminishing prices. The average farmer gets about $100 per month for deliberately leaving idle his most valuable asset and better than a third get no more than a dollar a day. In the meantime, far from sitting on the porch in his rocking chair, any farmer who is going to keep farming is out in the hot sun working with his hands on the hundreds of laborious, backbreaking, physically demanding jobs which must be done to keep a family operation going. His wife helps out, and so do his sons and daughters, and no group, no occupation, and no profession exceeds the contribution they make to our society. This is the true picture of the American farmer. I believe that my bill will go a long way toward dispelling the biased, distorted image many of our uninformed urban citizens have.

Mr. President, I urge the Committee on Agriculture and Forestry to consider this measure as early as possible and to report it favorably to the Senate.

Mr. President, I ask unanimous consent that the text of S. 3782 be printed in the RECORD.

There being no objection, the bill (S. 3782) was ordered to be printed in the RECORD, as follows:

S. 3782

A bill to limit the amount which may be paid to any producer in any year under programs administered by the Department of Agriculture for wheat, feed grains, and upland cotton to $20,000

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title I of the Agricultural Act of 1949, as amended, is amended by adding at the end thereof a new section as follows:

"SEC. 108. (a) Notwithstanding any other provision of law, beginning with the 1971 crop years, payments aggregating more than $20,000 for any year may not be made to any producer under any program administered by the Department of Agriculture for wheat, feed grains, or upland cotton.

"(b) Notwithstanding any other provision of law, where the Secretary determines that payments to any producer under programs administered by the Department of Agriculture for wheat, feed grains, and upland cotton will be reduced in any year as the result of the limitation prescribed by subsection (a) of this section, he shall increase the acreage on the farm which may be devoted to the production of the commodity or commodities concerned to such an extent and in such manner as he determines fair and equitable in relation to the amount of the payment reduction. Any producer who plants any acreage on the farm in excess of his base acreage allotment, as the case may be, under authority of this Act shall be deemed, for purposes of acreage history and marketing penalties not to have planted in excess of his base acreage or acreage allotment.

"(c) The Secretary shall not permit the sale, lease, or transfer of any part of the cotton acreage allotment for any farm if he determines that such action is intended primarily for the purpose of evading the limita-

tion prescribed by subsection (a) of this section.

"(d) As used in this section, (1) the term 'payment' includes payments in cash or kind and wheat marketing certificates but does not include loans or purchases, and (2) the term 'feed grains' means corn, grain sorghum, and barley."

SEC. 2. (12) of section 103(D) of the Agricultural Act of 1949, as amended, is repealed.

DEATH OF WILLIAM T. EVJUE, MADISON, WIS.

Mr. NELSON. William T. Evjue, one of the most respected and widely known names in Wisconsin journalism is dead at 87, and his death, while a personal loss to his family and friends, is a historic loss to the journalistic profession.

Bill Evjue belonged to a different period of American journalism. His had been an era of personal journalism and he was part of that time in history when the giant legends of newspapering were men of strong convictions and the unwavering courage to express them in their newspapers, no matter how dangerous the consequences of their actions might be.

From the time he founded the Madison, Wis., Capital Times in 1917 until his death early on the morning of April 23, Evjue directed his afternoon paper to voice progressive and liberal causes.

During the long years the Capital Times fought against prejudice, hate, and hysteria, Evjue ignored the threats and the economic boycotts and proclaimed that he and his paper stood for the tradition of old Senator Robert LaFollette's progressivism.

The Capital Times under Evjue came through one of the most turbulent periods in this Nation's history. Evjue fought against the persecution of German-Americans during World War I; vigorously stood against the Ku Klux Klanism of the 1920's; opposed the anti-Catholic campaign attacking presidential candidate Alfred E. Smith, of New York; supported the New Deal; attacked Hitlerism and Stalinism, and fought hardest against the hysteria of McCarthyism.

Unfortunately, there are too few newspapermen of the stature of Evjue, and it must have been his type of man and his kind of newspaper that Thomas Jefferson was thinking about when he wrote in 1787:

> The basis of our government being the opinion of the people, the very first object should be to keep that right; and were it left to me to decide whether we should have a government without newspapers or newspapers without a government, I should not hesitate a moment to prefer the latter.

I ask unanimous consent that editorials from the Capital Times and the Milwaukee Journal saluting the memory of William T. Evjue be printed in the RECORD.

There being no objection, the editorials were ordered to be printed in the RECORD, as follows:

[From the Madison (Wis.) Capital Times]

WILLIAM T. EVJUE: 1882–1970

"He held his place—
Held the long purpose like a growing tree
Held on through blame and faltered not at
at praise.
And when he fell—
He went down as when a Lordly cedar, green
with bows
Goes down with a great shout upon the
hills,
And leaves a lonesome place against the
sky."

—EDWIN MARKHAM.

William T. Evjue, the man who founded this newspaper, who nursed it through its most difficult years and built it into one of the most influential crusading dailies in the nation, has come to the end of a long, fruitful and stormy life.

No one knows better than those of us who were privileged to work for and with him what a remarkable personality he was.

He was a person in whom the warm juices of humanitarianism coursed vigorously causing him to dedicate a long life and his newspaper to the fight for social justice.

He was a superb editor who gave his paper a tone and tint like no other paper in the country and an influence far out of proportion to its circulation.

He was a businessman who understood that tough, realistic business principles were more vital to the survival of a crusading newspaper than to any other business.

But most of all he was a fighter—and it was this quality about him that made him the remarkable personality he was, whether as a citizen, an editor, or a businessman.

Only a fighter of his prodigious dimensions would have dared to establish The Capital Times when he did.

It was at the height of the hysteria of World War I when the super-patriots of the day were persecuting German-Americans and burning Old Bob LaFollette in effigy, that he founded The Capital Times and dedicated it to LaFollette's fight for social justice.

There were already two dailies in Madison, which reflected the war fever of the community. Any merchant who dared to advertise in the new paper was immediately subjected to boycotts. It would have been hard to imagine a more inauspicious time to found a newspaper.

But "Billy" Evjue, as LaFollette called him, had given up a promising newspaper career as business manager of the Wisconsin State Journal in protest against its unfair treatment of LaFollette. The State Journal editor, Richard Lloyd Jones, was one of the first to taste the fighting qualities which came to characterize his career.

He had been attracted by LaFollette's fight for political and economic reforms—the fight that was to give Wisconsin its Golden Era when it came to be known around the world as the "Ideal Commonwealth."

LaFollette had been inspired by the words of Chief Justice Edward George Ryan of the Wisconsin Supreme Court who raised this question to the graduating law class of 1873:

"Which shall lead—money or intellect; who shall fill public stations—educated and patriotic free men or the feudal serfs of corporate capital?"

As LaFollette was inspired to his historic fight by those words, Evjue was inspired to his by LaFollette. And he kept the words of Ryan before him and before the public in the 52 years that he made The Capital Times the unique voice it has become in the affairs of this state and nation.

The fighting qualities that dared to start The Capital Times were the essential vehicle to carry it through the floundering foundling years. Those qualities carried the paper through the cruel advertising and circulation boycotts and through the personal vilifications into the calmer financial waters that finally came.

They carried it through the succeeding waves of hysteria that swept over the nation.

In the 1920s, Ku Klux Klanism, with its squalid bigotry and hooded hooligans, swept into Wisconsin and Madison from the South. Battle was joined immediately, even though the militant, young editor knew that prominent Madisonians with power and influence were in the Klan, as were even some of his colleagues from the ranks of the Progressives.

Though the Progressives operated within the Republican party, Evjue broke ranks in 1928 to support a Democrat for president—Gov. Alfred E. Smith of New York whose progressive record had attracted national attention. A vicious anti-Catholic campaign was conducted against Smith and the fighting editor was called on to fight his way through that.

He carried the fight to the enemies of the New Deal and to Hitlerism and Stalinism. It was natural that the phenomenon of McCarthyism should have been reflected in this state in mortal combat between him and Joe McCarthy, against whom The Capital Times declared war long before he became the symbol of demagogy in our time. It was clear that this was to be a fight to the death, for two such opposites could not exist in the same political domain. He always regretted that death took McCarthy before decision came in the political arena.

In many respects his fight against McCarthy gave him more satisfaction than any of the turbulent battles of his career.

His campaigns against McCarthy's tax-dodging, debauchery of his judgeship, his bullying of innocent little people, his demagogy and his exploitation of his service record, established The Capital Times as the authority on McCarthy across the nation.

His hatreds ran deep. As a boy in the lumbering town of Merrill he hated the injustice that made virtual slaves of men working in the lumbering industry.

As a student he hated what he saw being done to LaFollette who wanted to reform an unjust society and a corrupt political system.

He hated corruption, waste, special privilege, poverty, bigotry and people who pushed others around and his paper reflected those hates.

He hated conformity. It was natural that he should have found himself aligned in this state with two such towering individualists as LaFollette and Frank Lloyd Wright, without doubt the two most famous men Wisconsin has produced.

He often mused at the irony of the conformists paying devout lip service to individualism but, who, when confronted with real individualism, hung false labels like "Communist" on it, as they did with LaFollette and Wright—and with him.

In his thundering editorials and his Sunday radio addresses he called on his readers and listeners to resist "dumb conformity." And he lashed at his fellow editors over the state for allowing their papers to become part of the Establishment.

He hated secrecy in government because he knew it was the screen behind which graft, corruption and special privilege flourish. He challenged it wherever he found it. His reporters and photographers were thrown bodily from meetings, were beaten and vilified.

He used open inspection of income tax returns to expose tax dodgers, grafters, the privileged and the racketeers. His campaigns sent public figures to jail for betrayal of their public trust and brought countless reforms to state and local government.

His exposure of the huge windfalls going to the wealthy of the state forced the repeal of the tax exemption on dividends from Wisconsin corporations. It cost him thousands but he paid it cheerfully as the price to end a special privilege he hated.

Open income tax inspection was the weapon he used to expose the huge profits the banks of Wisconsin made from a privileged tax loophole. His campaign so infuriated the bankers they demanded and got from a meek Republican legislature a law imposing income tax secrecy. But he continued to hammer away at the exemption and finally forced reform of the tax loophole.

He believed that newspapers had a special responsibility imposed by the special privilege granted under the constitutional guarantee of a free press. He was Jeffersonian in his belief that free government could not exist without a free press.

A genuine free press, he said, dedicated itself to providing the information necessary to the public decision making required in a democracy. All doubts at The Capital Times were resolved in favor of providing the fullest and freest discussion possible.

Newspapermen, he believed, were the natural enemies of politicians and public officials who must control information if they are to perpetuate themselves. It was the job of the press, he said, to see that they didn't get away with it.

He never hestitated to excoriate his colleagues among the editors and publishers for failure to live up to their responsibilities. He insisted that the best way to improve the press was hard-hitting mutual criticism and his feuds with editors across the state became famous.

He had a special concern for the young and encouraged them to challenge their elders and the rules of the Establishment. University students always found him an eager champion. His battles with University administrators, regents and public officials in defense of freedom for the Daily Cardinal and free student activity would fill a book.

This state has never had a more resolute champion of the University's famed "fearless sifting and winnowing" slogan.

He leaves a commonwealth much better for his having lived. And he leaves a legacy to inspire those of us on The Capital Times who survive him.

On the occasion of the 50th anniversary of The Capital Times, Dec. 13, 1967, he wrote these words to sum up that legacy:

"The road for mankind leading to the 100th Anniversary of The Capital Times will be long and difficult. That is the message I get from the brilliant articles in this 50th Anniversary Edition.

"I conclude this happy day with this promise for the stormy days ahead: The Capital Times will always fight for justice and for peace. That is my wish."

We on The Capital Times who have been privileged to work with a great editor and a fighter for social justice can find no better response than the words of Oliver Wendell Holmes on a similar occasion:

"We gather at the side of the fallen leader, not in sorrow at the inevitable loss, but with the contagion of his courage we go back to the fight."

[From the Milwaukee (Wis.) Journal, Apr. 28, 1970]

WILLIAM T. EVJUE

The "Wild Bill" of Wisconsin journalism, now dead at 87, William E. Evjue was a "fighting editor" by design as well as by instinct. He chose that label for himself in the title of his autobiography. It was both his delight and his studied journalistic policy to lay about him with a cudgel.

To have this freedom he had to found his own newspaper, Madison's Capital Times, in 1917. His personality and views and prejudices dominated it. This made him a throwback to the great days of "personal journalism" in the 19th century.

Despite many vagaries, wrong scents and wild goose chasers stemming from a deliberate policy of belligerence and suspicion, it has been good for Wisconsin to have a representative of this kind of journalism. Every society, every government, every political party is the better for being under the searchlight of a severe critic—even one not always just and fair—a prod, a gadfly. And this was Bill Evjue.

Evjue's political loyalty was to Wisconsin Progressivism with a capital P. He was managing editor of the old Wisconsin State Journal when it broke with Sen. Robert La Follette Sr. over the latter's opposition to World War I. Evjue founded a paper that would support La Follette. It was a fierce struggle against the hostility of superpatriots and an advertising boycott, but Evjue won an audience and the paper survived. It was his finest hour.

When the Progressive Party as such dropped out from under him in 1946, Evjue's paper became Democratic but not with the same unquestioning loyalty. He never ceased to keep track of the "old Progressives" and keep them in the news, so identified. He scolded Democrats as mercilessly as anybody when they defaulted, in his eyes, on what he regarded as their Progressive heritage.

Evjue was a bundle of prejudices. That's human enough, but he wore his on his sleeve and had a showcase for them. One was always handy as a mold to fashion his editorial view of any subject. So everything came out black or white, great or terrible, simon pure or vicious and evil. He thus oversimplified many complex issues of government and politics, but that is what made him, as he liked to think, the Public Conscience.

He was a crusader against alcohol, especially at cocktail parties by lobbying interests—"orgies" in the Capital Times. He was prolabor editorially but was reputedly tightfisted among his employes. He published daily reminders to "feed the birds!" or "save the trees!" He gloried in all things Norwegian and kept his readers posted on them. He loved his native city of Merrill and his boyhood friends there, and kept Madison posted on them, too. He was an intimate of, and publicist for, Wisconsin's other great iconoclast, the late Frank Lloyd Wright.

A strange, mixed wonderful, outrageous man was Bill Evjue. He put spice into the flavor of Wisconsin, and his passing is a sadness.

EMERGENCY HOME FINANCE ACT OF 1970

Mr. PACKWOOD. Mr. President, last week I sent a letter to Chairman WRIGHT PATMAN, of the House Committee on Banking and Currency, requesting action on the Emergency Home Finance Act of 1970. This act already has passed the Senate. I was informed this morning that the committee, under the able direction of Representative PATMAN, will consider the proposal immediately. I am delighted by the action.

The act, supported by the Nixon administration, would have the effect of channeling additional money into the tight home mortgage market and could have the additional effect of contributing to a lowering of home interest loans. Admittedly, it is not a cure-all to the Nation's housing woes, but it could represent a significant breakthrough at a time when the Nation's housing program is in desperate need of a tonic.

We can all agree that the need for more and better housing is one of the most critical needs facing this Nation. It is a fundamental need.

My State is heavily dependent on the sale of timber and wood products for economic survival. One has only to glance at the unemployment rate in this country to know that Oregon is one of the hardest hit of the 50 States.

The people in my State want to work. They are a strong-willed people, eager to make a contribution to their State and to their Nation. They believe this contribution can be made by working, by paying taxes, by providing the ingredients necessary to meet one of the Nation's most critical needs—adequate housing. I want something done so that my people can go back to work.

I ask unanimous consent that a report prepared by the State of Oregon Employment Division dated May 1, 1970, and the excerpt I mentioned, from the April 27 issue of Time magazine, be printed in the RECORD.

There being no objection, the items were ordered to be printed in the RECORD, as follows:

SUMMARY OF WOOD PRODUCTS INDUSTRY, MARCH 1970

(Prepared by Garrett B. VanHorn, State Labor Analyst, May 1, 1970)

STATEWIDE SUMMARY

There are 357 *sawmills* in Oregon. Seventeen were closed either temporarily or permanently during March. Of 133 *plywood and veneer* plants 19 are now inoperative. There are 315 *other wood products* firms of which 15 are currently down. *Logging* firms number 1,229 but no accurate count of closure is readily available. Certainly there are a number down but to ascribe economic reasons to their closure would be unwise at this time of year.

Employment in lumber and wood products fell by 6,800 jobs between March 1969 and March 1970. The split was about even with logging and sawmills dropping 2,900 and plywood and veneer off by 2,800.

The total number of mill closures is relatively small compared with the 1966–67 period. At that time large numbers of marginal firms were eliminated and have not come back. The major source of employment reductions have come from production cutbacks. Employers are trying to retain their skilled work forces. Most current closures are from smaller and less well financed operations who do not have large supplies of timber.

Total unemployment in Oregon was a seasonally adjusted 5.3 percent of the labor force in March. During March 1969 the level was 3.7 percent. Industries other than wood products have suffered substantial work force reductions in recent months.

District 1 (Tillamook and Clatsop Counties)

Logging and Sawmills: During the year employment in *logging and sawmills* has declined 2.3 percent. From 1,415 in February 1969 to 1,383 for February 1970. One mill closed down during the period because of a fire. It is presently using part of the original crew for reconstruction.

Plywood plant employment has dropped by 14 percent in this two-county area. During February 1969 there were 800 employed in this industry segment. There were an estimated 688 employed in plywood production for February 1970. There have been some temporary closures but all mills are currently in production though well below capacity.

Other wood products firms consist primarily of shingle mills. Employment remains at approximately the same level as last year, 167. During the past year there have been three permanent mill closures and two facilities have opened up.

Unemployment in the district is above last February by 90 persons. The February 1969 level was 1,250 unemployed representing 7.2 percent of the labor force compared with 1,340 and 7.7 percent this February.

District 2 (Multnomah, Clackamas, Columbia and Washington Counties)

The lumber industry in the Portland area is being affected by the nationwide slowdown. While there have been no facility closures, retrenchments have definitely taken place. There were 400 fewer employed in

the industry during March 1970 than there were one year ago. This is a decline of 4.3 percent. The major reductions have occurred in plywood with sawmills and other wood products also down slightly. Total unemployment for March 1970 was 23,800, a rate of 5.2 percent. This compares with March 1969's 14,300 and 3.2 percent rate. The bulk of the increase in unemployment has come from manufacturing other than wood products.

District 3 (Marion, Polk and Yamhill Counties)

Yamhill County has been only slightly effected by lumber industry cutbacks. Total lumber employment in March 1970 was estimated at 810 compared with 820 one year earlier. There are two fewer sawmills operating since last year (one of these was a family operation the other employed 80 workers). There is one veneer mill closed temporarily. Its operation has been spotty all year long. The mill employs about 55 workers.

Unemployment in Yamhill County numbered 1,480, or 10.7 percent of the labor force in March. This compares with 870 and 6.6 percent one year ago. March of the increase in unemployment for the area has resulted from the commuters who work in Portland and live in this county. Manufacturing other than wood products has also contributed.

Marion and Polk Counties are short two very small sawmills compared with last March. One was a family operation; the other employed one person. Total employment in the Salem SMSA's lumber industry is down by 200 or 7.4 percent compared with last March. The pattern of production curtailment is evident here as in the rest of the state plywood employment has taken the brunt of the downturn.

Total unemployment in the two-county area was 5,500 in March, 7.9 percent. March 1969 unemployment numbered 4,000 and 5.8 percent for an increase of 37.5 percent over the year. Other durable goods manufacturing and construction have shown substantial yearly declines.

District 4 (Benton, Lincoln and Linn Counties)

Benton County wood products employment is down from last year by approximately 350 workers. There is one plywood temporarily closed and the rest are operating on a curtailed basis. Sawmill employment is 175 below last year's level. One mill is currently closed and the balance are operating on reduced schedules.

Linn County wood products firms are operating on a day to day basis. Few workers are currently laid off, but hiring is also severely curtailed. The spring upturn has not yet begun.

In Lincoln County there are approximately 150 fewer wood products workers employed than were one year ago. Some returns are expected during the next two weeks. Additional layoffs are also expected, however. No plants are completely closed but reduced production schedules are the rule.

For the three county district the number of unemployment claims against the wood products industry during March is 299.5 percent above the March 1969 level.

District 5 (Lane County)

The Eugene area is perhaps the hardest hit in the state by the wood products slowdown. Unemployment is up by 2,250 or 53.6 percent compared with March 1969. Employment in lumber and wood products at 12,800 for March is down 2,000 or 13.6 precent. The 6,450 unemployed in March totaled 7.7 percent of the labor force. March 1969 total unemployment was 4,200; a rate of 5.0 percent.

There are 48 sawmills, 37 plywood and veneer mills and 218 other wood products firms (including 180 logging) in the county. Currently there are 28 firms closed. Eight sawmills, thirteen plywood mills and seven other wood products firms. One year ago four sawmills and eight plywood mills were down.

Most other operations in the area are working on reduced schedules. The smaller operations are predominant in the shutdowns.

District 6 (Douglas County)

Douglas County has felt the effects of our lumber slowdown in its smaller communities. One year ago there were two temporarily closed plywood firms and currently one veneer and one plywood mill are temporarily closed. In between times there was one permanent closure of a plywood mill employing 350 workers (7–1–69). One large lumber mill was closed during July 1969, and during February 1970 one plywood mill and one veneer mill were closed. In other words operations are spotty. All mills have eliminated overtime and pared crews to some extent.

Total lumber and wood products employment was 7,180 in March, down 8.3 percent from March 1969's 7,830. Total unemployment in March was 2,530 and 8.9 percent compared with 1,560 and 5.6 percent last March. This is an increase of 62.2 percent in the country's unemployment compared with one year ago.

District 7 (Coos and Curry Counties)

There are no wood products firms presently closed in Coos County. None were down one year ago. During late fall 1969 one plywood mill employing 150 was down for two months in Coos County. In Curry County one plywood mill with 210 workers was closed from September 1969 to March 1970. One plywood mill with about 65 employees closed July 1969 and is not expected to reopen until June.

Total lumber employment in the two-county area was 7,070 for March 1970, down 3.5 percent from one year ago. Unemployment, totaling 2,230 (8.1%) is 18 percent higher than one year ago. March 1969 unemployment was 1,890, 7.0 percent of the labor force.

District 8 (Jackson and Josephine Counties)

The combined lumber and wood products work force is 6.0 percent below normal operating levels for this time of year. Some mills are experiencing difficulty obtaining logs and stumpage prices are affecting others.

While there are no current or year ago closures to report several plywood and a few lumber mills have drastically reduced operations others have trimmed back and there is virtually no overtime work at any mill.

Josephine County had 2,290 unemployed in February, a 16.5 percent rate. February 1969 unemployment was 1,970 and 15.1 percent. Jackson County unemployment numbered 3,810 in March for a 9.7 percent rate. The year ago comparison shows 2,650 unemployed and 7.1 percent.

District 9 (Hood River-Wasco and Sherman Counties)

Employment in the lumber and wood products industry is about even with last year. There has been one small sawmill closure since last March.

District 10 (Jefferson, Crook, and Deschutes Counties)

Basically there is a slower seasonal pickup occurring in the tri-county area. One small sawmill is temporarily closed and there is one new operation. One plywood mill was closed in July 1969 and remains down. In other wood products mouldings plants are running with reduced crews and one box company is down.

District 11 (Klamath and Lake Counties)

Klamath County mills are all operating as they were one year ago. Substantial reductions in plywood employment have occurred and most overtime has been eliminated.

Three box manufacturing firms in Lake County are closed as is one veneer plant. The veneer plant is down because of cold temperatures and frozen logs.

Wood products employment in the two county area was estimated at 3,610 for March, down 320 from last year.

Total unemployment in the two counties was 1,750 (7.4 percent) in March compared with 1,340 (6.0%) one year ago.

Districts 12, 13, 14 (Gilliam, Wheeler, Morrow, Grant, Umatilla, Union, Wallowa, Baker, Harney, and Malheur Counties)

Wood products employed in this large eastern portion of the state is operating at below par levels like the rest of the state. The severity of the cutbacks is not as pronounced as in other areas, however. Unemployment is also somewhat higher but largely because of construction completions. One other wood products firm closed permanently last month. It employed 35 workers.

[From Time magazine, Apr. 27, 1970]

THE ECONOMY: A GUIDE TO THE SLUMP

Economic news out of Washington took an encouraging twist last week as the Government reported upticks in three key indicators. From February to March, housing starts rose 6%, personal income climbed, and industrial production increased by (0.2%) for the first time in eight months. On the other and, the annual rate of price increases in the year's first quarter speeded up to 5%, slightly more than in the previous quarter, meaning that inflation was as bad as ever. At the same time, a preliminary estimate showed that the first quarter's real gross national product, after discounting price increases, slid by 1½% to an annual rate of $727 billion. Since that was the second straight quarter of decline, economic purists could declare that the U.S. is—or was—officially suffering from recession. Yet the dropoffs have been so small, compared with the severe slumps of the 1950s, that most economists refuse to classify the current period as more than a mini-recession.

Besides, the declines are spotty. Today's economy is a mosaic of sharply clashing regional patterns. Some areas of the U.S. are enjoying an all-out boom; others are in an alarming slump.

The whole nation shares certain economic headaches. Despite last month's rise, housing construction almost everywhere in the U.S. is still down substantially from a year ago. Jobs are difficult to locate even in areas where unemployment rates are below the national average of 4.4%. Students in particular will have to fight one another for summer work. In prosperous as well as troubled areas, corporate profits are taking a beating. This reduces the tax take of state and local governments, which are also hurt by hold-downs in federal aid and the extreme difficulty of selling their bonds in a depressed financial market.

The regional pattern, ranging from the worst hurt to the least affected:

THE PACIFIC NORTHWEST

For gloom, this region is in a class by itself. March unemployment in the Seattle area jumped to 7.4%, up more than two points in a month and well over double the 3.2% rate of a year earlier. Reason: severe layoffs by Boeing (Time, March 9). The electric utility Seattle City Light reports that its annual rate of cancellations and shutoffs has been double the usual 5%, indicating that many peopel are fleeing the area to scout for work elsewhere. For the jobless who remain, the Washington state legislature has voted to raise unemployment compensation from a maximum of $40 a week to $70.

Oregon's economy, heavily dependent on lumber, has been shaken to the roots by the fall in home building. Unemployment has scaled an eight-year high of 5.3%. Department-store sales are off 9% from last year, and a significant decline in tax collections has forced the state government to freeze all construction projects.

A species of economic black humor has developed. Bankers who invite businessmen to lunch tell them that the free meal is all the help that their bank can give in 1970. One banker cheerily explains the meaning of the recent prime-rate cut: the money that business once could not borrow at 8½ is now unavailable at 8%. Portland brokers have started a betting pool on which firm will go bankrupt first—and when.

CALIFORNIA

The most populous state is, as usual, a world of its own—or rather two worlds. In Southern California, aerospace cutbacks have been slashing payrolls for more than two years. The situation is better in the state's central and northern areas, which are less dependent than Southern California upon the whims of the Pentagon and NASA. In the San Francisco area, where the unemployment rate exactly matches the national average, few people are losing jobs, but even fewer are finding new ones. One employment agency is vainly trying to place 32 computer programmers who probably could have written their own ticket a short time ago.

NEW ENGLAND

Since last June, says University of Connecticut Labor Economist David Pinsky, the six New England states have lost 53,000 factory jobs. They stand to lose another 150,000 in the next twelve months—50,000 in Connecticut alone. The jobless rate in that state, a leading producer of military supplies since the Civil War, has already risen to 4.5%. In Massachusetts, partly because of lower profits and smaller tax payments by some companies, Boston is running out of the cash necessary to finish three almost-completed projects—the Government Center and two public housing complexes—and four half-done projects.

THE MIDWEST

The slump in auto sales (*see following story*) has pushed Michigan's unemployment rate to 6.3%. Layoffs outside the auto industry are also starting to hurt. Three TV-set makers—RCA, Zenith, and Motorola—recently idled 15,000 workers in Illinois and Indiana. Overall employment is still going up in the Midwest, but not nearly fast enough to match the increase in the number of people—largely women and returning servicemen—searching for employment. Factory overtime, partime work and moonlighting jobs are fast disappearing.

THE SOUTHEAST

Auto and defense-plant layoffs are swelling the Southeast's unemployment, though it is still below the national average; the jobless rate in Georgia, for example, rose to 3.8% in February, up from 2.5% a year earlier. Home building in some parts of Kentucky has stopped entirely; in March, the city of Louisville (pop. 392,000) issued a grand total of one building permit. Company personnel men notice less job-switching, indicating that employees feel that this is not the time to take chances by moving to new positions. For this summer, employers in Nashville expect to offer only about 1,000 jobs to 10,000 student applications.

THE MIDDLE ATLANTIC

The armies of office and service workers are in no danger of idleness, but manufacturing payrolls are starting to shrink. A general nervousness is in the air. In Delaware, a prosperous white-collar state, a decline in Du Pont profits that began last year is expected to force reductions in state spending—most likely for educational television and enforcement of antidiscrimination laws. The Pennsylvania government had to extend an extra $15 million in aid to Philadelphia to avert a shutdown of the city's schools at the end of May.

THE SOUTHWEST AND ROCKY MOUNTAINS

Many parts of these Western regions are still growing strongly, because fresh money continues to pour into their relatively new industries. Unemployment in Houston is a modest 2% of the labor force; the few employees let go by the Manned Spacecraft Center have been quickly hired by other industries. Though sections of the Rocky Mountain region face unemployment problems, a surge of commercial construction is remaking Denver's skyline and creating new jobs. Projects abuilding range from a $5.2 million United Air Lines reservation system center to a $300 million commercial, industrial and residential complex called Front-Range Denver.

ALASKA

The North Slope oil strike has produced the sort of rip-roaring boom that is just a memory in most of the "South 48" states. While unemployment still runs high among the Eskimos and the Aleuts, the oil workers' only problem is getting time off. North Slope truck drivers earn $76 a day, Monday through Friday, and $100 a day on Saturday and Sunday—but they work six weeks straight before knocking off two weeks to rest.

These extreme variations in regional business point up a major problem for Washington's economic planners. Even if they properly gauge the nation's overall economic needs—a rather gigantic if—the U.S. is so diverse that their policies are bound to have an unequal impact across the country. That underscores the urgency of adverting a real recession. Nationally, the suffering caused by a sharp recession would be bad enough; in the hardest-hit regions, it would be intolerable.

THE ECONOMY UNDER NIXON

Though Administration officials figured that last week's statistics showed that the worst of the slowdown may be over, nobody was trumpeting that inflation has been beaten. The President's policy of controlling inflation by deflating business has been only half successful. It has stunted economic growth for many months but not yet significantly slowed price increases. A listing of some economic barometers since Nixon's first full month in office:

	February 1969	Latest	Percent change
Industrial production	170.1	170.2	+0.001
Unemployment, percent	3.3	4.4	+33.3
Prime interest rate, do	7	8	+14
Dow-Jones industrial average	905	776	−14
Consumer Price Index	124.6	132.5	+603

18-YEAR-OLD VOTERS

Mr. TYDINGS. Mr. President, last month the American Jewish Committee, the Nation's oldest human relations agency, endorsed the 18-year-old voting provisions of the 1965 Voting Rights Act extension. This endorsement was part of a larger recommendation of the committee urging a greater degree of political participation by all members of our society. The report also suggested that the Bicentennial Commission set a goal of 100 million votes in the 1976 presidential elections. I think this is a brilliant idea: a target that can be reached in 6 years and one that reflects a renewed and continuing dedication to our democratic system.

The entire proposal and recommendations of the American Jewish Committee reflect a sensitive awareness of the difficulties we face as a democracy—especially amongst our young—and a sensible program to help combat these troubles with increased participation and vigor for our political processes.

I ask unanimous consent that the recommendations of the American Jewish Committee be printed in the RECORD so that other Senators may read this insightful report and consider its well-advised recommendations.

There being no objection, the report was ordered to be printed in the RECORD, as follows:

A PROGRAM PROPOSAL FOR THE BICENTENNIAL COMMISSION: 100 MILLION VOTERS BY 1976

The American Jewish Committee agrees with President Nixon that the 200th anniversary of the birth of our nation should be taken as an opportunity to make a dedicated effort to fulfill those national aspirations yet unattained. Recognizing the importance of the electoral process as the cornerstone of American democracy, we urge that one central goal of the Bicentennial be greater participation in the political process, with special emphasis on the fullest possible exercise of the right to vote.

The AJC urges the Bicentennial Commission to initiate at once a program involving both public and private efforts to best realize the objective of full electoral participation. As a symbol of this goal, we propose that we seek to involve at least 100 million voters in the Presidential election of 1976.

In 1968, seventy-three million citizens voted their choice for President and Vice President, but there were an additional 47 million Americans old enough to vote who did not vote. This voting participation rate of 61 percent is substantially below that of most democratic nations.

We seek to increase the number of American voters, but we must seek more than an increase in numbers. There must be also an increased involvement in every phase of the political process if we desire an increased confidence in our political system.

One of the great guiding themes of our democracy is that government "derives its just powers from the consent of the governed." There is no greater single manifestation of that consent than the vote. Yet, the tragic fact is that in the 1968 Presidenial election only 3 out of 5 eligible Americans registered their consent, or lack thereof, to the programs enunciated by candidates for the highest office in the land. More than one-half of the nonvoters in the 1968 Presidential election, moreover, reported that they were simply not interested in voting. At a time when the decisions of our government vitally affect all our people, the sense of alienation, disaffection or apathy that such non-participation conveys is a tragic commentary on our times. Quite simply, people who vote feel that they have a stake in and a sense of connection to the government. People who don't vote are saying that they as individuals do not count or, what is worse, that the democratic institutions do not count. Much greater efforts must be made, therefore, to persuade these nonparticipants that an individual's vote does count, and, at the same time, that it can be made more effective and meaningful.

The national participation rate of 61 percent is bad enough; the rate for state and local, including Congressional, elections is even worse. In most local elections less than half of the potential votes is cast. Every town, county, and city must be brought into this national effort to increase and deepen voter participation.

Not all of the voting gap is due to indifference, of course. Obstacles to voting, whether due to racial discrimination, residency requirements, or other factors, must finally be completely eliminated.

THE 100 MILLION GOAL

As a dramatic symbol of our concerns, and as an ambitious yet realistic undertaking, we recommended that at least 100,000,000 voters in the election of 1976 be declared as a Bicenntenial goal. The goal is clearly attainable:

If the present participation rate of 61 percent continues until 1976, about 8 or 9 million additional voters would participate that year as a result of population growth alone; if the 18-year-old vote is operative that year (a goal which AJC enthusiastically supports), this would add about another 5 or 6 million voters.

These two developments alone would increase the total vote to about 87 or 88 million.

Increasing the participation rate to about 70 percent from the present 61 percent would add another 13 or 14 million voters in 1976—thus reaching the 100 million goal. As the following will indicate, this should be possible if a concerted drive is conducted over the next six years.

Of the 47 million Americans who failed to vote in 1968:

About 8 million were actually registered but failed to vote;

About 8 million more were unable to register under state eligibility requirements, of whom 5 million were eliminated because of state residency rules; and

About 31 million either did not even try to register to vote or were prevented from so doing, for one reason or another.

If 11 million of these 47 million had voted in 1968, the participation rate that year would have been 70%. Surely, this should have been possible.

RECOMMENDATIONS

We recommend that a broad array of programs, involving all the major groups in American society—government at every level, the educational system, the political parties, business, labor, the wide range of civic and social organizations, the media—be developed to:

1. Increase the number of people involved in the electoral process;

2. Encourage participation by a greater number of people in the larger political process, i.e., party primaries, caucuses and convention; campaigning; voter-registration drives.

3. Enhance the quality of voter participation through a program of education in the essential processes of democracy and the great documents on which they are founded.

CLOSING THE MINORITY VOTING GAP

Due primarily to the 1965 Voting Rights Act—but due also to greater voter consciousness and confidence in the electoral process—the Sixties saw an increase of over 1½ million Negro voters in the South. The significance of this trend is clearly evident in the fact that the number of black elected officials in the 11 Southern states rose from 70 in 1965 to more than 500 in 1968. In turn, this pattern has further increased interest in the electoral process and even higher registrations can be expected in the years ahead.

But the voting participation rate for Negroes, for Puerto Ricans, for Indians, for Spanish-speaking Americans remains substantially below that of the general populace. Renewal of the Voting Rights Act for another five years (and with the addition of a national ban on literacy tests) should provide the basis for continued gains in minority voting patterns. But rigorous enforcement by the Federal government must be pursued if the full effect of the law is to be realized.

Federal law alone, however, will not produce the level of black and other minority voting needed to close the gap. Every ruse to disenfranchise the minority citizen (de jure or de facto) must be eliminated: redistricting, use of at-large elections, obstacles to becoming candidates or delegates, rigged nominating and related procedures, lack of adequate polling facilities—to say nothing of continued use of harassment and intimidation to discourage registration or voting.

YOUTH—A SPECIAL CHALLENGE

The American Jewish Committee is pleased to note that the likelihood of lowering the voting age to 18 has been greatly increased as a result of the Senate's action in adding this provision to the Voting Rights Act. If the House should refuse to go along—and it is our hope that it will go along—then the Congress should proceed immediately to initiate the Constitutional amendment process toward the same end.

Whatever else might be said about today's youth, it is more informed and more involved in the major issues of our times than any preceding generation. But it is not sufficiently involved politically. It therefore too often looks for and adopts extra-political and extra-legal ways to correct the social ills which it perceives. The very preservation of our democratic way of life may depend on the success we have in bringing our young people into the political process—not only in that final act of voting, but in the full range of political action.

While we work toward a lowering of the voting age, it is important to cite the fact that the youngest group of those now eligible to vote actually have the *lowest* participation rate. In 1968, the 21–24 age group had only half the participation rate as those in their middle-age. This regrettable fact, instead of being used as an argument *against* lowering the voting age, reminds us rather that making the vote possible is only one-half the job facing us; we must make the vote seem relevant and significant.

RESIDENCY OBSTACLES

In the 1968 Presidential election, about 5 million otherwise eligible voters were barred from voting because of state residency requirements. In this mobile society of ours, over 20 percent of all Americans move every year. It is therefore only right that new state residents be allowed to vote in a Presidential election, regardless of the length of time they have resided in the new state.

Similarly, in state and local elections there should be the least possible restrictions on the right to vote because of residency.

FACILITATING VOTER PARTICIPATION

More important even than elimination of literacy tests is the elimination of illiteracy itself if full and meaningful participation is to be achieved. While there are of course other vital reasons for the total eradication of illiteracy in America—and this might well be a major Bicentennial program itself—greater political sophistication and discrimination requires the ability to read, to understand, to communicate.

Both government and the private sector should develop improved programs to foster better understanding of the rights and duties of citizenship and the significance of voting. Better use should be made of programs of adult education, literacy and community action which are administered, at the Federal level, by HEW, the Departments of Labor and Agriculture, and the Office of Economic Opportunity. At the State and local levels, there are innumerable activities that could appropriately add or extend citizenship education. There is almost no limit to what more could be done by the hundreds of national private organizations—religious, women's, veterans', student and youth, fraternal, etc.

The proposal for a National Election Holiday should be given careful consideration and, if found feasible, enacted in time for the election of 1976. Further study should be encouraged on most appropriate hours for registration and/or voting, location of voting facilities, greater use of absentee ballots, and every other aspect of the electoral process which could affect the level of participation. Both the business and the labor communities should examine what more they could do to increase participation.

CHALLENGE TO STATE AND LOCAL GOVERNMENTS

The Bicentennial Commission should urge every state and local jurisdiction to become part of this program. If the 100,000,000 goal is to succeed, every county in the nation should set a goal for itself—not only one for 1976, but interim goals for every year till then. Governors should charge each state Bicentennial Commission with particular responsibility for this program. As indicated above, political participation rates in many states and localities is shockingly low.

CHALLENGE TO EDUCATIONAL INSTITUTIONS

The role of education in expanding and improving the electoral process is self-evident. From the grade schools through graduate work, there is an urgent need for improved curricula, for better materials, for easier access to people and information. Efforts should be made to involve the students actively in some aspect of the political process, as well as in the classroom.

THE POLITICAL PARTIES HAVE MAJOR RESPONSIBILITY

After all is said and done, of course, the prime responsibility in a free society must be that of the political instrument itself. Government can and should eliminate barriers. But it cannot force participation. We do not seek to achieve the 99% participation rates of totalitarian regimes—at the cost of our freedom. The parties in a democratic society, moreover, must not be authoritarian or totalitarian themselves.

Each of our parties should be encouraged, during this Bicentennial period, to make an active effort to encourage young people, new voters, Blacks and other minorities, and all other groups that have hitherto remained pretty much outside of the political process, to participate in party activities, from the precinct level to the national commitee level.

If each potential voter is to take that crucial step of voting on Election Day, he must not be permitted to feel that the final choices available to him were decreed by a handful of individuals, that his views and preferences had not been solicited, that the real issues of the day had not been truly involved in the selection of candidates.

Each party must examine its entire structure and its operations—to make sure that they are fully responsive to the needs and the desires of the citizens who support that party.

CONCLUSION

As the nation's oldest human relations agency, the American Jewish Committee is deeply committed to the democratic system. We are disturbed by evidences of alarming numbers of people who have abandoned faith in the ability of that system to provide justice and progress and security. Their disaffection, their alienation, their apathy is too frequently reflected in their failure to participate in the political process, especially in exercising their right to vote.

We urge the Bicentennial Commission to set as one of the goals in its general plan "to fulfill those national aspirations yet unattained" the fullest possible participation by all Americans in the political process which our Founding Fathers so carefully designed, including the power to effect changes in that process itself.

As a symbol of that greater participation, we have proposed the goal of 100,000,000 voters in the Presidential election of 1976. With such increase in numbers, moreover, we hope that at every step in the political process there will be greater and deeper involvement by more Americans. These goals will be achieved only if government at all levels, our private institutions, the media, and our edu-

cational institutions all play an active role. We are confident that, in such an effort, all of these institutions will indeed do their part. They should be challenged to do so.

OIL AND SHOE IMPORTS

Mr. HANSEN. Mr. President, the mandatory oil import program, which has stirred such a controversy, apparently is not very well understood by some of its critics.

When first established in 1959 by President Eisenhower, the program was intended to set some reasonable levels for foreign oil to supplement U.S. domestic production. The program was implemented, in the first place, because of the breakdown of a voluntary plan, under which foreign oil had reached such proportions, that the President issued a proclamation making the program mandatory.

Mr. President, the circumstances today are little different from those of 1959 which convinced the President of the necessity of imposing mandatory quotas. In fact, the words of the Director of the Office of Civil and Defense Mobilization that "imports of crude oil and its products and derivatives were threatening to impair the national security," are even more valid today as we assess the shaky balance of power and peace in the world.

At that time, the Director of the Office of Civil and Defense Mobilization—now the Office of Emergency Preparedness—told the President that:

> It is my considered opinion that the present rate of imports of crude oil and its derivitives and products is a major contributing factor to the *decline in drilling operations* both for exploration and development in the search for new oil reserves. Continuation of this trend will inevitably result in a lowering of our *available reserves*.

In the same report, the Director said:

> The consequences would continue to upset a reasonable balance between imports and domestic *production*, with deleterious effect upon *adequate exploration* and the *development of additional reserves* which can only be generated by a healthy domestic *production* industry.

It has been said that those who cannot remember the past are condemned to repeat it.

From 1959 until late in 1965, the administration of the program was concerned primarily with various means of dividing the total amount of imports among oil companies which were participants in the control plan. Late in 1965, however, and in subsequent years, there has been injected into the program a profusion of special treatment provisions which threatened to undermine the program by destroying confidence in its administration and by creating special situations both within and without the controlled levels.

Because of those and other pending applications for other exceptions and exemptions for purposes entirely unrelated to the preservation of national security, the President established the Cabinet Task Force on Oil Import Controls to conduct a comprehensive study and to recommend revisions.

The crux of the current controversy is, of course, the recommendations made by a majority of that task force for a plan which would substantially increase imports and force the price of domestic crude down in time to lower foreign prices.

As I have repeatedly pointed out, such a plan ignores the past and the national security provisions of the Trade Agreements Extension Act, under which the program was authorized, and would soon result in U.S. dependence on foreign sources for its principal source of energy for the foreseeable future.

Like my good friend and colleague, the distinguished Senator from New Hampshire, TOM MCINTYRE, critics of the program want more cheap imported oil and oil products for their constituents. Few realize, however, that, while the basic 12.2-percent relationship that controlled imports bear to domestic production has been adhered to as far as controlled imports are concerned, the exceptions permitted outside the 12.2-percent limit have increased to such an extent that total imports of oil into the United States is now running at a rate 38 percent of domestic production.

The average for all of 1969 was, in fact, at a rate of more than one-third of domestic production and is steadily increasing as further exceptions are granted.

In a recent exchange of correspondence with Senator MCINTYRE, I agreed with the objective of his bill to limit imports of a product to an equitable share of the U.S. market without driving the domestic producers out of business. I am not sure what that share should be for any particular industry, but Senator MCINTYRE's bill would limit foreign imports of footwear to approximately 25 percent of domestic production, a figure he feels is fair to both the foreign and domestic producer.

He agreed in the exchange to consider cosponsoring a similar oil import quota bill which "would raise the imports of crude oil to this level." Inasmuch as oil imports are now considerably in excess of that figure, as I advised Senator MCINTYRE, I am hopeful that he will favorably consider supporting the oil import quota bill that Senator RUSSELL LONG, I, and others plan to introduce.

Mr. President, having advised my good friend and colleague, the distinguished Senator from New Hampshire (Mr. MCINTYRE) of my intentions, I ask unanimous consent that our exchange of letters on shoe and oil imports be printed in the RECORD.

There being no objection, the letters were ordered to be printed in the RECORD, as follows:

U.S. SENATE,
Washington, D.C., April 23, 1970.

Hon. CLIFFORD P. HANSEN,
U.S. Senate,
Washington, D.C.

DEAR SENATOR: Last week I introduced S. 3723 which is designed to provide for the orderly trade in textile articles and leather footwear. The basic purpose of this bill is to protect our domestic shoe and textile industries without placing an unfair limitation on foreign imports.

The bill would, beginning this year, limit imports of these products to the average annual imports for the years 1967–68. Beginning with 1971, the total imports allowed for each product will be increased by an amount proportionate to the increase in the domestic consumption of that product. In other words, in 1971 the rise in imports will be based on the rise in domestic consumption in 1970 as compared with the average consumption in 1968–69. As each year ends new calculations will be made for the imports to be allowed for the next year.

I feel that this is a system which will allow the imports equitable share of the market without driving the domestic producers out of business.

I am enclosing a copy of the statement I presented when I introduced the bill.

If you are interested in co-sponsoring this bill or have any questions, please call me or Tedy Leary (x2841) in my office.

Sincerely,

THOMAS J. MCINTYRE,
U.S. Senator.

APRIL 24, 1970.

Hon. THOMAS J. MCINTYRE,
U.S. Senate,
Washington, D.C.

DEAR TOM: Many thanks for your letter and copy of your introductory remarks on S. 3723.

I fully agree with the objective of your bill to establish a system which will allow imports an equitable share of the U.S. market without driving the domestic producers out of business.

Senator Russell Long is soliciting cosponsors for a similar bill that would apply to foreign produced oil. I have joined him, along with a number of other Senators, and I am sure he would welcome your support in similar protection of American oil producers and their workers who are also threatened by cheaply produced foreign oil.

Kind regards.

Sincerely,

CLIFFORD P. HANSEN,
U.S. Senator.

U.S. SENATE,
Washington, D.C., April 29, 1970.

Hon. CLIFFORD P. HANSEN,
U.S. Senate,
Washington, D.C.

DEAR CLIFF: Thanks for your prompt reply to my request for co-sponsors on S. 3723.

I am in full agreement with you that there is a need to protect our domestic industries from damaging foreign competition. At the same time, however, we must be careful not to turn this protection into a donation or subsidy. Unfortunately, this is what the oil import quota program has become. While my bill is designed to insure the health of a long suffering industry, the oil import program insures only higher profits for this nation's richest industry.

As you may know, my bill would limit foreign imports of footwear to approximately 25% of domestic production—a figure which I feel is fair to both the foreign and domestic producers. You can be sure that if you introduce a bill which would raise the imports of crude oil to this level, I will be more than happy to consider co-sponsoring it.

Sincerely,

THOMAS J. MCINTYRE,
U.S. Senator.

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, D.C., May 4, 1970.

Hon. THOMAS J. MCINTYRE,
U.S. Senate,
Washington, D.C.

DEAR TOM: Basically, I believe we agree that American industry and American workers cannot be expected to compete with uncontrolled imports.

Your bill, S. 3723, would limit foreign imports of footwear to approximately 25 percent of domestic production. But I am not sure I understand your agreement to consider cosponsoring a bill "which would raise the imports of crude oil to this level."

According to the statistics I am furnished, oil imports, crude and oil products both controlled and uncontrolled, for the first quarter of 1970 averaged 38 percent of domestic production. Imports were 3,794,000 barrels daily while production was 9,526,000 barrels.

For all of 1969, imports were 34 percent of domestic production. At the present, more than 50 percent of all oil products marketed in the East Coast area are either imported or derived from imported crude. About 85 percent of all residual fuel used for generation of electricity and industrial use in the Northeast is imported and more and more of it from the Eastern Hemisphere.

The main reason the oil import program needed revision in the first place was because of exceptions, exemptions and special cases that had riddled it and lost sight of the original purpose and intent of protecting the national security and insuring a healthy and viable industry. Rather than a cure for a sick program, the recommendations of the majority of the Cabinet Task Force on Oil Import Controls would certainly have added more woes to an industry already suffering from excessive imports by your standards for the shoe industry.

Annual and stock market reports certainly do not reflect any excessive profits for what you term the "nation's richest industry."

It seems rather obvious that both the shoe and domestic oil industries need some incentive for producing the nation's needs and I would hope that you could agree that your 25 percent figure would be as fair for oil as for shoes in limiting foregin imports and insuring the health of both.

But the most compelling argument for retention of import controls must be national security.

Recent events in the Middle East underscore the dilemma our country would face if we became overly dependent on Arab oil.

Again I seek your co-sponsorship of legislation to give the same protection to oil that you seek for hsoes.

Sincerely,

CLIFFORD P. HANSEN,
U.S. Senator.

WEEKLY RADIO REPORT BY SENATOR ALLEN

Mr. ALLEN. Mr. President, I ask unanimous consent that the script of my weekly radio report, recorded on May 4, 1970, for distribution to Alabama radio stations, and to be made the basis of my weekly newspaper column in Alabama weekly newspapers, be printed in the RECORD.

There being no objection, the report was ordered to be printed in the RECORD, as follows:

PRAY THAT NEW POLICY SHORTENS WAR

For my report this week I want to discuss the Vietnam War and the escalation of the war by the President. He has sent American troops into Cambodia to wipe out the sanctuaries maintained by North Vietnam and the Viet Cong in Cambodia near the South Vietnamese border.

Just a few days ago the President announced that during the next 12 months 150,000 American troops would be withdrawn from Vietnam. This was indeed encouraging to all those who want to see a de-escalation of the War.

I have opposed sending arms and supplies to Cambodia and still do not favor this action on our part. It must be kept in mind that the President's action was not sending aid to the Cambodian government but doing what he thought best to protect the lives of American servicemen in Vietnam. It was looking out after American self-interest rather than giving support to the new government of Cambodia which took over several weeks ago by overthrowing the government of Prince Sihanouk.

Cambodia has not been our friend or ally. It has through the years allowed North Vietnam and Viet Cong forces to attack from and retreat to Cambodia following attacks on American bases in South Vietnam.

So, I am hoping that the welfare and safety of American troops will be our first consideration and not the welfare and maintenance in office of a non-representative government in Cambodia. We must think of the American boys who will have to back up with their lives any involvement by the United States in the Cambodian War.

The President says that the war will not be widened beyond cleaning out enemy staging areas and sanctuaries and that this will take only a few weeks. However, we have the example of Vietnam to show us that limited participation in foreign conflicts gradually leads to all out participation.

I realize that my knowledge of the facts is limited but I hate to see the scope of the war widened. The President has more information on the subject than any other person and we need to rally around him.

The President of the United States, acting as Commander-in-Chief of our Armed Forces, has had and will continue to have my support in his conduct of the war in Southeast Asia.

Certainly, I will oppose any moves in the Senate to tie his hands, to snipe at him, or to criticize his actions before the world.

I will oppose any action that will deprive American boys in Southeast Asia of support, or that will cut the ground from under them, or indicate in any way that they have less than my enthusiastic support.

The President has acted. This is now the official policy of our Country in the conduct of the war. As a loyal, patriotic American, as well as a United States Senator from Alabama, I shall support it.

I must say, however, that I am heartsick that it was deemed necessary to expand the scope of the war, and I question the wisdom of the action. The President assures that it will shorten the war and bring our boys home sooner. I pray that it will.

KENT STATE UNIVERSITY INCIDENT

Mr. ALLOTT. Mr. President, all Americans were shocked and saddened Monday by the violent deaths of four students at Kent State University in Ohio.

I understand that State authorities are beginning a thorough investigation of the entire incident. In addition, they have asked for and are receiving Federal help.

Pending this investigation, there is little that can be said with certainty. However, there are vital questions which need asking.

Most important is the question of whether or not our various National Guard units are properly trained and properly equipped for the arduous, disagreeable, nerve-racking duty of riot control.

Mr. President, in recent years there have been several studies and reports—the Kerner Commission report is one example—concerning the role of the National Guard in restoring order in areas experiencing disturbances. These studies and reports have stressed how difficult it is to train soldiers for riot duty.

Without wanting to draw any conclusions from the events at Kent State University, I think it is appropriate to ask whether adequate steps have been taken to guarantee that all National Guard units receive the most advanced and thorough training in riot control.

Clearly the importance of the National Guard is increasing not diminishing. Clearly the vital importance of the National Guard makes it proper that the Guard be treated with the utmost respect, and that it be given the best possible training. Therefore, there is a clear need for effective and uniform training to equip all soldiers, but especially National Guard soldiers, for the delicate task of subduing a mob with the minimum amount of force. It is unfair and it is dangerous to take young men from their civilian jobs and send them quickly into a situation where they are surrounded by a mob hurling rocks and insults, and expect them to cope with the situation, unless those men have been given the very best training that money can buy.

National Guard units have served the Nation with valor and distinction in combat overseas and in various emergencies at home. But the task of containing an enraged mob makes very unique demands on soldiers, and their training should reflect this fact.

Mr. President, the tragic events at Kent State University suggest one more comment.

It is clear that a major share of responsibility for the deaths of students rests on those weak university administrators around the Nation who have allowed campuses to fall into conditions not far removed from lawless jungles.

In recent years it has become possible for a student to get the impression that riot, assault, arson, and sundry other crimes are not only tolerable, but even respectable forms of "dissent," and that they will go unpunished if committed within the confines of a university. The use of campuses as sancutaries for violence must end. We must hope that campus violence can be ended without a quantum jump in the level of violence on the part of those whose duty it is to restore law to campuses.

LEGISLATIVE OBJECTIVES: NRTA–AARP

Mr. WILLIAMS of New Jersey. Mr. President, a statement of "Legislative Objectives" was adopted on January 27–29, 1970, by the Legislative Council of the National Retired Teachers Association and the American Association of Retired Persons. The Legislative Council represents the more than 2 million members of these sister organizations, and the council statement serves as a guide to those who are authorized to speak for these organizations on legislative issues, including their executive director, Bernard E. Nash; their legislative counsel, Cyril F. Brickfield; and their legislative representatives, Peter W. Hughes, Robert F. Sykes, and Ernest Giddings.

This statement of "Legislative Objectives" is significant not only as a declaration of the aspirations of these more than 2 million members of NRTA–AARP, but of many other older Americans.

Included among these legislative objectives are recommendations to increase and improve social security and medi-

care benefits, to protect fixed incomes against the ravages of inflation, to provide adequate health care at reasonable cost, to provide equitable tax treatment, to improve employment and service opportunities for the elderly, to protect consumers, to provide adequate housing and transportation, and to attack the critical problems of water, air and noise pollution and the destruction of our natural surroundings.

The statement also requests the President to insure that older persons and their representatives participate fully in all phases of the 1971 White House Conference on Aging.

Time does not permit me to discuss these recommendations in detail nor mention the many other important points contained in this statement of legislative objectives. In order that the full text may be available to Senators and others who are interested, I ask unanimous consent that the text be printed in the RECORD.

There being no objection, the text was ordered to be printed in the RECORD, as follows:

HERE IS THE 45-POINT LEGISLATIVE PROGRAM ADOPTED FOR THIS YEAR BY THE NRTA–AARP LEGISLATIVE COUNCIL

IMPROVED SOCIAL SECURITY, MEDICARE BENEFITS

1. We support legislation to increase the minimum Social Security benefit to at least $120 a month and provide corresponding increases at all Social Security benefit levels.

2. We recommend that the Social Security earnings limitation be amended to permit annual earned income of $3,000 a year without reduction in Social Security benefits.

3. We urge that the widow's Social Security benefit be increased to 100 per cent of the worker's benefit.

4. We favor legislation to establish minimum Social Security benefits for all persons age 70 or older who are not otherwise eligible for cash benefits under the Social Security program, and to permit benefits up to $150 per month from other public and private pensions without loss in their Social Security benefits.

5. We urge the Congress to assure that all persons will be eligible for Medicare upon attaining age 65.

6. We urge the Congress to include prescription drug costs in Medicare.

7. We support the bipartisan study of the whole Social Security system in relation to today's economy.

8. We urge that Social Security benefits for men be computed on the same basis as that now used to determine benefits for women.

9. We encourage deferment of retirement beyond age 65 and we urge Congress to provide increased benefits to persons who continue to work past age 65.

10. We urge that the Federal Government investigate the causes of increasing hospital charges and physicians' fees in an effort to halt the rising costs of Medicare and out-of-pocket Medicare payments.

11. We suggest the inclusion of chiropractic services under Part B of Medicare.

ADEQUATE RETIREMENT INCOME

12. We urge the states to increase pension benefits of all retired teachers to at least $2,400 a year minimum based on 25 years of service, with proportional benefits for all service of shorter duration.

13. We urge adoption of a national policy of (a) the transferability of public and private retirement credits, (b) five-year or earlier vesting or retirement benefits, and (c) adequate funding.

14. We urge the Congress to provide partial Federal funding to encourage the states to accept the transfer of out-of-state teaching credit.

15. We urge the Congress to provide adequate pension increases for railroad retirees and Civil Service retirees.

16. We urge the Congress to continue to protect veterans, their dependents, and all other older Americans in their benefits when increases are voted in Social Security or public pensions.

17. Private pension programs be revised to provide annual automatic benefit increases tied to a rise in the cost of living.

18. We urge more effective enforcement of the Age Discrimination Act passed by the 90th Congress, and expansion of its provisions to assure those over age 65 who want to work, the opportunity to do so.

EQUITABLE TAX TREATMENT

19. We urge that the entire economic community of the nation contribute to the financial improvement of needy older Americans.

20. We urge the Congress to permit persons age 65 and over to deduct all unreimbursed expenses for drugs and other medical expenditures from their Federal income taxes.

21. We believe that single persons over age 65 with incomes up to $3,500 a year, and married couples over age 65 with incomes up to $6,000 a year, should be exempt from paying a Federal personal income tax.

22. We urge that Congress adjust the retirement income credit base to correspond with the current Social Security maximum payment.

23. We urge the states to provide a homestead exemption for persons over 65 in order to lessen the burden of steadily rising property taxes and enable retirees to maintain their own homes.

24. We urge that under the Federal Estate Tax, the present 50 per cent limitation be replaced by an unlimited marital deduction which would make transfers of all property between spouses tax free.

HEALTH AND ENVIRONMENT

25. We support the principle of preventive care to promote the physical and mental health of older persons.

26. We urge the immediate development by the Department of Health, Education and Welfare of a national program which will guarantee all older persons the right to quality medical and health care at a reasonable cost.

27. We urge that the Administration effectively implement its commitment to alleviate the problem of inadequate nutrition which exists, to varying degrees, in all strata of our society, but particularly among the elderly.

28. We urge a coordinated national attack on the critical problems of water, air, and noise pollution and the wasteful destruction of our natural surroundings.

29. We urge that all Federal functions having to do with the environment be combined into a single department.

30. We urge effective implementation and strict enforcement of criminal laws, and enactment of new ones where necessary, in order to reverse the rising tide of criminal activity, including that which particularly affects the person and property of older Americans.

31. We urge that all Federal, state and local agencies give special attention to the needs of older persons with respect to the cost, availability, suitability, and proximity of public transportation.

32. We urge that the announced national housing goal include appropriate emphasis on the provision of adequate, reasonably priced housing for all older Americans.

33. We urge that administrators of the Model Cities Program continue their efforts to identify and meet the needs of the older citizens living within or affected by Model Cities projects.

ADMINISTRATION ON AGING

34. We urge that a thorough study of the policies, procedures, programs and resources of the Administration on Aging be conducted to determine its effectiveness in carrying out the intent of Congress as defined in the Older Americans Act, as amended.

35. We respectfully request the Commissioner on Aging to include representatives of the major national organizations of older persons and qualified individual older persons in the initial and all subsequent planning and policymaking for the 1971 White House Conference on Aging.

36. We urge the Congress to appropriate sufficient funds to carry out the purposes and programs of the Older Americans Act, including those set forth in the 1969 Amendments.

37. We urge the immediate development of a national philosophy on aging and the older American.

CONSUMER PROTECTION

38. We support legislation to expose and restrict all categories of misrepresentation and fraud to consumers.

39. We oppose the adoption, by any state, of the Uniform Consumer Credit Code in its present form.

40. We urge immediate state and Federal action to identify and expose those consumer frauds and deceptions whose primary victims are older Americans.

41. We urge the Congress to establish an Office of Consumer Affairs at the Federal level with a director having the status equivalent to that of a cabinet officer.

NATIONAL POLICY

42. We urge the President and the Congress to intensify their efforts to stabilize the purchasing power of the dollar.

43. We urge adoption by the states of a model Uniform Probate Code to simplify and expedite estate administration.

44. We urge that the method of choosing the President of the United States be reformed.

45. We support the right of persons lawfully assembled in schools and other public places to participate in nondenominational prayers, and we also support continuance of their right to pledge allegiance to the flag of the United States.

A PRACTICAL VIEW OF DIRECT ELECTION OF THE PRESIDENT

Mr. ERVIN. Mr. President, unfortunately, much of the debate on electoral college reform has been of a theoretical nature. Those who advocate direct popular election of the President have relied very strongly on sloganeering to convince the American people that direct election should be adopted. This simplistic approach to the serious matter of changing the manner in which we elect our President has obscured many practical considerations to which Congress must address itself. The effect of direct election on our two-party tradition, on our federal system, on the manner in which campaigns and elections are conducted are only a few of these practical considerations. An editorial published in the Wall Street Journal of April 29, 1970, underscored several of the practical difficulties involved with the proposal for direct popular election.

The editorial cautioned:

What would have been the effect of direct election in 1968, when the difference between two candidates was seven-tenths of a per cent of the popular vote, or in 1960, when the difference was two-tenths of a percent, or less than 120,000 votes nationwide? It is

scarcely difficult to imagine the need for a national recount, or an election where the final decision came down to the late-reporting precincts of Cook County. This is nothing but a recipe for strife, uncertainty and bitterness, for results at least as perverse as those conceivable under the present system.

In conclusion the editorial said:

Direct election has its own considerable potential for mischief, and if the nation is given an all-or-nothing choice between direct election and no change, it will be far wiser to stick to the devil it knows.

I hope the Senate follows this wise advice.

Mr. President, I ask unanimous consent that this editorial, entitled "Lost in Theorizing" be printed in the RECORD.

There being no objection, the editorial entitled "Lost in Theorizing," was ordered to be printed in the RECORD.

[From the Wall Street Journal, Apr. 29, 1970]

LOST IN THEORIZING

Direct election of the President is one of those cozy ideas, warm and soft and virtuous, beloved by civics teachers and all the best people. What with an amendment already passed by the House and approved last week by the Senate Judiciary Committee, it very well may be written into the Constitution of the United States. Unless, that is, the full Senate wakes up enough to recognize how it would operate in the real world.

The current fervor over electoral reform has produced a field-day for the armchair theorists. Direct election was obviously bound to win any armchair theorizing contest, but some of the other entries were instructive. Our favorite, from the standpoint of amusement, was the Dole-Eagleton plan. Its workings are too complicated to describe, but its backers argued it would guarantee that a candidate with a solid popular majority would always win but that in close elections widespread geographical backing would also count. Not a bad idea, indeed an excellent one, but also a precise description of the effect the Electoral College already has.

What got lost in all this theorizing was the reason the fervor over electoral reform came up in the first place. This, perhaps you may recall, was the possibility of a deadlocked election, which was prominent in the 1968 campaign because of the third-party effort. If no candidate receives a majority of the electoral vote, the Constitution presently calls for the House to elect the President, choosing among the top three candidates, voting one vote per state, and with a majority of states required for election. Thus an indefinite deadlock is conceivable, and unquestionably it would put a severe strain on both public trust in American institutions and the legitimacy of any eventual winner.

So it somehow seems to us, if to hardly anyone else, that the purpose of electoral reform ought to be to correct this defect. Or at least, that whatever else a reform plan may do, it certainly ought to eliminate the possibility of uncertainty and deadlock that damage institutions and destroy legitimacy. And it is on precisely this count that the country is begging for trouble if it opts for direct popular election.

What would have been the effect of direct election in 1968, when the difference between the two candidates was seven-tenths of a per cent of the popular vote, or in 1960, when the difference was two-tenths of a percent, or less than 120,000 votes nationwide? It is scarcely difficult to imagine the need for a national recount, or an election where the final national decision came down to the late-reporting precincts of Cook County. This is nothing but a recipe for strife, uncertainty and bitterness, for results at least as perverse as those conceivable under the present system.

Beyond that, we simply do not know the secondary and tertiary effects that might come from such a fundamental change in our institutions. Direct elections might promote third-party campaigns like George Wallace's, for under the proposed plan a third party could force a runoff election without carrying a single state. It would have unpredictable and perhaps controversial effects on the balance of political power among various voting groups and on the methods of political campaigning. All in all, there are a lot of unknowns to risk merely to satisfy the theorists.

We absolutely do know, by contrast, that the present Electoral College got us through the 1968 and 1960 elections without a Constitutional crisis. It has the obvious advantage of isolating any need for a recount to states both close and crucial to the outcome. We know that its decisions even in the closest elections have been accepted by the electorate without cavil. Even though the opportunity for a breakdown is obvious, for that matter, the system has in fact weathered that danger time and again.

It would be perfectly possible and eminently desirable, of course, to eliminate the risk of a deadlocked election without junking the present system. One proposal, for example, is to have a joint session of Congress, with one vote per Senator or Representative, decide any election where no candidate receives a majority of the electoral vote. A straightforward amendment to correct the obvious problems, though, runs into opposition from backers of direct election, who are intent that the defects in the present system must go uncorrected until their own cozy idea is enacted.

So be it, but direct election has its own considerable potential for mischief, and if the nation is given an all-or-nothing choice between direct election and no change, it will be far wiser to stick to the devil it knows.

MINNESOTA'S KETTLE RIVER

Mr. MONDALE. Mr. President, I recently introduced a bill designating the Kettle River in Minnesota as a component of the wild and scenic rivers system. Representative BLATNIK has introduced a companion bill in the House.

I am pleased that this action has received the endorsement of two of the largest newspapers in Minnesota.

The St. Paul Dispatch says:

Congress should act favorably on a move by two Minnesotans to include the Kettle River in the National Wild and Scenic Rivers System.

The Minneapolis Tribune says:

Sen. Mondale and Rep. Blatnik are sponsoring bills in Congress to keep the Kettle unspoiled by including it in a national system of wild and scenic rivers . . . The Mondale-Blatnik proposal seems to us an attractive one.

Mr. President, I ask unanimous consent that the editorials be printed in the RECORD:

There being no objection, the editorials were ordered to be printed in the RECORD, as follows:

PRESERVING THE KETTLE

Congress should act favorably on a move by two Minnesotans to include the Kettle River in the National Wild and Scenic Rivers System. Companion bills seeking to preserve the river have been introduced by Sen. Walter Mondale and Rep. John Blatnik.

The Kettle, located approximately midway between the Twin Cities and Duluth, is one of the most picturesque in the state and its waters have been virtually untarnished by human and industrial wastes. In addition, the Kettle flows into the upper St. Croix, which already has been designated as a wild river by Congress.

If the Kettle were designated likewise, it would mean that its waters and shoreline would be used almost exclusively by canoeists, fishermen and hikers. No new roadways could be constructed in the area and a strip of land—approximately 400 feet in from either shoreline—would be protected by easement or acquired by the federal government. Any large campsite, for instance, would have to be built behind the 400-foot zone. Moreover, under the Wild Rivers Act, construction of any kind within 1,300 feet of the river is severely restricted.

Upon completion of the interstate highway between the Twin Cities and Duluth, over two million Minnesotans would be within a 90-minute drive of the Kettle. The nature lovers among them deserve its protection.

ANOTHER WILD RIVER FOR MINNESOTA

For years, the Kettle River in northern Minnesota has been regarded by canoeists as challenging and by outdoor enthusiasts as enjoyable. It is underdeveloped and picturesque; it has exciting rapids, lazy sections, good fishing; there are interesting geological formations along the banks.

Sen. Mondale and Rep. Blatnik are sponsoring bills in Congress to keep the Kettle unspoiled by including it in a national system of wild and scenic rivers.

This makes good sense from the Minnesota viewpoint. The state has designated the Kettle as a canoe route. The Kettle would complement the St. Croix, already part of the national wild and scenic system, which so far includes only eight rivers. The Kettle, which flows into the St. Croix near Pine City, could help relieve possible future crowding on that river. Also, the Kettle is largely undeveloped—only 17 homes are located on its banks—and half the shoreline already is publicly held.

From the national vantage point, though, the proposal might be viewed differently. Money has yet to be appropriated to buy land along six of the eight rivers already designated as part of the national system. And, at least technically, another 16 streams marked in 1969 for Interior Department study as wild and scenic rivers would take precedence over the Kettle.

The Mondale-Blatnik proposal seems to us an attractive one. If Congress doesn't act on it, why can't Minnesota take the initiative and—beyond designating canoe routes—begin forming its own system of wild and scenic rivers? There is no reason why the state must await federal action to protect Minnesota streams such as the Kettle from development.

BETTER SECRETARIES MEAN BETTER BUSINESS

Mr. TYDINGS. Mr. President, "Better Secretaries Mean Better Business" was the theme of the 19th consecutive annual Secretaries Week, April 19–25, 1970.

Governors and mayors throughout the United States officially proclaimed Secretaries Week, and their counterparts in Canada did the same. For the seventh straight year, the Outdoor Advertising Association undertook Secretaries Week as a public service project, and billboards were made available throughout the

country. Many chambers of commerce also observed Secretaries Week, and service clubs such as Rotary, Lions, and Kiwanis invited secretaries to participate in special programs.

The purpose of Secretaries Week is to bring recognition to secretaries for the vital role they play in business, industry, education, government, and the professions. Secretaries Week was originated in 1952 by the National Secretaries Association—International—in cooperation with the U.S. Department of Commerce to draw attention to the secretary's contribution to the educational, professional, and civic growth of the community. It also serves to remind secretaries of their responsibilities to their employers and to their profession. Many secretaries also participate in secretarial seminars.

Miss Bertha J. Stronach, CPS, NSA's international president, who is secretary and senior staff assistant to L. M. Collins, manager of educational marketing programs, IBM, New York, said that NSA would be devoting some soul searching to the present and future respect from superiors, colleagues, and subordinates that secretaries can only command through performance.

NSA's own research indicates that about 1,300,000 office employees have advanced beyond shorthand and transcription duties to the "think" demands of secretarial responsibility. Of these, about 11 percent have a work environment described in the association's own definition of a secretary:

A secretary shall be defined as an executive assistant who possesses a mastery of office skills, who demonstrates the ability to assume responsibility without direct supervision, who exercises initiative and judgment, and who makes decisions within the scope of assigned authority.

According to Miss Stronach, the responsibility, initiative, judgment, and decisionmaking factors will be increasingly what management seeks in the support function of a secretary.

The NSA president states:

Secretaries will accompany the faster growth trend in service industries over production industries. The trend as well toward a four-day working week seems inevitable and it would appear that by 1980, secretaries, as well as workers in all fields of endeavor in the United States, will be clocking a 28–32 hour week as compared with the present 35–40 hours. We predict, however, that this will be a paper arrangement and when a job needs to be done beyond the four days, the secretary as always will be there to do it, just as the executive is.

I am hopeful that the Senate will see fit to act on the joint resolution (S.J. Res. 101), which I introduced last year, in time for the 20th annual Secretaries Week in 1971. An annual observance of National Secretaries Week draws to the profession well-deserved attention. We have a shortage of secretarial talent in this country, and we need to encourage young people to enter the profession.

Many activities are conducted by the National Secretaries Association now and are available to members and nonmembers alike. I think it is important that they be continued, and expanded. Many young people facing a career choice do not have a clear idea of the wide variety of experience and responsibility that can be open to them in a secretarial career. In this regard, I would like to see the Senate note the value of this most worthwhile career and its own indebtedness to those serving them in a secretarial capacity.

THE PRESIDENT'S LEADERSHIP—ADDRESS BY SENATOR GOLDWATER

Mr. GOLDWATER. Mr. President, I ask unanimous consent to have printed in the RECORD an address I made before the Nashua, N.H., Chamber of Commerce on May 5, 1970.

There being no objection, the address was ordered to be printed in the RECORD, as follows:

REMARKS BY SENATOR BARRY GOLDWATER

As we might have expected, President Nixon's courageous action in Cambodia has been met with weeping and wailing from spokesmen for the political left. These are the same ones who wring their hands every time this nation shows that it will not roll over and play dead in the face of bold power moves by International Communism.

This mixed bag of liberals and leftists just can't get over the fact that their theories and policies were soundly rejected by the American people in 1968 and they throw a temper tantrum every time they don't get their way.

They think they can bully the President, and the solid majority that supports his efforts to disengage with honor, by making threats to shut down our great institutions of learning.

In the Congress, their adherents rush forward with all sorts of resolutions. Resolutions to repeal resolutions are before us, as well as resolutions that would substitute the judgment of the Senate for that of the President.

What this all boils down to is a direct challenge to the fundamental role of the President in planning and conducting the military and foreign affairs of the United States.

What the new isolationists are telling us is that they should have the pre-eminent role under the Constitution for the determination of our military and foreign policies. Of course, this would mean that the United States would steer a course of closing its eyes whenever and wherever the forces of Communism intervened in a new country or area of the world.

For example, no howls of regret poured out when Hanoi moved 40,000 men into Cambodia in progressively more violent attacks against a neutral people.

Yet when President Nixon takes the honorable and sensible step of trying to protect the 435,000 American troops remaining in South Vietnam by disrupting the Communist staging ground and supply bases in that same country, the full fury of the liberal forces was unleashed.

No matter that the President's action will likely set back Hanoi's schemes of conquest in a major way. No matter that the drive against Communist supply areas will stand an excellent chance of making good the Administration's announced goal of withdrawing 150,000 American men during the next 12 months since it will enable the South Vietnamese to be in a better position to defend themselves.

No, the President's detractors would have us substitute their judgment for his. They would take over the reins of determining where and when each new military action by the United States should take place.

Under *their* concept of the Constitution, the conduct of American military operations would be turned over to them for decision. When they decide that too many American troops are engaged, or that the geography is not to their liking, or that our action might offend Red China, or of all things, Russia, then their determination is supposed to prevail.

Well, it is high time someone let them know that this is simply not the way our republic is set up. For if there is one thing that has become clear in Constitutional law, it is that the Constitution does not deposit with Congress the primary powers over the conduct of American military actions.

While it is true that Congress possesses enumerated powers which include authority to raise and support armies, to provide for the common defense, and to declare war, these powers have never been construed to curb or cripple the powers of the President in the field of military and international affairs.

First, the critics who undermine the President's right to leadership would do well to take a lesson from Chief Justice Marshall, on March 7, 1800, when he was still a member of the House of Representatives, this great architect and interpreter of American Constitutional doctrines said that "the President is the sole organ of the Nation in its external relations and its sole representative with foreign powers."

The primacy of the President as the representative of the nation in conducting foreign relations was reaffirmed by the Supreme Court in 1936. In the famous *Curtiss-Wright* decision, the nation's highest tribunal declared that the power of the President as the sole organ of the Federal Government in the field of international relations is "a power which does not require as a basis for this exercise an act of Congress . . ."

Second, the President's decision to send American forces into Cambodia is unquestionably backed by his authority to act as Commander-in-Chief of the Armed Forces of the United States. This function is spelled out very clearly in Article II, Section 2, of the Constitution.

Third, the President is supported in his action by the broad authority which has been granted to him under the first sentence of Article II of the Constitution. This provision declares that "the executive Power shall be vested in a President of the United States of America."

The meaning of this clause is that the Constitution has vested in the President all the executive powers of a sovereign nation, including the capacity to form important policy independent of direction by Congress.

This holds true even though his action, in its consequences, might limit the power of Congress to change things around. In the words of Alexander Hamilton, "the Executive in the exercise of its Constitutional powers, may establish an antecedent state of things . . ."

Fourth, it is pertinent to consider another provision of Article II of the Constitution. This is section 3, which places upon the President, and the President alone, the duty to "take care that the laws be faithfully executed."

Now, as we all know, the laws of the land include treaty law and international law. And there is strong authority for the proposition that it is the President himself who may make his own reading of international law.

Both the Supreme Court, in *Cunningham* v. *Neagle*, and Professor Corwin, who is often noted as the nation's top Constitutional scholar, indicate that the President may determine and enforce the rights, duties, and obligations growing out of our international

relations without awaiting action either by Congress or by the Courts.

But it is the verdict of history which stands as the best proof that the principles I have set forth really mean what I have said they do. It may surprise some of you, but it is an unchallenged fact that since the Constitution was adopted there have been nearly 140 armed incidents in which the President, without any prior Congressional authorization, and without any declaration of war, has ordered the Armed Forces of the United States to take action or maintain a military stance abroad.

While many of these actions involved the protection of American property or American citizens in foreign lands, a great many of these incidents have been concerned with the general defense of the United States or the protection of some national security interest.

The practical reasons for the development of this situation are easy to recognize. It was John Jay, the first Chief Justice of the Supreme Court, who observed in the *Federalist* that the executive possesses great inherent strengths in his direction of matters affecting our international affairs. These include the unity of the office, the capacity for secrecy and speed, and superior sources of information. If these words were true in the Eighteenth Century, how much more are they relevant to the breath-taking tempo of history in this Twentieth Century?

The only alternative that is offered is chaos—chaos accompanied by the paralysis of America's ability to act in world affairs. If the isolationist theories of those who would undermine the authority of the President should ever prevail, we can kiss this country's role of world leadership good-by. And with it, maybe the whole world will go, too.

EDUCATION APPROPRIATIONS

Mr. MONDALE. Mr. President, the Subcommittee on Appropriations for Labor-HEW recently completed hearings on H.R. 16916, the 1971 education appropriation bill, and is now undertaking the difficult task of developing its recommendations.

This subcommittee, under the able guidance of its chairman, the Senator from Washington (Mr. MAGNUSON), is taking early action on education appropriations this year, and in so doing is rendering a great service to American education.

I recently submitted a statment to the subcommittee in support of increased appropriations for education. While urging the subcommittee to work toward full funding of all education programs, I emphasized several activities for which I believe added funds simply must be provided in fiscal 1971 if we are to even begin to meet our commitment to the children of the Nation.

I ask unanimous consent that my statement to the Labor-HEW Appropriations Subcommittee be printed in the RECORD.

There being no objection, the statement was ordered to be printed in the RECORD, as follows:

STATEMENT BY WALTER F. MONDALE TO THE LABOR-H.E.W. APPROPRIATONS COMMITTEE, APRIL 27, 1970

Mr. Chairman and Members of the Committee: I am honored to have this opportunity to present my views on the fiscal 1971 education appropriations bill. The Committee is to be commended for its expeditious action on the 1971 education appropriations bill and for its imaginative response to the dilemma faced during the 1970 fiscal year by school districts uncertain of the Federal support upon which they could depend. Your early action on education appropriations will minimize the most serious shortcoming of Federal education programs—uncertain and late funding. Educators will now be able to plan for the 1970–1971 school year with the assurance and foresight which comes with knowing the level of Federal support which will be available in the year to come. The real beneficiaries of this improved planning will be, of course, the millions of children served by Federally supported education programs.

While I will make some recommendations concerning five programs which I consider seriously under-funded in the House bill, I would like to place primary emphasis upon my general conviction that education programs are sound investments in the quality of American life. I believe, as I stated before this Committee when I testified last year on the 1970 appropriations bill, that the Congress has a responsibility to invest heavily in the children of this country. Full funding for vital education programs is the place to begin.

My plea is for a major Federal response to the financial crisis facing American education at all levels and a realization that quality education is truly an investment—and not an expense or a drain on the economy. I know that some say that we cannot afford to make this effort—that this would be inflationary. I disagree, I am fully aware of the fiscal constraints we are facing as a nation, but I believe that we are in danger of reacting to these constraints inappropriately—in a manner which fails to reflect the over-riding human needs of a nation in social turmoil.

In my earlier statement on the 1970 bill, I emphasized two major concerns. One was late funding, and your Committee has taken admirable action to relieve this problem. My second concern was the authorization-appropriation gap in education programs. I ask that the Committee do everything possible to close this authorization-appropriation gap in the fiscal 1971 budget.

Despite some concerted efforts on behalf of America's educators to persuade us to provide funds for quality education, we in the Congress—and the leadership in the Administration—perpetuate a major gap between authorization and appropriation . . . between recognized need and actual dollar support . . . between promise and delivery. I believe that we must remove this major shortcoming of the Federal government's effort in support of education. We must not continue our practice of funding education at less than forty percent of authorization while we fund space exploration and military procurement at levels very close to full authorization. By doing so, we reveal to the nation—and particularly to our young people—a terribly distorted sense of national priorities.

I would like to call the Committee's attention to five programs which I consider particularly in need of more funds than the House bill provides:

TITLE I OF THE ELEMENTARY AND SECONDARY EDUCATION ACT

The $1.5 billion provided in the House bill falls far short of the Title I maximum entitlement of $4.2 billion for fiscal 1971. While the House figure represents a 12 percent increase over the fiscal 1970 appropriation, a substantial portion of the added funds will be consumed by increased salaries and instructional materials costs. Little new funding will be available for new or improved program initiatives for the disadvantaged children who need this help so desperately.

I urge the Committee to do everything possible to provide a major increase in the ESEA Title I program.

TITLE VIII OF THE ELEMENTARY AND SECONDARY EDUCATION ACT

The $8 million provided by the House for the Dropout Prevention program falls $7 million short of the Administration's budget request. This figure will provide only for a continuation of existing programs and will again this year prevent a concerted attack on our nation's tragic neglect of the school dropout—a neglect which holds frightening social implications which we simply cannot ignore indefinitely.

Many excellent dropout prevention proposals, including one designed to meet the needs of Indian students in my State of Minnesota, have gone un-funded—and will continue to do so—unless the Senate increases the House figure.

I urge the Committee to fund the Dropout Prevention program at its full 1971 authorization level of $30 million.

BILINGUAL EDUCATION

The Congress recently established the 1971 authorization for bilingual education at $80 million. This estimate of need stands in sharp contrast to the Administration's 1971 request for $21,250,000 and the House figure of $25 million.

Title VII of ESEA, providing special bilingual education programs for school children with limited English-speaking ability, resulted in large part from the tireless efforts of the distinguished Senator from Texas, The Honorable Ralph Yarborough. It has been my privilege to join him as a strong supporter of this approach to education—an approach which is sensitive to the special needs and to the culture of millions of Americans for whom traditional approaches have been inappropriate.

Bilingual education, based upon an approach to education in which the indigenous native tongue is used as a teaching medium to assure acquisition and mastery of the content while English is still being mastered as a vehicle of instruction, has demonstrated its effectiveness. Yet, it has never been adequately funded. In fact, appropriations to date have enabled the Office of Education to fund only a fraction of the program applications submitted. The needs of more than three million children have yet to be met by appropriate bilingual education approaches.

In view of the millions of dollars the Government spends annually to teach languages in the foreign service, the Department of Defense, the Agency for International Development, the United States Information Agency, and other agencies and departments, I do not believe it is unrealistic to provide sufficient funds to help American children who speak the same languages natively—and suffer severe educational handicaps as a result.

Two higher education programs have been terribly underfunded in the House bill:

EDUCATIONAL OPPORTUNITY GRANTS

I am particularly distressed at the House's action in reducing what I consider an already inadequate Administration request for EOG funds of $185.6 million by $17.9 million. The resultant appropriation of $16.7 million will provide for the same number of first year grants as were provided for in the 1970 budget. I believe that we must fulfill our commitment to the growing number of talented but financially needy young people dependent upon this grant program. I urge the Committee to fully fund the $278 million authorization ($170 million in new authority, $108 million needed for continuation grants) for the EOG program in fiscal 1971.

Between 600,000 and one million educationally qualified high school graduates are denied the opportunity to start college each year simply because they lack the ability to keep pace with rapidly rising costs of higher education. Our nation cannot tolerate this tragic waste of human potential. Educational Opportunity Grants help meet this need, and I urge full funding of their necessary, yet, modest, authorization.

COLLEGE WORK STUDY AND COOPERATIVE EDUCATION PROGRAMS

The House bill merely meets the Administration's inadequate $160 million budget request for these programs so vital to the low income student. I believe that the Congress should meet its obligation to this group of students, and to the nation's future, by fully funding these programs at their 1971 combined authorization level of $330,750,000.

OTHER PROGRAM NEEDS

While I have focused upon a few areas which I consider particularly critical in the 1971 budget, by no means do I believe that we are meeting our funding commitments to other vital programs.

During the recent consideration of the Elementary and Secondary Education Amendments of 1969, I proposed authorization increases for several key programs. These included Titles I, II, III, V, VI, VII and VIII of the Elementary and Secondary Education Act, along with several Titles of the Vocational Education Act.

I did not propose these authorization increases lightly. I did so with the intention of working toward full funding of each and every one of these important programs.

We still face unmet needs in the extent and quality of library and audio-visual materials, in support of innovative programs and guidance services, in educational research and development, in strengthening State Departments of Education, in services for the handicapped, in vocational education, and in assistance to our institutions of higher education.

I urge the Committee to work toward full funding of all education programs as a necessary investment in the future of our nation and its young people. We can afford to do no less.

PROPOSAL FOR INDOCHINA CONFERENCE

Mr. HARRIS. Mr. President, on April 2, 1970, the distinguished senior Senator from Kansas (Mr. PEARSON) and I submitted Senate Resolution 383, a resolution to express the sense of the Senate for an Indochina conference. Since the submission of the resolution, 12 other Senators have joined us as cosponsors.

When the resolution was submitted, I said:

The clear choice in Indochina is between area political settlement and area military conflict. An independent settlement for one part of the area alone will ultimately disintegrate, just as has begun to occur with the fragile Laotian neutrality established in 1962.

Area political settlement must be negotiated, rather than sought by military means.

Yesterday, the Secretary General of the United Nations, Mr. Thant, also called for an international conference to seek peace in Indochina. In making this request he considered it "an indispensable step of the utmost urgency." He further stated that "all who seek peace and justice should support such a move."

I believe that Secretary Thant is correct in this suggestion, and I again express my support for seeking a political settlement of the conflict in Indochina rather than widening the war through military operations.

An article entitled "Thant Makes Appeal for Urgent International Conference to Seek Peaceful Settlement of Indochina War," published in today's New York Times sets forth in more detail the thinking and reasoning of Secretary General Thant. I ask unanimous consent that the article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

THANT MAKES APPEAL FOR URGENT INTERNATIONAL CONFERENCE TO SEEK PEACEFUL SETTLEMENT OF INDOCHINA WAR

(By Sam Pope Brewer)

UNITED NATIONS, N.Y., May 5.—Secretary General Thant made a worldwide appeal today for an international meeting to seek peace in Indochina.

He called such a conference "an indispensable step of the utmost urgency," and concluded, "all who seek peace and justice should support such a move."

The Secretary General recalled that he had consistently said for several years that no peace could come to Vietnam and its neighbors in Indochina through military action.

As the text of Mr. Thant's statement was distributed here, he delivered it orally over the United Nations television and radio hookup. At least 18 countries took it through satellite transmission for live television showing, the secretariat reported. Those did not include the Soviet Union.

NO DECISIVE U.N. ROLE

Mr. Thant noted that the United Nations had "not been in a position so far to play a decisive role in bringing an end to the conflict." He said this was partly because several of the parties involved—he apparently meant North Vietnam, South Vietnam, the Vietcong and Communist China—were not member states. Another reason, he said, is that many members "including some permanent members of the Security Council, were not in favor of United Nations involvement."

The principal opponent of such discussion in the Council has been the Soviet Union.

"I fear that, if the parties envolved do not take urgent, decisive and courageous measures toward peace, it will become increasingly difficult to end a war which constitutes a threat not only for the peoples of Indochina but for the whole of mankind," Mr. Thant said.

Coincidentally with Mr. Thant's statement, the United States made public the text of a letter to the Security Council reporting the United States action in Cambodia and the reasons for it. The United States representative, Charles W. Yost, who presented the letter today to Jack Kosciusko-Morizet of France, president of the Council, asked for its circulation to all Council members.

Similar letters were presented on Feb. 7 and 27, 1965, to explain American armed action in South Vietnam. They required no Council action.

THANT BRIEFED ON LETTER

Mr. Yost called on Mr. Thant yesterday and advised him of the gist of the letter.

It started by accusing North Vietnam of aggression and described the sending of United States and South Vietnamese troops into Cambodia as "appropriate measures of collective self-defense by the armed forces of the Republic of Vietnam and the United States of America."

It was basically a summary of the reasons given by President Nixon on Tuesday, with quotes from Mr. Nixon on preventing the use of Cambodia as a "springboard for attacks" by North Vietnam and on "ending the war in Vietnam and winning the just peace we all desire."

Mr. Yost assured the Council: "The United States wishes to reiterate its continued respect for the sovereignty, independence, neutrality and territorial integrity of Cambodia."

Mr. Thant's statement began: "For many years I have expressed my belief that military methods would not bring about a peaceful solution to the Vietnam problem and I have always stated that the only sensible objective was to return to the provisions of the 1954 Geneva agreement."

Those agreements ended eight years of fighting between France and her former colonies in Indochina. They provided for the independence and neutrality of Cambodia and Laos and partitioned Vietnam into two zones with provisions for general elections on their future to be held in two years. The agreements were signed by France, Britain, the Soviet Union, Communist China, Cambodia, Laos and the Vietminh regime, the predecessor to the North Vietnamese Government. The United States and the Vietnamese Government—later the South Vietnamese Government—took part in the talks but did not sign the agreements.

PEACE EFFORTS "VITAL"

"Since the inception of the Paris talks," Mr. Thant said, "I have refrained from public statements in order to avoid any risk of creating unnecessary difficulties for those talks."

He said he had broken his silence not because he thought the Paris talks had failed but because he felt every possible effort toward peaceful solution of the Vietnam war had become "more imperative and more vital now than ever before."

This is because, he said, it has become "alarmingly clear," that "a new and critical stage in the development of that war is being reached."

Mr. Thant expressed concern over the spread of the war into Cambodia and over "the intensification of the fighting in Laos."

GREAT LAKES TEST PROGRAM A FAILURE

Mr. TYDINGS. Mr. President, last summer at the behest of the Great Lakes maritime interests, the Department of Defense undertook a test program of shipping military cargo through Great Lakes ports during the 1969 shipping season of the St. Lawrence Seaway. The lake interests chronically complained that military cargoes were shipped via east coast ports, that lake ports were thus discriminated against, and that the taxpayers' money would be saved by using the lake facilities instead of the tidewater ports. The program was designed to test the validity of these assertions and to see whether DOD should in fact be making greater use of Great Lakes ports.

The test program has been completed. A joint evaluation report by GAO and DOD found that "excess costs of $415,218 were incurred in shipping the test cargo through the Great Lakes compared with east or gulf coast ports." It concluded that "DOD, because of the mix of its cargo and its lack of retrograde traffic, cannot operate controlled vessels economically in Great Lakes ports."

On April 15, the chairman of the Great Lakes Conference of Senators addressed the Senate on this test program. His statement made a number of points

upon which I would like to comment briefly.

The first is its finding that the GAO–DOD report by no means implies that the test program was a failure. With this I agree. The test program was not a failure. The purpose of the test was to determine whether money could be saved by shipping military cargo on DOD-controlled vessels via Great Lakes ports instead of shipping the cargo via Atlantic rail and port facilities. The answer provided by the test is clear. Money cannot be saved. The average cost per measurement ton of cargo was $6.05 less for Atlantic and gulf coast ports than for the Great Lake facilities.

The breakdown of this difference is significant. While the line haul average was lower for the Great Lakes ports reflecting the shorter distance from manufacture to marine terminal, the average port handling and ocean costs were substantially lower for the Atlantic and gulf ports. These lower costs reflect the more advanced port facilities and lower operational costs enjoyed by ships using ports like Baltimore, New Orleans, Norfolk, Boston, and New York, and others.

Moreover, the difference is likely to increase rather than decrease because the lakes do not have the container capacity of the Atlantic ports. Containerization, of course, is playing an ever increasing role in maritime activity. If ports are to remain competitive they must provide up-to-date container operations. The lake ports have not. The breakdown of cover costs is as follows:

[Average cost per measurement ton]

	Great Lakes	East/gulf coast
Line haul	$5.13	$7.30
Port handling	7.08	4.77
Ocean costs	28.89	22.98
Total	41.10	35.05

The test was thus clearly successful in determining which route for military cargo is most desirable. I do not agree, however, with the statement's conclusion that the test program was thus "a first step" in routing additional military cargo via the seaway for overseas shipment. Indeed, the results of the test indicate the opposite, assuming as I do that we are interested in saving our taxpayers' money.

The statement then asks four questions, all of which can be answered relatively easily. "How could a more efficient mix of cargo be achieved?" By carrying fewer military vehicles and more general cargo, as the report itself indicates. Yet the problem is that military vehicles constitute a large proportion of the cargo that requires shipment overseas. Another problem is that, more and more, general cargo is carried in container vessels which are not found in the lakes and seaway. "Could not ship schedules have been arranged to provide for this?" Perhaps, but it is well to remember that these ships were DOD-controlled vessels and thus their schedules were flexible and programed into the test. Civilian shipping lines have been unable to operate regularly scheduled service into the lakes. "And what explains the fact that the level of retrograde was only half that usually carried by military vessels?" GAO is now in the process of consulting with the Defense Department to determine the causes of the retrograde cargo levels and an answer to this question should be forthcoming relatively shortly.

Finally, "Was every effort made to provide the maximum amount of retrograde for the test, so that test results would be meaningful?" Of course the phrase "every effort" is subject to varying interpretations. I would prefer "every reasonable effort." As the Military Traffic Management and Terminal Service—MTMTS—operators of the test for DOD, is interested primarily in costs and is not predisposed toward any particular ports per se and as the question itself involves the manner in which the test was carried out, I would answer that a reasonable effort was made and that MTMTS made an honest and competent effort to conduct the test fairly. Of course, you can always and forever question the manner in which something is done if the results are disagreeable. In any case the question has been directed to GAO which is now checking with MTMTS about the whole question of retrograde. It may well be that some rather simple reasons explain the low level of retrograde cargo.

The statement notes that:

When cargo is transported overland by rail to tidewater ports, as it has in the past this results—

And here the statement goes on to quote the GAO–DOD report:

in additional transportation expenses being incurred because of the additional Line Haul cost necessary to move the cargo to those ports.

This is not an accurate reading of what the report in fact says. It says that the use of Atlantic and gulf coast ports "in some cases results in additional transportation expenses being incurred because of the additional line haul cost necessary to move the cargo to those ports." The additional expenses are not always incurred. In some cases they are, but not always. It would be helpful to know the degree to which the use of tidewater ports significantly increases the overall transportation expenses. It could not be too often for then the test program itself would not have shown these tidewater ports to be rate favorable. Indeed the overall results of the test indicate that "additional transportation expenses" result from use of the lake ports, by $6.05 per average measurement ton to be precise.

Moreover, it is well to remember that line haul costs are but a part of the overall transportation expense in shipping cargo overseas. We must not forget that equally important are port handling and ocean costs. These must be included in any analysis of shipping expenses. They have in this test. The tidewater ports were found to be $2.31 to $5.91 cheaper respectively per average measurement ton.

The statement also notes "a huge discrepancy" between the military cargo produced in the Midwest and the amount shipped via Lake Ports. I find nothing alarming per se about this. Just because cargo is produced in an area doesn't mean it should be shipped out of that area's ports. All of the military cargo made in Texas need not be shipped via Galveston. Nor should all the cargo manufactured in Washington State necessarily be shipped from Seattle. Not even the military cargo produced in Maryland must be sent overseas via Baltimore. The basis for determining the port of debarkation for military cargo is not the distance from point of production but the actual overall shipping cost to final destination. This is the key, the expense incurred not part of the distance involved.

The GAO–DOD report stated that better results might be obtained by commercial U.S. flag carriers. But as the April 15 statement of the Great Lakes Conference of Senators' Chairman itself admits "historically U.S. flag carriers have not brought their ships into the Great Lakes." A few years ago two U.S. lines attempted to do so on a scheduled basis, but were unable to operate the service economically. I certainly have no objection to U.S. flag vessels fairly competing for military cargo by using the Great Lakes ports.

Yet the means to achieve this as proposed in the statement of the chairman is highly disturbing. He would offer an amendment to the cargo preference laws that would permit foreign-flag vessels to carry military cargo, providing no U.S.-flag ships were available "at a U.S. port, or range ports" and providing further that no additional expense results in using foreign ships nor any impairment of national security takes place. On the surface this sounds most reasonable. Yet I do not in fact find it so.

No doubt contrary to the stated intent that this proposal is not directed against our merchant fleet, I believe acceptance of an amendment of this sort would strike a direct blow at the American merchant marine, would be potentially disastrous for Baltimore and her sister tidewater ports, and would constitute blatant regional favoritism. By limiting the availability of U.S.-flag ships to "a U.S. port," presumably the port through which the cargo's origin is closest or to "range ports," presumably ports within a region, like, for example, the Great Lakes, all the U.S.-flag ships not within that area would be precluded from the protection of the Cargo Preference Act. This runs directly counter to the purpose of the act itself, which is to guarantee U.S.-flag ships Government generated cargo. It would thus result in less cargo for U.S. ships, something which our beleaguered merchant marine can do without right now. As U.S.-flag vessels, for reasons of simple economics, cannot be found in only one of the Nation's maritime areas, that is, the Great Lakes area, the proposed amendment can only benefit the range of Great Lakes ports. It is thus clearly and unfairly regionally biased.

It is also of course directed principally against the Atlantic and gulf coast ports

like Baltimore, which, because of their location and superior maritime facilities, serve as the points of debarkation for much of our overseas military cargo.

As Maryland's senior Senator and a member of the Subcommittee on the Merchant Marine, I am unalterably opposed to an amendment of this type.

In discussing this amendment, the chairman of the conference states that:

> There is no reason why the government should continue to pay the higher line haul costs to the tidewater ports when cheaper and more efficient service is available at nearby Great Lakes ports.

Once again, I want to say that any consideration of shipping costs must include the port handling and ocean costs, both of which were found to be lower at tidewater port than at lake ports. To consider only one element of the overall cost structure makes no sense and leads to distorted conclusions.

Like the chairman of the conference, I too am for more efficient service. I am also for the least expensive service. The GAO–DOD evaluation report clearly shows that this is achieved by shipping military cargos via Atlantic and gulf ports. In light of this, military cargo must continue to be shipped through the tidewater ports. Certainly, continuing the test program into the 1970 St. Lawrence shipping season makes no sense.

POLYGAMY NOT PRACTICED BY MORMON CHURCH

Mr. MOSS. Mr. President, unfortunately, the instructions to those carrying out the recent census contained a mistake which would indicate that the Church of Jesus Christ of Latter-day Saints, commonly known as the Mormon Church, still practices polygamy.

The first presidency of the Mormon Church has called this to my attention in a letter received today.

Page 8 of the census instructions contains a section defining "Wife of the Head of the Household." In that section it says:

> Among American Indians, Mormons, etc., there may be more than one wife of the Head.

It is true that the Mormon Church did at one time practice polygamy, but Mr. President, that practice was terminated by the church more than 80 years ago.

The first presidency, in their letter to me, asks, on behalf of the members of the church, that steps be taken to correct this error, that an appropriate retraction be made, and that an apology be extended to the church.

I certainly believe that these requests are justified, and I have today written to Secretary of Commerce Stans, demanding that an investigation be made, and that the retraction and apology be made immediately.

The first presidency, in their letter, point out that it is difficult to believe that any reasonably well informed person in a responsible government position would not know that the teaching and practice of polygamy have been banned by the church. Such a person should also know that polygamy is a felony. This raises the possibility of a deliberate attempt to embarrass the church.

If such a deliberate move is uncovered, I would expect proper disciplinary action be taken.

The Government has taken necessary and proper steps to avoid governmental insults or embarrassments of a racial nature. Equal steps are justified in the religious area.

As a member of the Committee on Commerce, I want to go on record that if I do not receive satisfaction from the Commerce Department, I will ask the Committee on Commerce to look into the situation.

Mr. President, I ask unanimous consent that the letter be printed in the RECORD.

There being no objection, the letter was ordered to be printed in the RECORD, as follows:

THE CHURCH OF JESUS CHRIST
OF LATTER-DAY SAINTS,
SALT LAKE CITY, UTAH,
April 30, 1970.

Hon. FRANK E. MOSS,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MOSS: There has been called to our attention the enclosed instruction sheet which has accompanied many of the census forms now in circulation. You will see that the underlined portion implies that the Church still teaches and practices polygamy, an implication which, as you know, is false.

In behalf of the Church and its membership, we express objection to this error and ask that steps be taken to correct it, that an appropriate retraction be made, and that an apology be extended to the Church.

We would also appreciate an explanation of how such an error would have occurred. We find it difficult to believe that any reasonably well informed person in a responsible government position would not know that the teaching and practice of polygamy have been banned in the Church for about eighty years, or that polygamous cohabitation constitutes a felony under our laws. This leads us to wonder whether the error represents a deliberate attempt by someone to embarrass the Church or to arouse antagonism or opposition toward it. Should inquiry disclose this to be the fact, then we think appropriate disciplinary action should be taken against those responsible.

Your attention to this matter will be appreciated.

Sincerely yours,

JOSEPH FIELDING SMITH,
HAROLD G. LEE,
N. ELDON TANNER,
The First Presidency.

DEATH OF JOHN J. McMULLEN

Mr. TYDINGS. Mr. President, it is with great sadness that I note the death of John J. McMullen, chairman of the board of the Times & Alleganian Co. John McMullen was a great newspaper publisher and his papers were a tremendous asset to western Maryland and the entire State. Mr. McMullen did more than publish an outstanding newspaper, however.

In his quiet way, he was instrumental in advancing the improvement and development of western Maryland. His key role in the establishment of the Allegany Community College, in the building of highways in that part of the State, and in the control and purification of the upper Potomac River are only a few notable examples of his work.

We will miss John McMullen. No one will be able to replace him. It is proper now to honor him for the wonderful things that he did for our State.

I ask unanimous consent that an editorial about John McMullen, published in the Evening and Sunday Times, be printed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

JOHN J. McMULLEN

John J. McMullen, chairman of the board of the Times and Alleganian Company, shied away from personal publicity even though he was the publisher of Cumberland's newspapers for many years. Mr. McMullen, who died Monday, enjoyed being the first to know what was going on in the community and he wanted other people to know about it, but he often requested that his name be kept out of a story when in fact he was the most important participant in the event being related.

No one, except his most intimate associates, had any conception of the many area betterment projects in which he played a major and decisive role.

One of his behind the scene activities was his interest in the establishment of Allegany Community College. He was an important figure in helping make possible the new campus and was instrumental through his state connections in having Route 40 and Williams Road joined with a modern link so that the college could be reached in easy fashion from two directions.

Mr. McMullen was a "born Democrat" but he never became too immersed in Democratic politics to realize that his party did not always have the best candidates.

If there was any one thing which dominated Mr. McMullen's life in recent years, it was his desire to improve Western Maryland's highway connections with all the major cities.

Both as a member of the Maryland State Roads Commission and as an individual, Mr. McMullen worked hard to reach these goals. He accomplished much of this during his lifetime and was looking forward to the bidding on the phase of the National Freeway contract which would take the road to the Garrett County line. The highways of this area will always furnish a monument to his attainments.

He was chairman of the Upper Potomac River Commission, a group which constructed the Savage River Dam. This led to a cleaner and controlled supply of water in the Potomac River and the project was instrumental in the refurbishing of the Luke Mill of Westvaco, Inc. He was also looking forward to construction of the Bloomington Dam.

Mr. McMullen always looked at the "big picture" and never allowed little things to blur the scene. He felt that if something was worth doing and would improve Western Maryland, a way could be found to accomplish the task.

Not the least of Mr. McMullen's traits was his friendliness and his willingness to help people. This was demonstrated by the many times he went out of his way to be of service to someone who needed assistance and to his keen interest in the Allegany County League for Crippled Children.

Mr. McMullen served his community well and will be missed.

EXTENSION OF EQUAL PAY FOR EQUAL WORK TO PROFESSIONAL, EXECUTIVE, AND ADMINISTRATIVE POSITIONS

Mr. HART. Mr. President, on March 19, 1970, I introduced a bill—S. 3612—which would amend section 13(a) of the

Fair Labor Standards Act of 1938 in order to require equal pay for equal work to individuals of both sexes who are employed in a bona fide executive, administrative, or professional capacity, or in the capacity of outside salesman.

S. 3612 would require, among others, that persons in the following jobs or positions receive equal pay for equal work where the equal pay provisions otherwise apply:

Professors, teachers at all educational levels, academic administrative personnel, school principals, assistant principals, student counselors, personnel counselors, lawyers, physicians, engineers, pharmacists, chemists, accountants, office managers, department managers, assistant managers, buyers, executive assistants, administrative assistants, credit managers, loan officers, adjusters, actuaries, underwriters, personnel managers or directors, purchasing agents, outside sales people, programers-systems analysts, technicians, technologists, therapists, registered nurses, account executives, traffic managers, editors, creative writers, TV and radio announcers, and so forth.

Title VII of the Civil Rights Act of 1964, which is administered by the Equal Employment Opportunity Commission, prohibits discrimination on the basis of sex. Title VII provides protection in the case of certain executive, administrative and professional employees, but does not apply "to an educational institution with respect to the employment of individuals to perform work connected with the educational activities of such institution"—that is, no protection for teachers, professors, and so forth.

Because the enforcement provisions of title VII of the Civil Rights Act are complex and cumbersome, and require that the name and identity of an aggrieved individual be revealed by a written complaint, the Equal Employment Opportunity Commission has received very few complaints from executive, administrative and professional employees. The chief thrust of title VII was designed to permit the Equal Employment Opportunity Commission to attempt to conciliate employment discrimination disputes and no lawsuits may be brought under the act until various waiting periods have expired. If an alleged unfair employment practice is potentially subject to redress under State or local law, the Equal Employment Opportunity Commission must first refer the complaint to the State concerned. Generally speaking, the aggrieved individual, if conciliation efforts do not succeed, has only a choice of hiring a private lawyer and filing a private suit, or of dropping the complaint. Such a system clearly places a complainant in considerable personal jeopardy, with the likelihood of losing her job in the future and consequent difficulty in finding other employment.

On the other hand, the Equal Pay Act of 1963, as an amendment to the Fair Labor Standards Act, enjoys the great advantage of that act's strong enforcement remedies—all of which are applicable to the equal pay provisions.

The Wage and Hour Division of the U.S. Department of Labor, which enforces the Equal Pay Act, is generally able to obtain compliance through educational methods and the voluntary correction of violations but, if there is a refusal to comply or deliberate violation of the law, severe penalties are provided in the statute. The Secretary of Labor may obtain a court injunction to restrain not only continued violation but withholding of back wages legally due. The Secretary of Labor may also bring suit for the back wages upon written request of an aggrieved employee, or the employee may bring suit through his or her own attorney for the back wages owed, plus an additional amount as liquidated damages as well as attorney's fees and court costs. Complaints under the Equal Pay Act are treated in strict confidence by the Division and, unless court action ultimately becomes necessary, the name of the complainant need not be revealed.

It is my hope that the Committee on Labor and Public Welfare will give early attention to this measure. And I wish to note for the RECORD that there is a misprint in line 5 of S. 3612. The parenthesis beginning "(except Section 8(d) . . ." should read "(except Section 6(d) . . ."

AWARD BY ASSOCIATED COLLEGIATE PRESS TO NAVAL ACADEMY'S LOG MAGAZINE

Mr. METCALF. Mr. President, Midshipman Daniel A. Ellison, editor of the Naval Academy's Log magazine, and a resident of my hometown, Stevensville, Mont., announced that the Log has been given a second place award by the Associated Collegiate Press. This grade represents an overall evaluation of "very good" and places the magazine above the level of the average college publication. Ellison said that this is the first time in the past 4 years that such an award had been given to the Log and that it represents and exemplifies the excellence, progressiveness, and objectivity shown in that magazine this year.

Ellison is a foreign affairs minor who was appointed by me 4 years ago for one of my vacancies at the Academy. He explained that his magazine has been quite controversial this year and the reason for this is because of creativity and the desire for progressive changes, traits which are abundant among his staff. He also stated that the criticism his staff has received has been their biggest compliment in that it shows that subscribers are reading the Log and reacting to what is printed in it. By doing so they are expressing and communicating individual ideas. Although graduation in June is eagerly looked forward to by Midshipman Ellison, he said he will be sorry to leave undone many other improvements which he had hoped to initiate. He also hoped the Log would continue along its present trend of providing a means for midshipmen to express their ideas and voice their opinions.

ENVIRONMENT AND PRODUCTION: ADDRESS BY ASSISTANT SECRETARY OF THE INTERIOR DOLE

Mr. MOSS. Mr. President, most Americans are becoming increasingly concerned about the quality of our environment. This is a most healthful, hopeful, and necessary development.

But in their intense concern over environmental quality, many Americans, and some officials, tend to overlook the fact that our economy and way of life also is requiring ever greater supplies of energy. Meeting these energy requirements, present and future, inescapably means that new sources of energy will have to be found and developed, and new facilities to produce it built.

This dilemma was faced squarely by the Assistant Secretary of the Interior for Mineral Resources Development, Hollis Dole, in a highly articulate talk before the gas men's roundtable at the University Club on May 5.

Because of the pertinency of Secretary Dole's thoughts to present and future problems before the Congress, I ask unanimous consent that the text of his talk be printed in the RECORD.

There being no objection, the address was ordered to be printed in the RECORD, as follows:

PEOPLE AND ENERGY

However else we may elect to describe our activities in the remaining years of this century, the chief operative term is a dirty, four-letter word called work. Even a casual look at our national agenda reads like a catalogue of the Labors of Hercules: re-building the cities; restoring the quality of our lakes and streams and beaches; cleaning up our airsheds; replacing the green mantle of vegetation stripped away from millions of acres; preserving wildlife and wildrivers; and building a public transportation system that obviates the need for 1½ private vehicles per household. In thirty years we shall have to do more building than has been done on this Continent since the Spanish erected the stone gates at St. Augustine, Florida four hundred years ago. I have seen estimates upward of a trillion dollars placed on this undertaking alone. Hundreds of billions more will need to be spent to rescue our environment. I cannot even guess what will be required for a truly adequate transportation system. And on top of all this, we must provide for the needs of at least 75 million more Americans who will be with us by the turn of the next century.

We are prone to state the costs of these vast undertakings in terms of dollars because they have been our conventional standards of value. But we ought to understand that what we are really talking about is energy. The support of life and the accumulation of material wealth which forms the basis of civilized activity are pure functions of energy production and use. Every material object we own or use had to be extracted or grown, handled, fabricated, and moved from point of origin to point of use—all of which demands the expenditure of energy in direct proportion to the work required to perform these tasks. It is energy which is the basic form of capital for any organism, be it biological or social. The life or death of an individual, of any species, depends on its ability to produce a surplus of available energy over and above its needs for survival. And so it is with the family, the group, the tribe, and the nation: an energy surplus means expansion in numbers and power and range of activity; an energy deficit means death and extinction.

For a thousand generations men sweated and starved within the limitations of the muscle power of human and animal effort until a point so recent that it can be described as three lifetimes ago. The energy surplus produced was low and it showed in every human undertaking: at the time of Christ, world population was less than 300 million, and 1800 years later it still had not

reached the billion mark. George Washington rode from Boston to New York at no faster pace than did Alexander from Corinth to Athens. The prevailing economic condition was poverty so abject and so pervasive that only a handful of people in any society commanded any measurable surplus of energy at all, and the average life span was less than 30 years.

All this changed with the advent of fossil fuel power ushered in by the reciprocating steam engine, followed by the steam turbine, the internal combustion engine, the electric motor, the gas turbine, and finally the nuclear reactor. The result has been an expansion of energy surplus so enormous as to make the eighteenth century one of the two or three major benchmarks in human history. It is this vast power at our disposal that creates both the opportunity and the threat which confronts us today.

The reality is that we are securely locked in to a high-energy, high-production, high-consumption society with a momentum all its own. We are going to go on chewing up ever-increasing quantities of minerals, fuels, fibers, and products of all descriptions because only by doing so can we reach the goals we have set for ourselves, and which we must achieve if we are to survive.

However much we would like to go back to the more leisurely pace of bygone years we cannot do it. We are committed to economic growth, to the production and use of steadily increasing amounts of energy which can be turned into goods and services to meet the rising needs of the next three decades. We are stuck with the necessity for a Gross National Product that grows, in real terms, at somewhere around three or four percent per year compounded, and with the vast demand for raw materials that such a condition implies.

By the year 2000, the United States can expect to be using twelve billion barrels of oil and two billion tons of coal annually. Assuming that supplies are available, gas demand could be as high as 45 trillion cubic feet in that year. Our needs for copper will increase by 300 percent; for aluminum, by 600 percent; for iron ore, not less than 200 percent; overall, our gross mineral production will have to expand by two to three times its current rate.

Yet it is the extraction, fabrication, use, and disposal of this steadily rising volume of goods that has created most of our problems with the environment. Thus the dilemma: to advance our purpose to make our country a better place for its people to live in, we must depend on the processes which in the past have contributed heavily toward making it a worse place to live in. We are strangling on polluted water and suffocating in polluted air, and in danger of being engulfed by a tidal wave of garbage and junk cars—all directly the product of our so-called affluence made possible by stupendous expenditures of energy. Yet the altogether decent and humane goals we have set for ourselves in the closing years of this Century will require even greater amounts of energy than we have expended thus far.

Plainly, these operations in the future will have to be different from what they have been in the past; otherwise the problem cannot be solved on any terms. The responsibility for change extends through the whole cycle of production and use to final disposal, and involves producers and consumers alike. It means redesigning both processes and products. It requires a fundamental reorientation in the way we have traditionally regarded materials which we have inappropriately labeled "waste," but which may truly be our mines of the future. It will mean new rules and regulations, and above all, a new philosophy in accounting which takes note of all the costs of bringing a product to market—not just those which have found their way onto the books of the producing company. We are just now beginning to see the full scope of these costs, and to recognize that for centuries we have been cheating on the prices we paid for the use of our land, water, and air resources. Almost no attention was paid to waste disposal and restoration, because the scale of operations was small enough that no one was burdened with the consequences of their neglect. But the rapid rise in population, with its steadily increasing demands for goods and services long ago reached and exceeded the capacity of our limited land, water, and air resources to repair the damage being done to them. Now we see these costs in their full and ugly detail: poisoned streams and lakes; decimated wildlife; eroded hillsides; gutted farms; foul air; the ugliness of spoil banks, dumps, and automobile graveyards—all of it now presented as a staggering unpaid bill from past generations of abuse and neglect.

For many years we shall have to pay double. We shall not only have to begin charging the full costs of current operations so that the future is not burdened by the neglect of the present, but we shall also have to amortize this huge debt from the past. This means, of course, that the price of everything we pay, including taxes, will be greater in the future than it has been in the past, because for the first time we shall be paying the true money cost of the goods and services we are using. I will go on to say that many of these cost increases are deceptive. We are not accustomed to paying for air, for example, which we have traditionally thought of as free. Clean air, we now find, costs money, and this is going to show up in our utility bills, among other places. But dirty air costs money, too, and probably more than clean air, for it shows up in laundry bills, painting bills, hospital bills, and even funeral bills. The point is that the cost of using the air resource has been there all the time. We just haven't been allocating it to the proper accounts.

When this principle of Full Cost Accounting is fully adopted and enforced—as it eventually will be—it will then be a great deal easier to get producers to do the right things in the first place because it will be in their interest to do so. I remember a sign in a Pentagon office that said it very well: "We don't have time to do it right; we just have time to do it over." Much of our present grief proceeds out of having to "do over" what we could and should have done correctly many years ago.

This means standards, set by the Federal Government, to insure that all participants play by the same set of rules. Our competitive economy rewards the producer who supplies the best article at the lowest price. This is perfectly compatible with environmental protection provided *all* the resource costs are included. The function of government in these circumstances is to require that this be done, fairly and uniformly. President Nixon described the problem and its solution this way in his message on the Environment:

"Increasingly, industry itself has been adopting ambitious pollution control programs, and state and local authorities have been setting and enforcing stricter anti-pollution standards. But they have not gone far enough, or fast enough, nor to be realistic about it, will they be able to without the strongest possible Federal backing. Without effective government standards, industrial firms that spend the necessary money for pollution control may find themselves at a serious disadvantage as against their less conscious competitors. And without effective Federal standards, states and communities that require such controls find themselves at a similar disadvantage in attracting industry against more permissive rivals."

These requirements have particular relevance to the extractive mineral industries, which by nature are transient users of the land. Their interest in it, begins to decline with the first unit of production, and continues inexhorably until the last. The land offered other uses to other tenants before they came, and succeeding tenants will value it in their own way after they go. Therefore, every mine operator—every oil or gas well operator—ought to know that the costs of cleanup and restoration are a proper charge to their operations, to be recovered from each unit of the resource produced through the life of the property. If the purity of water resources is endangered by their activities, remedial action must be taken. If the air must be protected from gaseous or particulate emissions, that must be taken care of, too. And the total of these costs of protecting the environment can be expected to show in the costs, and prices, of the minerals extracted.

To an encouraging extent technology can be developed to reduce the costs of environmental protection. There is a vast challenge to be met in the field of product design; detergents, fertilizers, and pesticides are needed that degrade quickly to neutral compounds after their initial job is completed. Throw-away containers, mostly of petrochemical materials, are increasingly less compatible with the fact that there are fewer and fewer acceptable places to throw them away. What we really need is a fade-away container—one that will quietly disintegrate after use—hopefully not on the housewife's shelf.

As we know, great effort is being made to get lead out of gasoline, leaving us with the challenge of how to deal with the added pollution implicit in the greater fuel consumption per vehicle mile that will result from lowered engine efficiency. Forward-looking oil companies might well ask themselves "is this just a responsibility of the engine-builders, or is there some change we can make to our gasoline that will reduce pollution and give us an advantage over our competitors?"

Reclaiming used materials—particularly metals—has the double advantage of relieving pressure on supply while contributing to clean-up of the environment. The solution lies partly in the field of technology and partly in providing economic inducements which will make the gathering of scrap metals worthwhile for people who otherwise would not bother to do so. A housewife who will meticulously save green stamps worth one-tenth of a mil each will throw several hundred dollars' worth of salvageable materials into the trash can in the course of a year's time, where it has to be hauled away by workers paid $2.50 an hour or more to a dump which is both an eyesore and a health hazard and a source of air and water pollution as well. I submit that if municipal authorities would offer green stamps to housewives for tin cans and aluminum foils, wrappers and containers of various types, it might be well worth the investment. Each year we throw away 25,000 tons of tin in the coating of tin cans. This is equal to all the tin we get from all other secondary sources and of course, we produce virtually no tin in this country. In 1968 nearly 300,000 tons of aluminum were used in the manufacture of cans, lids, and caps, and virtually none of it will be reclaimed if present disposal practices are continued.

Who knows? If we could persuade the housewife to separate the cans and bottles from the rest of the refuse, we might even find a new source of oil to supplement our conventional supply. Our scientists in the Bureau of Mines have shown that a ton of wet urban refuse can be made to yield just over one barrel of crude oil by treating it in the presence of carbon monoxide and steam under 1500 psi at 480° F. This is a better yield than we can expect to get from oil shale, after all, and its sulfur content is about

one-tenth of one percent. The process also works on sewage sludge, I'm told, which opens up another possibility.

It's obviously not economic as yet to obtain oil in this way, but neither is it economic to spend money to haul away garbage to increasingly distant locations. At some point in time it might become worthwhile for cities to bear part of the cost of turning a disposal problem into an ecomonic asset.

The point of all this is that there is a large area of overlap between the responsibilities of producers and the responsibilities of consumer-citizens. They possess the capacity to help each other solve our common problems—or to make their solution difficult or impossible. Success depends upon their cooperative efforts. The pollution-control devices on automobiles are good and getting better, but their effective operation depends finally upon the care and attention given them by the user. Industrial plants and municipalities can spend millions of dollars aimed at restoring the quality and beauty of a river only to have their efforts vitiated by the carelessness of campers and boaters who continue to use the river as a dump. Each year hundreds of millions of dollars are spent to pick up bottles, cans and paper in our parks and along our roads and streets—the legacy of persons too lazy and inconsiderate to put them in the nearest trash receptacle. Cleaning up America is a responsibility shared by every man, woman and child capable of rational thought. Individuals—because there are now so many of them—have enormous power for good or ill in the campaign for cleanliness and beauty in America.

So my plea here is that we understand the given imperatives of our situation as we move into the last third of this century. It is energy, produced and expended in prodigious quantities, that is the source of all our wealth and power and capacity to act. The enormous tasks that we have set for ourselves will require an even greater expenditure of energy in the future than in the past, and hence a greater outpouring of goods and services. We are back again to the basic economics of work performance: to foot-pounds and ton-miles, to kilowatt-hours and horsepower hours, to kilogram calories and Btu's. Our objectives can be satisfied only by the given number of work units required to attain them, and no flight is possible back to a simpler, more primitive state.

If we as a nation are to go anyplace except down hill, power plants will have to be built, coal mines must be opened, wells must be drilled wherever there is a prospect of finding oil or gas. Oil must continue to move in pipelines and ships, to be burned in engines and furnaces and boilers. Farms must continue to use pesticides and fertilizers, mines must continue to wrench out the minerals needed to feed the growing demands of factories. The essential processes which sustain us all must go on.

What we can do, what we must do, is to manage our production and consumption of these increasing amounts of energy, goods and services so that damage to the environment remains within the capacity of natural processes to restore—and quickly. This will require the concerted action, the cooperative action, of government at all levels and the private sector; of producers and consumers; of Americans of all ages in all parts of the Nation who have a love of their country and a concern for making it once again deserving of the title America the Beautiful.

TENNESSEE WALKING HORSE: THE HOUSE MUST ACT

Mr. TYDINGS. Mr. President, on December 18, 1969, with bipartisan support the Senate passed my bill to outlaw the soring of Tennessee walking horses. Soring—the practice of deliberately making the front feet of the Tennessee walking horse sore to induce a long striding step forward—is a cruel and unnecessary shortcut too often substituted for the longer training period usually required to produce the magnificent prance of the Tennessee walker.

Overwhelming evidence presented at hearings held by the Subcommitte on Energy, Natural Resources, and the Environment indicates that Federal prohibition alone can terminate this inhumane practice. It is, therefore, necessary for the House to act to insure the enactment of S. 2543. I urge the other body to do so quickly in order that soring at long last is stopped.

Soring is done by use of chains or tacks on the feet, or by applying a burning agent to the pastern, the area just above the hoof. These burning agents vary, but the most common are an oxide of mercury salve known as "creeping cream," and an oil of mustard mixture called "scooting juice." Other techniques recently developed involve driving nails into the feet, or injecting irritants into the sole area near the heel. These are more difficult to detect, especially as the trainers often then cover the wound with a pad and place an artificial foot over that. The horse moves in extreme agony, crouching on his hind feet with his head drawn back and his ears back.

S. 2543 makes unlawful the shipping in commerce of any sored horse for the purpose of exhibition. It prohibits the showing of a sored horse in any horse show if that horse or any other horse was transported in interstate commerce. It declares unlawful the conducting of a horse show in which a sored horse is shown if any horse in the show moved in commerce, unless all reasonable precautions were taken.

The bill provides a civil penalty of $1,000 assessed by the Secretary of Agriculture for violations of its provisions. Hearings are provided for, and the penalty may be compromised by the Secretary. For willful violations the bill provides a fine of not more than $2,000 or imprisonment of up to 6 months, or both. It is a tough bill, but only a tough bill will terminate soring.

Although the necessity for Federal legislation to outlaw soring is incontestable, it is the stated intent of the legislation to establish concurrent jurisdiction with the States, providing flexibility and possible State action, yet keeping Federal jurisdiction if the States do not do the job.

Senate passage of S. 2543 is personally gratifying to me since it is the third version of the bill that I first introduced on May 11, 1967. Particularly pleasing was the wide bipartisan support that helped secure Senate passage, including the junior Senator from Tennessee, Senator HOWARD H. BAKER, JR.

The broad support for this bill to outlaw the practice of soring is evidence by an article from Life magazine, October 3, 1969; and editorials from St. Louis, Mo., January 17, 1970; Charlotte, N.C., February 9, 1970; Johnson City, Tenn., February 11, 1970; San Diego, Calif., January 10, 1970; and Bloomington, Ill., December 25, 1969. These articles emphasized that termination of the malicious practice of soring is long overdue, and that this termination can only be successful through Federal legislation.

There is a clear imperative for favorable consideration by the House.

I ask unanimous consent that the bill and the editorials be printed in the RECORD.

There being no objection, the items were ordered to be printed in the RECORD, as follows:

S. 2543

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Horse Protection Act of 1969".

SEC. 2. (a) A horse shall be considered to be sored if, for the purpose of affecting its gait—

(1) a blistering agent has been applied internally or externally to any of the legs, ankles, feet, or other parts of the horse;

(2) burns, cuts, or lacerations have been inflicted on the horse;

(3) a chemical agent, or tacks, nails, or wedges have been used on the horse; or

(4) any other method or device has been used on the horse, including, but not limited to, chains or boots; which may reasonably be expected (A) to result in physical pain to the horse when walking, trotting, or otherwise moving, (B) to cause extreme fear or distress to the horse, or (C) to cause inflammation.

(b) As used in this Act, the term "commerce" means commerce between a point in any State or possession of the United States (including the District of Columbia and the Commonwealth of Puerto Rico) and any point outside thereof, or between points within the same State or possession of the United States (including the District of Columbia and the Commonwealth of Puerto Rico) but through any place outside thereof, or within the District of Columbia, or from any foreign country to any point within the United States.

SEC. 3. The Congress hereby finds (1) that the practice of soring horses for the purposes of affecting their natural gait is cruel and inhumane treatment of such animals; (2) that the movement of sored horses in commerce adversely affects and burdens such commerce; and (3) that horses which are sored compete unfairly with horses moved in commerce which are not sored.

SEC. 4. (a) It shall be unlawful for any person to ship, transport, or otherwise move, or deliver or receive for movement, in commerce, for the purpose of showing or exhibition, any horse which such person has reason to believe is sored.

(b) It shall be unlawful for any person to show or exhibit, or enter for the purpose of showing or exhibiting, in any horse show or exhibition, any horse which is sored if that horse or any other horse was moved to such show or exhibition in commerce.

(c) It shall be unlawful for any person to conduct any horse show or exhibition in which there is shown or exhibited a horse which is sored, if any horse was moved to such show or exhibition in commerce, unless such person can establish that he took all reasonable precautions to prevent the showing or exhibiting of such sored horse.

SEC. 5. (a) Any representative of the Secretary of Agriculture is authorized to make such inspections of any horses which are being moved, or have been moved, in commerce and to make such inspections of any horses at any horse show or exhibition within the United States to which any horse was moved in commerce, as he deems necessary

for the effective enforcement of this Act, and the owner or other person having custody of any such horse shall afford such representative access to and opportunity to so inspect such horse.

(b) The person or persons in charge of any horse show or exhibition within the United States, or such other person or persons as the Secretary of Agriculture (hereinafter referred to in this Act as the "Secretary") may by regulation designate, shall keep such records as the Secretary may by regulation prescribe. The person or persons in charge of any horse show or exhibition, or such other person or persons as the Secretary may by regulation designate, shall afford the representatives of the Secretary access to and opportunity to inspect and copy such records at all reasonable times.

SEC. 6. (a) Any person who violates any provision of this Act or any regulation issued thereunder, other than a violation the penalty for which is prescribed by subsection (b) of this section, shall be assessed a civil penalty by the Secretary of not more than $1,000 for each such violation. No penalty shall be assessed unless such person is given notice and opportunity for a hearing with respect to such violation. Each violation shall be a separate offense. Any such civil penalty may be compromised by the Secretary. Upon any failure to pay the penalty assessed under this subsection, the Secretary shall request the Attorney General to institute a civil action in a district court of the United States for any district in which such person is found or resides or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action.

(b) Any person who willfully violates any provision of this Act or any regulation issued thereunder shall be fined not more than $2,000 or imprisoned not more than six months, or both.

SEC. 7. Whenever the Secretary believes that a willful violation of this Act has occurred and that prosecution is needed to obtain compliance with the Act, he shall inform the Attorney General and the Attorney General shall take such action with respect to such matter as he deems appropriate.

SEC. 8. The Secretary, in carrying out the provisions of this Act, shall utilize, to the maximum extent practicable, the existing personnel and facilities of the Department of Agriculture. The Secretary is further authorized to utilize the officers and employees of any State, with its consent, and with or without reimbursement, to assist him in carrying out the provisions of this Act.

SEC. 9. The Secretary is authorized to issue such rules and regulations as he deems necessary to carry out the provisions of this Act.

SEC. 10. No provision of this Act shall be construed as indicating an intent on the part of the Congress to occupy the field in which such provision operates to the exclusion of the law of any State on the same subject matter, unless there is a direct and positive conflict between such provision and the law of the State so that the two cannot be reconciled or consistently stand together. Nor shall any provision of this Act be construed to exclude the Federal Government from enforcing the provision of this Act within any State, whether or not such State has enacted legislation on the same subject, it being the intent of the Congress to establish concurrent jurisdiction with the States over such subject matter. In no case shall any such State take any action pursuant to this section involving a violation of any such law of that State which would preclude the United States from enforcing the provisions of this Act against any person.

SEC. 11. On or before the expiration of thirty calendar months following the date of enactment of this Act, and every twenty-four-calendar-month period thereafter, the Secretary shall submit to the Congress a report upon the matters covered by this Act, including enforcement and other actions taken thereunder, together with such recommendations for legislative and other action as he deems appropriate.

SEC. 12. There are hereby authorized to be appropriated such sums, not to exceed $100,000 annually, as may be necessary to carry out the provisions of this Act.

AGONY OF THE WALKING HORSE

Prancing delicately, stepping high, the Tennessee walking horse is all grace and nowhere in horsedom does the eye encounter elegance to match it. For the rider, the pleasure is greater still. The stride is upholstered, without jog, and floating. Yet precisely because of his distinctive gait, the walking horse is now the center of a raucous, bitter controversy. Traditionally, the gait is the result of breeding and years of careful training. But there are shortcuts, and today almost half of the country's 60,000 walkers are tortured into performing spectacularly. An accepted—and not basically cruel—technique involves rubber pads and weights placed on the horse's forelegs during training (*right*). Trainers have found it more effective, however, to use chains without pads, first raising blisters on the forelegs with chemicals. The result is a handsome, high step—and a horse in agony.

THE PROS AND CONS OF "SCOOTING JUICE"

"Soring," the quick manufacture of a Tennessee walking horse is called. A mustard compound known in the trade as "scooting juice" is applied to a horse's forelegs. The chemical burns, and a trainer wraps a chain around the forelegs to heighten the pain. Tacks or nails driven into the quick of the hoof increase the irritation, making the horse want to lift his tormented forefeet quickly and high—exactly as a walking horse is supposed to do. Congressman William Whitehurst of Virginia has introduced a bill into the House which would stop such torture. Washington's most determined friend of the walker, however, may be Maryland's Joseph D. Tydings, equestrian and senator, who has introduced a similar bill into the Senate. "Trainers are altering the natural gait just to win blue ribbons," says Tydings. "The really responsible breeders deplore the brutality of this but they ignore it." Nevertheless, other respected horsemen maintain that walking horse trainers at least do no worse by their animals than Thoroughbred trainers do by theirs—by forcing their horses to run full-tilt for long distances. Vic Thompson, who has been a professional trainer of walkers since 1946 and has employed mustard oil and chains himself, pleads simply for "additional time in which to continue efforts to improve conditions."

[From the St. Louis (Mo.) Post-Dispatch, Jan. 17, 1970]

HALFWAY TO A HUMANE ACT

It is now up to the House of Representatives to complete a measure to protect Tennessee walking horses from the unconscionable practice of mutilating their feet to produce a distinctive gait. The Senate has passed legislation making it unlawful to ship a "sored" horse in interstate commerce, show a sored horse in a horse show, or conduct a horse show in which a sored horse participates; and establishing penalties up to $2000 and six months' imprisonment. The Secretary of Agriculture would administer the law.

For this action the Senate deserves credit for eventual response if not for celerity, having taken two years to legislate against a barbarous practice which has been going on upward of 20 years. It is a victory for Senator Tydings of Maryland, chief sponsor in the upper chamber. In the House several bills to the same effect have been introduced, with Representative Whitehurst of Virginia as chief sponsor.

Hearings already held in the Senate should make it unnecessary for extensive hearings to be held in the House as should the fact that there is nothing to be said in extenuation of the practice. Soring is a resort of lazy, avaricious and unscrupulous owners to produce a gait which properly comes about through patient training. It results in a form of fraud when champions so produced earn stud fees in excess of $100,000 although sore feet could scarcely be transmitted from sire to colt. The only remaining question is that of penalties, and considering the cruelty of the practice and the scale of the monetary returns those decided upon by the Senate appear appropriate enough.

[From The Charlotte (N.C.) Observer, Feb. 9, 1970]

BILL CAN HOBBLE HORSE "SORERS"

Horse lovers who would stop the inhumane practice of "soring" Tennessee walking horses have reached the half-way point of their goal.

The United States Senate has passed legislation making it unlawful to ship a "sored" horse in interstate commerce, use in a horse show, or conduct a horse show in which a sored horse participates.

The Senate measure establishes penalties up to $2,000 fines and six months imprisonment. The Secretary of Agriculture would administer the law. It is now up to the House to complete the measure for the presidential signature.

The practice of soring the walkers has been around for more than 20 years.

The walking horses are sored to achieve a gait which used to come from fine breeding and patient and skillful training. Since well-trained horses can earn top stud fees, owners after hefty profits irritate the front pasterns of the animals, using chains, acids and other devices to make walking naturally such torture the horses change their gait.

Fast action is needed in the House. Many of the poor beasts are no doubt being "sored" at this moment.

[From the Johnson City (Tenn.) Press Chronicle, Feb. 11, 1970]

STOPPING THE "SORING"

"Soring" of Tennessee walking horses would be stopped under a bill passed by the U.S. Senate and awaiting action in the House.

Many horse lovers have long deplored "soring," a process by which owners irritate the feet of their animals to achieve a certain style of walking.

The desired gait used to come from fine breeding and meticulous training. "Soring" is a short-cut enabling owners to make profits by sacrificing the comfort of the horse.

Under provisions of the Senate bill, it would be unlawful to ship a "sored" horse in interstate commerce, use him in a show, or conduct a show in which such a horse participated.

Penalties up to six months imprisonment and fines up to $2,000 are provided. The law would be administered by the Secretary of Agriculture.

We feel this legislation should be passed—and enforced.

[From the San Diego (Calif.) Evening Tribune, Jan. 10, 1970]

SENATE TAKES HUMANE ACTION

The Senate, before recessing for the holidays, took time from its concern with war, taxes, foreign aid and other weighty matters to pass a bill certain to win the applause of animal lovers.

In a voice vote, the senators forwarded to the House a measure that would outlaw the practice of "soring" show horses.

Trainers have been successful in inducing the distinctive high-stepping gait in the Tennessee walking horse by causing the horse's leg to blister. As a result, the horse lifts his feet quickly, achieving the gait that could be induced naturally only through a lengthy training process.

If approved by the House and signed by the President, the law would prohibit interstate shipment of a sored horse, the show in which a sored horse participates. Violations would carry penalties of up to $2,000 fine and six months imprisonment.

The painful soring process has been condemned by reputable trainers and concerned horse fanciers as a cruel shortcut in the training process.

The painful soring process has been condemned by reputable trainers and concerned horse fanciers as a cruel shortcut in the training process.

The sympathetic concern of the Senate should be quickly endorsed by the House. State legislatures might also be encouraged to enact similar laws covering situations not subject to interstate commerce regulations.

[From the Bloomington (Ill.) Pantagraph, Dec. 25, 1969]

A VOTE FOR THE HORSES

With man's inhumanity to man seemingly beyond repair, progress against man's cruelty to animals may seem unimportant.

Just the same, the Senate has passed a bill aimed at ending the vicious practice of "soring" the forefeet of Tennessee walking horses to produce the desired gait.

The bill was the result, at least in part, of investigatory work done by a reporter-photographer team at the Nashville Tennessean. Newsmen showed the painful results of applying blistering chemicals such as oil of mustard to the horses' pasterns and attaching chains which beat on the sore area.

The Senate Commerce Committee learned through hearings that the rewards from soring—measured in terms of stud fees for a champion—could easily exceed $100,000.

The Tennessee walker's gait may be achieved through patient, careful training by a skilled person with a good animal. Chemical soring is one of those practices which makes one wonder just what the word "sportsman" really means—if anything.

Senator Tydings of Maryland pushed the bill, assisted by senators from the Middle Atlantic and Southeast states where the Tennessee walker is frequently raised.

It is the best news for horses—and genuine horse lovers—since the banning of the practice of running western wild range horses to death by airplane.

EXCELLENT ANALYSIS OF STATE OF ECONOMY BY SENATOR KENNEDY

Mr. PROXMIRE. Mr. President, for many months, all of us have been deeply concerned over the serious problem of continuing inflation in our economy. Last night in Boston, the distinguished Senator from Massachusetts (Mr. KENNEDY) delivered an important address on the state of the Nation's economy. In the course of his remarks, the Senator criticized the administration's economic record for relying too heavily on fiscal and monetary policy alone to control inflation, and he urged the President to make a major new effort to bring restraint to price and wage increases. In addition, he recommended a number of other steps the administration should take in its effort to control inflation, especially in the areas of high interest rates, unemployment, and Federal programs that feed inflation.

Mr. President, I commend the Senator from Massachusetts for his perceptive analysis and thoughtful recommendations. I believe that his address will be of interest to all of us who are concerned with the problems of our economy. I ask unanimous consent that the address be printed in the RECORD.

There being no objection, the address was ordered to be printed in the RECORD, as follows:

ADDRESS BY SENATOR EDWARD M. KENNEDY TO THE ANNUAL MEETING OF THE MASSACHUSETTS DENTAL SOCIETY, MAY 5, 1970

I am delighted to join you this evening and to have the privilege of addressing this annual meeting of the Massachusetts Dental Society.

I am especially pleased to be here tonight, because it gives me the opportunity to say how proud I am of the continuing broad accomplishments of this Society. Through new and innovative approaches to dental care, you have brought a higher quality of health to millions of citizens of Massachusetts. Your programs have served as a model for similar approaches in all parts of America.

I had intended to come here this evening to discuss the increasingly critical state of health care in America. I had intended to discuss some of the great contemporary issues in health policy—issues like health manpower, the health budget crisis, and, above all, the need for an effective program of comprehensive national health insurance.

But today in America, events in our society are overruning us. American soldiers invade Cambodia, pursuing the phantom of military victory. Our President tells us it is not an invasion, since our cause, he says, is just and the campaign will be short.

The strange and tragic fascination of military victory in Vietnam has now cast its mad spell over two successive presidents, and thousands of young Americans have gone to their death.

The end to this madness depends on you and me, and countless other Americans in public and private life. We who are appalled by the new turn of events must raise our voice even more clearly in protest, and demand that it end.

At home, four American students lie dead in Ohio on the playing fields of their university, slain in the heart of middle America by the violent temper of our society—slain as surely as if we ourselves had pulled the triggers of the rifles of the National Guard. Who of us, seeing American troops in Ohio fire wildly into a crowd of students, does not also see My Lai, with its defenseless Vietnamese civilians cut down by American troops? Can any of us fail to realize now what Vietnam has done to our spirit, our nation, and our sons? Has it come to this in America today, that we have begun to shoot our students? I call on all Americans—public leaders, private citizens, and law enforcement officers alike—to pull back from the brink of violent chaos at which we stand.

Last Friday in Boston, I had the opportunity to speak out on what I believe is the single overriding issue of our time—the war in Indo-China. Tonight, I would like to share with you my deep concern over one of the most critical domestic issues of our day—the serious state of the nation's economy. I know that each of you tonight is as concerned as I am over the ominous reports from Wall Street and the serious plight of the economy. We know that the stock market average has fallen nearly 30% from its peak in December, 1968. The long decline has now sent the average to its lowest level since 1963.

Years ago, you and millions of other investors, small and large, placed their confidence and their resources in the stock market as a hedge against inflation. Today, your dreams of financial security have been cruelly shaken. You who entered the market in 1963 now find your stock at almost precisely the same level at which you bought it seven years ago. The value of your investment dollar has stood still, but your daily cost of living has not.

In the last seven years, consumer prices have soared by the astronomical rate of 25%. In terms all too real, therefore, you are only 75% as well off with your investments today as you were seven years ago.

The outlook is also bleak for those who have relied on dividends. Even if the stock market was not an adequate hedge against inflation, it was said, at least it could be trusted to generate a fixed and reliable income. Now in the wake of the latest wave of reduced corporate earnings reports, we are learning that there is no reliable hedge against financial instability, that the only valid hedge is a sound economy.

This is not the occasion to mince words. For the first time in more than a decade, our national economy is in crisis, and the crisis is deepening. We are poised today on the brink of the worst of all possible economic worlds, a simultaneous seige of uncontrollable inflation and unfolding recession.

A huge troubled concern has swept into corporate board rooms, union halls, across the broad belt of middle-class America, and into the homes of the elderly and the retired. Our people are anxious and uncertain. There is a growing climate of fear.

As in so many other crises we have faced—both domestic and international—it helps to see where we have been in order to see our way out.

The key element of American economic history since the end of the Second World War is the contrast between the economy of the Fifties and the economy of the Sixties. Periodically, throughout the Fifties, America was a sick economy. We were plagued by repeated bouts of economic turmoil. As a nation, we struggled through three successive recessions—first in 1954, then in 1957, then in 1960.

At the beginning of the Sixties, however, we changed all that. Together, President Kennedy and his advisers abandoned the laissez-faire economic policy of the Eisenhower era, and embarked on what came to be called the "new economics."

The foundation of the new economics was the basic belief—novel at the time Walter Heller proposed it, but widely accepted today—that sound economic policy is not just crisis management, but that continuing attention to the economy can avoid the costly crises we previously accepted as the inexorable consequence of our free market system.

For the first time in our history, we accepted the principle that the health of the American economy thrives best on a system of preventive medicine. Too often in the past, our only treatment had been drastic surgery performed after the economy had already been stricken by inflation or recession.

The new economics compiled a remarkably successful track record in the early Sixties. We can all remember that extraordinary period of unprecedented prosperity, which brought uninterrupted growth and stability to our economy and a better standard of living for tens of millions of Americans.

Yet, in the mid-Sixties, at the beginning of our national build-up over Vietnam, we ignored the lesson we had learned. Politics triumphed over economic theory, and we failed to take the simple steps so clearly called for to ease the strain on our economy by the war in Vietnam.

Inflation took hold. By the time the surtax was enacted in 1968—three years after LBJ's Council of Economic Advisers first called for it—the economy was already far

off the track. Our record of stable economic growth was broken, replaced by the spectre of uncontrolled spending in Vietnam and rising inflation at home.

I find it fair, therefore, to agree with President Nixon's statement that he didn't make the inflation he found, that he only inherited it when he took office. What I do not agree with, however, is the President's insistence that he is doing the best he can, that he has assembled the best available policies, that he is gradually bringing inflation under control.

If it is fair to say that President Nixon did not cause our current inflation, it is equally fair to say that he has made it worse. The 4% inflation he inherited has turned into 6%. The 3.3% unemployment he inherited has turned into 4.4%, and the end is not in sight. Nearly a million more Americans are out of work today compared to the end of 1969.

Unemployment is climbing, and so are prices. Indeed, the two indicators in the whole economy that are going up—prices and unemployment—are the only two indicators that should *not* be going up.

For fifteen months, we have heard a constant stream of optimistic promises from the Administration that the end of inflation is in sight, if only the American people will have confidence in the Administration. We hear endlessly repeated promises that inflation can be brought under control without recession and without a substantial increase in unemployment. The train is just around the bend, they say, if only we will have the patience to wait. The train may be late, they say, but it is coming.

I am concerned, and millions of other Americans are concerned, that there may not be any bend, that the train isn't coming, that there may not be any train.

For too long, the Administration policies have not achieved results. Month after month, we have been confronted with a dismal and disappointing price record in our struggle against inflation. Again and again and again, the Administration has had to look for good news with a microscope. Time and again, it has pointed to a minor wiggle—a deceleration of one tenth of one percent or so in the Consumer Price Index or the Wholesale Price Index—as a sign that inflation is being defeated, and that stability is being restored.

All we really see, however, is the increasingly heavy toll we are paying in unemployment, high interest rates, low productivity, and our declining standard of living, with no success whatever in our struggle for price restraint. All we have achieved so far is the pyrrhic victory of slowing down the economy without defeating inflation.

Never before in American economic history has a slowdown this pervasive in our economy failed to achieve a slowdown in price activity. Today, we are compiling one of the worst economic records we have ever had—three years of continuing substantial inflation, five years of excessive price increases, and a rapid diminution of public confidence in the credibility of the Administration and in our own ability to bring the situation under control.

The fear is abroad in the nation that policies which haven't succeeded can't succeed, that our efforts simply are not good enough, that unless we make a strong new effort, the situation can and will get worse.

In troubled times like these, Americans have traditionally looked to their government and their President. Roosevelt instilled confidence in the Thirties and turned the nation upward to recovery. The sustained prosperity of the Kennedy-Johnson years gave people confidence for a time that recessions were not inevitable, and that price stability could be maintained.

Today, the atmosphere is different. Many fear that we are turning back the clock of economic policy. The active policies of the Sixties seem to be giving way to the passive policies of the Fifties, and our protests go unheard.

In large part, the current economic crisis, especially its manifestation earlier this week on Wall Street, is in reality a crisis of confidence in America and its leadership. Wall Street has always been a sensitive barometer of America and its people. Over the past year, the Dow-Jones industrial average has dropped 240 points. The stock market has suffered more than $200 billion in losses. Some of the losses are paper losses. But for tens of thousands of little investors forced to sell depressed stocks to pay their living expenses, the losses are very real. Fed by our deepening involvement in Asia and by violent disruptions at home, the current crisis is a clear reflection of the fact that large and small investors alike are demonstrating their concern over the course of the economy and the very stability of our society. More and more of our citizens everywhere are having serious doubts that the Administration can ever deliver on its promises of the last fifteen months.

In part, of course, the stock market crisis also reflects the disorder in Wall Street's own house—the failure to update its management and administrative methods to meet the demands and needs of the Sixties, let alone the Seventies. Already, in the hard times brought on by the year-long stock slide, three brokerage houses have failed, and more may be in danger.

Another factor in the current difficulty is the tremendous recent hemorrhage of European investors trying to get out of the American equity market.

Obviously, there are problems on Wall Street that must be set straight. There is room for improvement and greater regulation—both public and private. Already in Congress, for example, we have begun a constructive discussion of Federally sponsored broker-dealer insurance schemes, capable of protecting individual Americans from serious financial disaster when brokerage houses fail.

At the same time, however, we must be careful to distinguish the symptoms from the disease. Wall Street is only the symptom. It is not the disease. I believe that Wall Street is basically healthy. The improvements we need there are the sort that responsible private leaders and public officials, working together, can perfect and implement at the earliest possible opportunity.

The real disease in our economy lies deep in our overall national policy. The stock market crisis is simply a reflection of the fact that the Administration's whole game plan for the economy is now in question. The primary focus of our concern must be on each of the basic aspects of our economy—prices, jobs, production, housing starts, the standard of living, meeting the needs of the country, and allocating scarce resources in ways that maximize the ability to achieve our goals of political equality and social justice for our people. Only by dealing firmly with these factors can we restore the confidence of our citizens in the basic strength of America.

There were many faults in the President's original game plan. They have been catalogued exhaustively in recent weeks and months, and no useful purpose would be served by more than a brief enumeration here. Nevertheless, I think it helps to chart the plan for the future if we outline some pitfalls of the past.

At the outset, on January 20, 1969, the Administration underestimated the strength of the inflation it inherited. It made the fight against inflation look too easy. Time and again, the most famous quotation of the President's 1968 campaign has come back to haunt him. The only extra unemployment necessary to curb inflation, he said, was the unemployment of President Johnson's economic advisers.

Early in his Administration, the President made what I think has been his most serious and far-reaching error of economic policy—the decision not to invoke any form of the wage-price guideposts used so effectively by President Kennedy and President Johnson in the Sixties to generate a spirit of voluntary private restraint against inflationary price and wage increases. As a result, as economists of every philosophical persuasion have pointed out, the President was left to fight inflation with a two-legged stool—fiscal policy and monetary policy. The crucial third leg of voluntary price and wage restraint was missing.

Next, the President made a double error on the 10% income tax surcharge. First at a time when the need to extend the surtax was obvious, he delayed three months after taking office before making any recommendation whatever to Congress. Then, when at last he acted, he proposed to cut the surtax in half for half the year. Thereby, he introduced the number one political football of the 91st Congress. The invitation was clear and ominous. If the President could cut taxes for political advantage, so could Congress. Overnight, the drive for tax reform was transformed into a drive for tax reduction, to the lasting detriment of the war against inflation and the struggle for adequate funding of urgently needed social programs.

I believe that President Nixon now has a deeper sense of urgency over the deteriorating economy. I am hopeful, especially in light of recent days, that he may already be moving to implement a better-rounded policy. He has called new economists to the White House from outside the Administration. His advisors have met with Wall Street leaders. He has promised a statement on the economy in the near future, perhaps next week.

We know that more can be done. I urge the President to take additional steps in the fight against inflation.

Most important, the Administration, and especially the Secretary of Labor, must paint themselves out of their ideological corner on the issue of voluntary price and wage restraints. Although voluntary restraints are not the only answer, I believe that there may well be no more effective step the President can take at this time to demonstrate his intent to solve the riddle of our "inflation-ridden recession-ready" economy. The time is ripe. The nation is in a mood of growing distress, and therefore of growing responsiveness to new initiatives. The President should seize this opportunity to enlist the effort of business and labor in an effective new program to bring restraint into the arena of price and wage decisions.

Surely, there must be a better policy in this crucial area than our present policy of no action at all. There are many things the President can do. He can communicate with business and labor leaders, talk to the American people, ask us all to exert the utmost restraint. He can appoint a group of distinguished Americans in private life, with experience in public service, to act as an advisory council on prices and wages.

More particularly, because prices are our source of most immediate concern, I urge the President to contact the nation's largest manufacturers—the ones who have real market power in our economy, who really have control over their prices. I urge the President to seek their participation in a pledge of price restraint, a pledge that they will not raise their prices for a reasonable period—say, six months—except in the direct circumstances of irreparable economic injury.

Similarly, in the case of unions with significant power in the economy, the President

can urge real restraint in the upcoming rounds of major wage negotiations. He can make clear to union leaders and rank and file alike that excessive wage increases are inevitably followed by price increases, which vitiate any chance of an increase in real income for the worker.

I emphasize my strong belief that the President can and must apply this pressure with an even hand to both business and labor. The crucial ingredient in any program of price and wage restraint is broad acceptance by management and union leaders. And in order to avoid any of the problems associated with direct personal intervention of the President, each of the steps I have recommended could be taken by an advisory council, rather than by the President himself. All that is essential is that the President begin to act now to take some of the steps that are open to him, and thereby impart a new sense of urgency over the economy.

I am confident that we as a people, as Americans, will respond to the appeal of the national interest. We are willing to pull together, to achieve price stability without the necessity of putting the economy through the wringer. We know that we all will lose far more if we do not bring inflation under control, if the present economic slowdown disintegrates into serious recession.

We don't need mandatory guideposts or other rigid rules to achieve the restraint we need. We don't need a freeze on wages or prices. What we do need is the utmost restraint by management and labor. Only the President has the resources and the prestige to implement a realistic policy of restraint. Only the President can demonstrate the viability of the voluntary way.

Already, there are signs that the Administration is testing the air, even if its motives have not been all we might desire. In recent weeks, the Secretary of the Treasury has been persuading pension funds to buy mortgages, in an obvious attempt to ward off Federal legislation. Last week, the Secretary of Labor urged business leaders to stiffen their resistance in impending wage negotiations. The breath of changing policy is already in the wind, and I urge the President to go forward faster. If the Secretary of Labor can talk to business leaders about resisting wage demands, then surely the President can talk to them about forgoing price increases.

Apart from greater efforts toward voluntary price and wage restraint, there are a number of other steps the Administration can take to relieve the pressure of inflation and the burden of unemployment.

The Federal Reserve Board must take more positive action to increase the supply of money. Over the past year, we have seen interest rates in the nation rise to their highest level since the Civil War. For too long, state and local governments, the home buyer and home builder, the farmer, the small saver, the small businessman, and many other citizens have been squeezed by exorbitant interest rates, the innocent victims of our excessively tight money policy.

What we require today is not selective credit controls, designed to ration scarce credit resources or allocate them to areas of need. What we do require is a modest but general easing of tight credit throughout the economy, so that all areas of economic activity are freed from their monetary shackles. Once the money starts to flow, we will see the real bottlenecks in the economy and direct our attention accordingly.

For months, the President has neglected a progressive program on his desk to deal with the problem of oil imports, a program recommended by a lopsided majority of his own presidential task force. The program should be implemented, so that all of us can enjoy its promise of greater industrial efficency and increased consumer saving.

We need much more far-reaching proposals by the Administration to control the skyrocketing costs of medical care. For too long, we have allowed Federal payments for health care—especially Medicare and Medicaid—to be part of the problem of our health crisis, rather than part of its solution.

Our fair trade laws impose a heavy additional price burden on the consumer. In the 19 states where they exist, they add a total of $2 billion a year to consumer costs, and the burden is especially heavy in drug costs for the elderly.

All our farm programs need a drastic overhaul, especially the programs that now contribute so directly to our inflation. Obsolete allotments encourage thousands of cotton farmers to plant their fields solely to qualify for windfall Federal subsidies. Recent studies show that at least $5 billion a year in Federal farm payments are funneled directly into higher consumer prices.

In the Senate, we have already begun to renew our attack on the ABM, and all the other major areas of defense spending. It is here that the need for new priorities is most obvious, where the mistakes of today reproduce themselves tomorrow and in generations of future budgets. Because we appropriated $100 million this year for a nuclear reactor for an aircraft carrier, we committed ourselves to future spending of $400 million for the carrier itself, another $400 million for the planes on its decks, $800 million for escort vessels, and $100 million a year for operating costs. At last, however, we in Congress are challenging these expenditures. For the first time, we have begun to give the same intense examination to Pentagon programs that we regularly give to all our domestic social programs.

Taken separately, none of these proposals may seem very significant for domestic economic policy. Obviously they are a supplement, not a substitute for a strong fiscal and monetary policy. Yet, taken together, I believe they could shave a total of two or more percentage points off the consumer price index. We know that the spending policy of the Federal Government makes a difference. America is now a trillion dollar economy. One out of every five dollars the nation earns is spent by the Federal Government. Unless we develop more effective ways of setting national priorities, Federal spending will simply continue to feed inflation, without achieving any real progress in all the crucial areas of domestic need.

Finally, we must develop far more successful policies to help the unemployed. So far, we have paid much too little attention to the social consequences of the war against inflation. The most likely victims of the war are the ones least able to help themselves—the poor, the black, the semi-skilled—but they are not the only victims. The largest relative increase in unemployment in recent months has been in well-paid blue collar workers—the $4 an hour, highly-skilled workers in industries like automobiles, computers, and television. Already, unemployment is moving up the economic ladder to even higher income jobs.

This is an important phenomenon, with vast political implications. Today, a real feeling of job insecurity is beginning to permeate the nation—insecurity of a sort that hasn't been felt by skilled blue collar American workers for more than a decade. Recent experience in Detroit, Seattle, and Cleveland has shown what happens. When one worker is laid off, others on his block are put in fear. The effect begins to snowball in the neighborhood, with a devastating impact on consumer sales in the community, far out of proportion to the actual layoffs.

In uncertain and unstable times like these, our Federal, State and local governments have a special obligation to find new ways to strengthen the labor market. When the market is weak, private programs like JOBS don't work. We can't expect Chrysler and General Motors to take on unskilled workers when they have already begun to lay off their own skilled personnel. Only by improving our governmental programs can we relieve this unfair strain on our people.

In closing, let me emphasize my firm belief that I do see the way out of our deepening economic crisis. Let us end our months of confusion and uncertainty. Let us pledge to work together to launch a new period of stable economic growth with full employment. Let us pledge to work together to lay the foundation on which all our other social goals depend. For unless we escape the twin disasters of inflation and recession, all our aspirations for a better America will be denied. A sound economy is the greatest poverty program America ever had. Only by solving the problems of the economy can we buy the time to meet the great domestic issues of our day—to build our cities, to educate our children, to bring equal justice to our people, to guarantee the same high quality medical care for all, to heal the environment, to accomplish all the other goals of our society. We have the tools to meet the problems. All we need is the will.

CONTROL AND ABATEMENT OF POLLUTION

Mr. HARRIS. Mr. President, we are all becoming more and more aware of the importance of conserving our environment and controlling pollutants that are deteriorating the quality of our air and water and other natural resources. As a part of our effort to focus attention on the need to control and abate pollution of all types, we observed on Earth Day on April 22, a day devoted to the problems of pollution and their solutions. As a result of that observance, a noted Oklahoman, Mr. Herb Karner, farm editor for the Tulsa World, wrote a column entitled " 'Earth Day' Observed by Farmers for Years." Mr. Karner's article is very timely and thought provoking, and I ask unanimous consent that it be printed in the RECORD at the conclusion of my remarks.

In his column, "Fence Talks," Mr. Karner points out that under such programs as the Soil Conservation Service, agricultural conservation program, upstream flood control, and other similar measures, the farmers of America have for years been working toward conservation of our precious soil and water resources. Farmers know, perhaps better than any of us, the results which come about when we neglect our environment. They know the disastrous effects of pollution and erosion.

Most of our pollution problems now are urban oriented, and we must devote our attention to meeting them. However, Mr. Karner's article vividly points out that, had we observed in our cities the same conservation practices that we have been observing for over 30 years in rural areas, we might have averted the crisis we now face.

Mr. Karner also reminds us that we must continue conservation practices such as the agricultural conservation program, which the President has recommended be discontinued, if we are to conserve our productive soil and water resources, and if we are to be able to continue to produce sufficient food and fiber to meet the needs of our ever-increasing population.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

"EARTH DAY" OBSERVED BY FARMERS FOR YEARS

(By Herb Karner)

Across the nation students on high school and college campuses observed "Earth Day" last Wednesday. They heard a small army of so-called experts talk about environment, ecology, pollution and resource conservation. Hopefully, these speakers put the problem in proper persective, because the position this country finds itself today is bitterly ironic.

It's ironic because suddenly there's a whole new army of people alarmed about our countryside; about our land and yet for more than 30 years farmers and ranchers have been trying desperately to conserve our soil and water and improve our timberlands. At the same time farmers and ranchers, working with the Soil Conservation Service and the Agricultural Stabilization and Conservation Service, have been trying to tell the general public "look, you've got a bigger stake in this than we have, please help us try to save this land for future generations." All they got for their efforts was a kick in the pants.

It's ironic the turn pollution control has taken. While farmers battle for matching federal funds to carry on conservation, huge new bureaus are springing up with estimates of the cost of controlling pollution and saving the environment which make farmer's requests pale by comparison.

An excellent example: C. A. Tidwell, head of SCS for Oklahoma, says "locally-led, federally-aided conservation programs have dramatically reduced some forms of pollutions and improved our environment. Reforestation, establishing grass and legumes, terracing and other practices installed by Oklahoma landowners have had a measured effect on pollution abatement. Sediment is the largest pollutant of water. Sediment washes from unprotected land into streams and lakes. Soil particles carry disease and wastes, ruin fishing and increase the cost of purifying water," he said.

He continues: "Windblown dust from the Great Plains once polluted the air, but most of this has been eliminated. New ways are being found to use or dispose of waste, and animal byproducts. SCS specialists are spending a larger amount of time each year helping towns, industries, feedlot operators and others install sewage lagoons, catch basins, or sanitary land fills to handle wastes, he said.

It's ironic because at the same time the Senate Agricultural Appropriations Subcommittee was considering budget requests for 1971 and one of the items they are mulling over is President Nixon's proposal to eliminate the ASCS program. Sen. Fred Harris reported that last year in Oklahoma alone 21,000 farmers participated in this cost-sharing program, building terraces and ponds, clearing timberland, seeding and sodding to protect our valuable land.

It's ironic that in one breath government officials say it's going to cost upwards of $100 billion the next few years to save our environment, and at the same time they want to cut out a measly $220 million a year that farmers match dollar for dollar. It's a cinch the way pollution control is going now, the federal government will bear the burden, meaning the taxpayers. Spend a dollar to save a nickel.

But the one thing that concerns us most is that all this ballyhoo about pollution and saving our environment will be treated as a fad; that federal planners interested in creating new bureaus and saving old jobs will obscure the real issue. And that issue is simple. What citizens are doing to this planet is wrong. It's ironic that at the same time "Earth Day" is trying to inspire the young to become evangelistic about saving this Creation; farmers and ranchers have for years observed what they call "Stewardship Sunday" all across the land. They invite preachers and businessmen to a breakfast and they talk about our heritage; they talk stewardship of our resources; they try to get across the message of saving our earth for coming generations; they appeal for support. They point out that we are really not owners of this globe, but are supposed to take care of it. They are emphatic that when we don't, we are guilty of plunder, pillage and wanton destruction. All this is wrong—morally wrong.

It's ironic that at the same time we have government projects working feverishly to convert solid waste—garbage—into usable products, industry is working overtime contributing to the solid waste problem. It's ironic that at the same time we're spending $4.5 billion a year to get rid of 350 million tons of waste, consumers are clamoring for greater amounts of discardable containers and products. It's ironic that this is supposed to be a nation based upon moral laws. But until we can get it through our thick heads that the issues we talked about on "Earth Day" are really moral issues; that federal planning or city ordinances won't solve our problems; until we are convinced the solution to the problem lies within the heart of each person—young and old—we won't get very far cleaning up the nest we've so miserably fouled.

INTERMODAL TRANSPORT—A NEEDED STUDY

Mr. TYDINGS. Mr. President, one of the more important problems facing transportation today is the adjustment of our Government institutions by technicological advances created by private industry. In commercial matters, particularly in matters of foreign trade, governmental institutions must be responsive to the needs of our business community, especially shippers and carriers.

Each day foreign trade looms more and more important as a factor in protecting our economic well-being. It thus is to our benefit to remove any impediments, legal or otherwise, to the flow of such trade.

As Maryland's senior Senator and a member of the Subcommittees on Surface Transportation and Merchant Marine, I am pleased and proud to note that a constituent of mine from Baltimore County, H. Bernard Mutter, Deputy Solicitor of the Federal Maritime Commission, was selected by the Maritime Transportation Research Board of the National Academy of Sciences to head up a study on the legal aspects of intermodal transport, a vital and increasingly important phase of transportation.

I note that this study is being conducted in the best tradition of the prestigious National Academy. Many experts both laymen and lawyers are donating their time and energy to the project. I also note that it is a bipartisan effort. The Senate is represented from both sides by able staff members from the Committee on Commerce—Arthur Pankopf, Jr., minority staff director, and A. Daniel O'Neal, counsel, Surface Transportation Subcommittee.

The Department of Defense and the Maritime Administration of the Department of Commerce, who have funded the study, are obviously involved in great transport problems that raise significant legal questions. These questions must be resolved if our transportation system is to be both flexible and fair.

The full story of the Study of the Legal Aspects of Intermodal Transportation—SLAIT—was recently published in Traffic World of April 4, 1970. It outlines some of the problems to which Mr. Mutter will direct the study. I ask unanimous consent that the article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

THE WEEK IN TRANSPORTATION: GOVERNMENT BACKS UNPRECEDENTED STUDY OF LEGAL ASPECTS OF INTERMODAL TRANSPORT

(By Carlo J. Salzano)

(NOTE.—Funded by Department of Defense and the Maritime Administration, study under the auspices of the National Academy of Sciences will delve into national transportation policy, through rates, liability.)

Unlike the building contractor, who, through the efforts of architects and engineers, knows even before a footing is poured that his structure will accommodate its intended purpose, the shipping community, attempting to flush out the concept of intermodal transportion in foreign commerce, has had no such comforting blueprint.

Although the concept of practical intermodal transportation has been with carriers and shippers for at least a decade, there appears to have been no single comprehensive effort by government or industry to determine whether this country's legal institutions impede or accommodate that concept. There has not been, that is, until now.

Only a short time ago, the Department of Defense and Maritime Administration, recognizing that intermodal transportation may demand new legal requirements in order to operate successfully in the national interest, started the ball rolling toward what may be the nation's first full-scale effort to evaluate a myriad of federal and state laws and international agreements to determine their roles in the expeditious movement of freight between inland points in the U.S. and inland foreign points (T.W., Feb. 14, p. 38).

If the shipping community has been putting the cart before the horse, it might be said that these two government agencies have taken steps to unhitch the rig just long enough to place in perspective some of the ingredients of intermodal transportation that the government feels are basic to a coordinated and prosperous system. The U.S. government, after all, is probably the world's biggest shipper.

Determined to identify any legal impediments to the full enjoyment by carriers and shippers of the intermodal transportation concept, the DOD and MA have joined in sponsoring and funding a study designed to unravel any legal complexities affecting three problem areas—through rates, shipper-carrier liability for cargoes, and burdensome trade documentation.

The project titled "Study of Legal Aspects of Intermodal Transportation" and dubbed "SLAIT" has been assigned to a group of high-level lawyers and laymen by the National Research Council's Maritime Transportation Research Board. The study is being directed by H. B. Mutter, deputy solicitor of the Federal Maritime Commission and adjunct professor of law at The American University. Working directly under Mr. Mutter as project manager is S. Lynn Walton, a staff member of the MTRB. The group has been given 11 months, until January, 1971, to submit its report. The study is being done with the cooperation of the Council on Transportation Law of the Federal Bar Association.

Explaining the key purpose of the study, Mr. Mutter said that, in most cases, the regulatory agencies have reacted to changes on a case-by-case basis, making studies only after the fact. Probably this approach stems from legal precedent that only cases and controversies, not hypothetical situations, can be adjudicated in our legal system.

"To prepare for the challenge of intermodal transportation, concerned government agencies must anticipate new legal requirements," he said. "SLAIT will try to project major legal impediments, discovered by research, to transportation innovation and then recommend ways in which our legal/regulatory system can be made more responsive to transportation needs."

To discover and define any such legal impediments, Mr. Mutter said his study team will have to come up with answers in these three broad areas:

1. Is there a national transportation policy that guides the transportation regulatory agencies or other government entities in the solution of intermodal problems. If there is none, should there be one and what should it be? This question, Mr. Mutter said, is particularly vital in connection with any effort to accommodate America's export commerce.

2. Is the current structure for regulating transportation by the federal government accommodating intermodal concepts?

3. Are prevailing anti-trust prohibitions against multi-mode ownership still valid today, or should they be relaxed to facilitate intermodal systems?

Elaborating on the second area, Mr. Mutter said that an effort would be made to review the adjudicatory function of transportation regulatory agencies with a view toward determining whether it can be improved to better accommodate intermodality. In this connection, Prof. Kenneth Culp Davis, of the University of Chicago Law School, has joined the research group to lend his expertise.

Mr. Mutter said that the group, working under the auspices of the National Academy of Sciences, parent of the National Research Council, has been and will be looking at some of the same suggestions made by Consumer Advocate Ralph Nader. The idea of abolishing the ICC as suggested by "Nader's Raiders," and creating a single regulatory agency combining the functions of the ICC, the FMC and the Civil Aeronautics Board, he said, "is being looked at, but it's an oversimplification merely to say that it should be done."

"In principle, it looks good but such a consolidation would present many problems," Mr. Mutter said. "One of those problems, for example, would be the possibility, under such a single agency, of one transportation mode dominating another, when in fact they should be in healthy competition."

In any event, Mr. Mutter admitted that the concept of a single transportation regulatory agency is intriguing and merits SLAIT's attention.

He noted, however, that before specific problems in the regulation of transportation can be dealt with, the legal philosophy that underlies the regulation of transportation first must be investigated. Many of the laws now affecting intermodal transportation are over half a century old and it makes good sense to study their current validity in light of operating innovations and requirements.

An example of the massive collating job ahead for the study team is the recent trip Mr. Mutter and Mr. Walton took to a U.S. Air Force installation in Denver, Colo. There, with the help of the Air Force's LITE system (Legal Information Through Electronics) they began the job of indentifying with the use of a computer sections of the United States Code, international agreements and decisions of the U.S. Comptroller General that may be related to international transportation. This computerized legal information retrieval system could be invaluable. In addition, this data is being supplemented by the work of four law students hired by SLAIT as research assistants. If time permits, the study group hopes to do a compilation of state codes.

But, this systematic study of the law is only one general area of the research project. The study is probably more dependent on its collective wisdom. More than five dozen experts are working with SLAIT and will ultimately have to rely on their own expertise to creat a report.

THREE REGIONAL COUNCILS

The study group is made up of a main body which meets regularly in Washington, D.C. and three regional councils located in New York, Chicago and San Francisco. The main group is scheduled to draft a report on the study for distribution around September 1 to the three regional councils for their review and substantive comments with emphasis on any regional slant.

To bring the main study group up-to-date on various issues, five working committees have been established. The chief responsibilities of these committees are to arrange briefings for the study group by experts who will contribute knowledge, thoughts and experience in open and frank discussion of particular areas of study and to develop their assigned subject areas for the group's final report. The National Academy of Science's rules for the conduct of such studies insure confidentiality for the group's deliberations.

The next scheduled study meeting is to be held in Washington April 7. The morning session will deal with the problem of through rates. The regulatory approach to intermodal transportation will be discussed in the afternoon.

The meetings in May and June will be given over to discussion of the anti-trust aspects of intermodal ownership, the aspects of through liability, and the national transportation policy.

Additionally, in what appears to be a novel research technique for lawyers, the study group is making an effort to elicit the needs of shippers and carriers. Along with all the formal collection of data will be the distribution, to a sampling of industry personnel, of a questionnaire in which commercial traffic managers will be asked to identify legal impediments to intermodal transportation of goods. A percentage of those sampled will be asked to give a narrative response and a smaller sample will be personally interviewed. Shippers, especially, will be given a chance to give their views on regulatory agencies. All the returned information will be computerized and then analyzed by the study group.

Mr. Mutter said that the entire study is one of unprecedented legal research *pro bono publico* (in the public interest). The project director kept that basic premise in mind when he suggested members for appointment by the Academy to the study group and its three regional councils. As a matter of Academy policy, he said, they were selected, not as representatives of their particular organizations or of specific transportation modes, but for their experience and their ability to rise above any parochial interests and to contribute, as individuals, to the deliberations of the study group. He also noted that he himself and all members of the study group and councils are serving without compensation. The funds provided for the project are allocated entirely to such items as project administration, staff and study group travel expenses, computer services, and publication costs.

In addition to the substantive work in the field of transportation law, Mr. Mutter emphasized that the group also hopes to develop new concepts for legal research.

Selected to contribute their services and experience in this massive study, besides Mr. Mutter, were: Thomas R. Asher, partner, Asher & Schneiderman; John C. Ashton, vice-president of the Burlington Northern; Joseph Borkin, attorney, Washington, D.C.; Don A. Boyd, commerce counsel for E. I. Du Pont de Nemours & Co.; Maj.-Gen. John P. Doyle, (U.S. Air Force, retired), MacDonald Professor of Transportation, Texas A&M University; H. Neil Garson, secretary of the ICC; Roger W. Gerling, executive vice-president of Spector Freight System, Inc.; Stanley Hoffman, transportation counsel, Union Carbide Corp.; Robert N. Kharasch, partner, Galland, Kharasch, Calkins & Brown; Richardo Littell, associate general counsel, Civil Aeronautics Board; Jeremiah M. Mahoney, American Export Freight, Inc.; Edward Margolin, director, Bureau of Economics, ICC; A. J. Mayor, vice-president—government relations, Sea-Land Service, Inc.; Robert W. Minor, senior vice-president of the Penn Central Co.; Arthur Pankopf, Jr., minority staff director of the Senate commerce committee; Cary J. Pearce, assistant chief—public counsel and legislative section of the Department of Justice; Cecil J. River, senior vice-president of Acme Fast Freight; David M. Schwartz, director of the Office of Policy Review in the Department of Transportation; Norman P. Seagrave; assistant general counsel for Pan American World Airways; Irving R. Segal, partner, Schnader, Harrison, Segal & Lewis; Stanton P. Sender, transportation counsel for Sears, Roebuck & Co.; Dean B. J. Tennery of the Washington College of Law of American University; Gerald H. Ullman, Attorney, New York City; Dean James A. Washington, Jr., general counsel of the Department of Transportation.

Liaison members to the study group are James E. Armstrong, trial attorney, Regulatory Law Office, Office of the Judge Advocate General, Department of the Army; James A. Rossi, attorney advisor, Office of the General Counsel, in the MA; Milton J. Stickles, assistant counsel, for the Military Sea Transportation Service; and John Tebeau, director—division of carriers, drawback and bonds for the Bureau of Customs in the Treasury Department.

Making up the New York Regional Council of the study group are Arthur Arsham, partner in the law firm of Arsham & Keenan; Robert S. Bollinger, assistant vice-president of the Irving Trust Co.; William P. S. Breese, associate general counsel, Johns-Manville Corp.; Robert D. Brooks, general solicitor for the Penn-Central Transportation Co.; Herbert Burstein, partner in the law firm of Zelby & Burstein; Dudley J. Clapp, Jr., counsel for MSTS—Atlantic; Robert Dausend, director of industrial and regulatory affairs for Sea-Land Service, Inc.; Stanley Drexler, manager—distribution controls for IBM World Trade Corp.; William L. Grossman, professor of business administration of New York University School of Commerce; Max A. King, vice-president—regulatory and industrial affairs of Emery Freight Corp.; Carl E. McDowell, executive vice-president of the American Institute of Marine Underwriters; Leonard M. Shayne of Leading Forwarders, Inc.; Elkan Turk, attorney with Burlingham, Underwood, Wright, White & Lord; John W. R. Zisgin, attorney with Bighan, Englar, Jones & Houston.

The San Francisco Regional Council includes Daniel W. Baker, partner in the law firm of Handler, Baker & Greene; James J. Broz, deputy director—freight traffic, Western Area, MTMTS; Thomas DeLaney, director of research for the Bank of America; Willis R. Deming, vice-president and general counsel of the Matson Navigation Co.; Frederick E. Fuhrman, assistant general attorney of the Southern Pacific Transportation Co.; W. Harwood Huffcut, counsel for MSTS, Pacific Area; Robert Katz, Editor of the *California Management Review* and professor in the School of Business of the University of California, Berkeley; Robert H. Langner, executive secretary of the Marine Exchange

of San Francisco Bay Region; Frederick G. Pfrommer, general attorney for the Atchison, Topeka & Santa Fe Railway Co.; Gayton E. Germane, 1907 Foundation Professor of Logistics in the Graduate School of Business at Stanford University; Clarence Morse, attorney, San Francisco; Paul A. O'Leary, vice-president of the Connell Brothers Co.; Edward D. Ransom, of Lillick, McHose, Wheat, Adams & Charles; John H. Robinson of the Harper Group; Miss Miriam Wolff, director of the Port of San Francisco; J. Richard Townsend, attorney, Martinez, Calif.; Karl M. Rupenthal, director of the Transportation Management Program at Stanford University.

The Chicago Regional Council is in the process of formation.

WICHITA MOUNTAINS WILDLIFE REFUGE, OKLA.

Mr. HARRIS. Mr. President, the Senate, on April 27, passed S. 3222, my bill to designate certain lands in the Wichita Mountains Wildlife Refuge in Oklahoma as wilderness.

The Department of the Interior, more than 2 years ago, conducted hearings in Lawton, Okla., concerning a proposal to designate certain lands within the Wichita Mountains Wildlife Refuge as wilderness in order to assure the retention of these lands in their natural state. On the basis of recommendations made at the hearings, the Department of the Interior decided that some 8,900 acres within the boundaries of the refuge meet the criteria to be designated a wilderness area.

There are abundant reasons for preserving this area as it has always been. Certainly the study of such subjects as geology and ecology in the area will be enriched. And, perhaps more importantly, this act would further protect what is rapidly becoming a unique experience for Americans, camping in a true wilderness. And, finally, this refuge will preserve for the people of southwestern Oklahoma and surrounding States the privilege, should they so desire, of simply viewing nature unmarred by that which is manmade.

Mr. President, the Wichita Mountains Wildlife Refuge is one of the most outstanding recreational areas in the Southwest. Located just a few miles from Lawton, Oklahoma's third largest city, the refuge is visited by nearly 2 million visitors each year. Many of these come just to drive through the refuge on its scenic highway, viewing the herds of buffalo, deer, elk, and longhorn cattle in their natural habitat. Many come with their families to picnic at one of the campgrounds and enjoy the mountain scenery. Others come to swim in one of the numerous fresh water lakes within the refuge. Still others come for the purpose of viewing the natural, unchanged beauty of the area, and to commune with nature unobstructed and undisturbed by man's works. It is for these growing numbers that I proposed this legislation to set aside a portion of this vast refuge to be protected from any form of development and to guarantee the preservation of that which nature provides for the benefit and enjoyment of future generations, and I am, of course, glad that the Senate concurred in the need for such a wilderness area by passing the bill unanimously.

Mr. President, it is fitting that the Senate has acted on this legislation, because just last week, Newsweek magazine, in an article entitled "Where Are They Now? The Buffalo's Comeback," very clearly demonstrated the benefits which the Wichita Mountains Wildlife Refuge has played in conserving an animal which played a significant role in our Nation's history. I ask unanimous consent that the article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

WHERE ARE THEY NOW?: THE BUFFALO'S COMEBACK

The earth is having its day this week as conservationists strive to turn America's attention to the smog above and the exhaust below. But long before industries dumped and automobiles fumed, one of America's most celebrated natural resources was imperiled—and saved—in a dramatic example of ecological rescue. The American buffalo, symbol of the nation's prairie past, is no longer just a shaggy relic of the Old West. Once dangerously close to extinction, the buffalo is now very much back on the scene.

The buffalo, or bison to the biologist, probably came to this continent over the land bridge that once connected Asia and North America. Ranging from the Rockies to the Mississippi River, U.S. buffalo numbered some 60 million by the beginning of the nineteenth century. But shortly thereafter, the systematic destruction of the buffalo became official policy. The U.S. Army, to subdue the Plains Indians, decided it had to subdue their entire culture—including the animal upon whose flesh and hide they depended for sustenance, clothing and for shelter. Special trains were run to the plains for tourists, who gunned down the creature for "fun" and left the carcasses to rot. In 1848, the American Fur Co. sent 25,000 buffalo tongues (considered a delicacy) to St. Louis. By that time the buffalo was not worth the nickel it later came to be stamped on.

Conservation of the animal was gradually brought about by the American Bison Society, founded in 1905, and the New York Zoological Society. Congress set aside money for four national buffalo refuges, the largest of them being the Wichita Mountains Refuge in southwestern Oklahoma, where an original seven bulls and eight cows have been bred into a herd now numbering about 1,000. The recently formed National Buffalo Association estimates the total buffalo population in America to be 15,000. In fact, the animal has come into an ecological surplus in the last few decades. Accordingly, 230 head were slaughtered last season at the Wichita refuge, and a drive-in at Cache, Okla., 5 miles from the refuge, now features buffalo burgers—at 75 cents apiece.

For all that, the Ogiala Sioux Indians still believe that the buffalo will once more thunder across the vast prairies in its old numbers. In its "ghost dance," the tribe celebrates a messiah who will come to bring a new earth to replace the old one polluted by the white man. The Indians' ancestors will then rise to join the new world, there to hunt on a prairie teeming with buffalo. The Sioux's messiah has not yet come, of course, nor have the giant buffalo herds returned—and at least one Interior Department official voices relief. "We couldn't have them roaming the West again," he explains. "There's nothing but six-lane highways out there. They'd be traffic hazards."

MRS. VIRGINIA FORWOOD PATE—OUTSTANDING CONTRIBUTION TO COMMUNICATIONS

Mr. TYDINGS. Mr. President, I invite the attention of Senators to the outstanding contribution of an individual in the field of communications. Mrs. Virginia Forwood Pate, of Havre de Grace, Md., was installed as president of American Women in Radio and Television, Inc., on April 26 during a 3-day convention in London.

A close personal and family friend, Mrs. Pate has just retired after serving as president of the Harford County Board of Education and as chairman of the Harford Junior College board of trustees. In addition, she has been president of the Maryland Association of Boards of Education as well as the first woman to be elected to the board of directors of the Maryland-District of Columbia-Delaware Broadcasters' Association.

I congratulate Mrs. Pate on her most recent achievement.

I ask unanimous consent that an article outlining Mrs. Pate's outstanding career, published in the Baltimore Evening Sun of April 17, 1970, be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[From the Baltimore Evening Sun, Apr. 17 1970]

MEDIA ORGANIZATION TO INSTALL MRS. PATE, OF HAVRE DE GRACE

Virginia Forwood Pate, of Havre de Grace, will be installed as president of American Women in Radio and Television, Inc., April 26, in London during a three-day convention to be attended by 600 people including relatives of members.

Mrs. Pate will be among 12 women to be received privately by Princess Margaret at a reception, at Lancaster House.

Virginia Pate owns and operates radio station WASA in Havre de Grace, an AM and FM station built in 1948 by her late husband, Jason T. Pate, and operated by him until his death in 1960.

She has just retired after 10 years service as president of the Harford County Board of Education and as chairman of the Harford Junior College board of trustees.

She has been president of the Maryland Association of Boards of Education; also, president and former education chairman of the Maryland-District of Columbia-Delaware Broadcasters' Association and the first woman to be elected to its board of directors.

"EL CINCO DE MAYO"

Mr. WILLIAMS of New Jersey. Mr. President, on May 5, our neighbor to the south, Mexico, and her Spanish-speaking descendants in the United States, will join in celebrating the 108th anniversary of a significant Mexican victory over the French. "El Cinco de Mayo" is a great festivity for the Mexican people for it was on that day in 1862 that a small band of poorly equipped but highly motivated patriots withstood superior forces of the French Army.

Prior to Cinco de Mayo, the people of Mexico were subjected to a perpetual inner struggle for governmental power. From 1822 to 1862, approximately 70 governments existed there, includ-

ing monarchs, dictators, executives, and presidents. In 1861, a joint interest shared by France, Spain, and Great Britain prevailed; however, the latter two, as a result of internal policy changes, withdrew from Mexico and returned to their homelands. Napoleon III ordered his French soldiers to remain, as he hoped to eventually control all of Mexico, himself. Although this was a direct violation of the Monroe Doctrine, the United States could take no action against France, as we were deeply involved in our own Civil War.

In 1862, Napoleon III and 6,000 French soldiers began their march of destruction, intending to ultimately reach and capture Mexico City. But on May 5, 1862, "El Cinco de Mayo," the French were dealt their first major setback of the Mexican campaign in the village of Puebla. A small band of Mexican guerrillas, utilizing a surprise attack, successfully drove back the powerful French forces.

Infuriated by this embarrassing defeat, Napoleon again confronted the Mexicans at Puebla, this time with an additional 30,000 soldiers. And the defeat of the determined, courageous Mexicans became inevitable. Consequently, for the next 5 years, Mexico suffered under the tyranny of dictatorial rule.

But the loyalists, unwilling to accept the monarchy, continued to secretly disrupt the government using guerrilla tactics. A successful revolt in 1867 resulted in the final capture and execution of the emperor, thus forcing the French to leave Mexico.

Mr. President, the day the courageous Mexican patriots first defeated the overpowering forces of the French, May 5, is still remembered with great joy and pride. "El Cinco de Mayo" is a day for all Americans to pay tribute to the courage of those men who defended the cause of freedom and self-determination at the risk of everything.

It is a personal privilege to join my fellow 95,000 Spanish-speaking New Jersey residents in celebrating "El Cinco de Mayo" and reflect upon a truly significant moment in the history of man's struggle for liberty.

NORTHEAST CORRIDOR TRANSPORTATION SYSTEMS ANALYSIS RELEASED

Mr. PELL. Mr. President, I wish to take note of the final release by the Department of Transportation of the Northeast Corridor Transportation Project Report.

While I am delighted that the report has finally been made public, I would note with much regret that the Department of Transportation did not see fit to provide this information to the Senate when we were in the process of preparing legislation to aid the railroads.

I think this excellent systems study would have provided us with a more enlightened perspective on the rail passenger problem.

I also wish to commend Dr. Robert A. Nelson, the former Director of the Office of High Speed Ground Transportation, who worked long and hard in the preparation of the report.

I ask unanimous consent that the executive summary of the Northeast Corridor Transportation Project Report consisting of pages S1 through S30 be printed in the RECORD.

There being no objection, the summary was ordered to be printed in the RECORD, as follows:

NORTHEAST CORRIDOR TRANSPORTATION PROJECT STUDY

EXECUTIVE SUMMARY

Conclusions

The Northeast Corridor Transportation Project, through a comprehensive systems analysis approach, is engaged in analyzing and evaluating the transportation needs of the Northeast Corridor through 1980. This report presents some conclusions about the prospects of intercity passenger transportation in the Corridor and suggests ways in which transportation developments can be made more responsive to the Corridor's needs.

The following general conclusions about the future of intercity passenger transportation in the Corridor have resulted from analyses and evaluations conducted to date:

Auto transportation will continue as the strongly dominant mode of intercity Corridor transportation, at least through 1980, regardless of the improvements which can feasibly be made to other modes.

The effectiveness of intercity line-haul common carriers in improving door-to-door passenger service will be seriously limited in the Corridor's larger metropolitan areas by delays and relative slowness of local access to and egress from transportation terminals.

Without substantial action by the government agencies responsible for intercity passenger transportation in the Corridor area, the following results are probable in the Northeast Corridor:

(1) Major capabilities for the provision of rail passenger service will not be used;

(2) The potential for short and intermediate haul air transportation may not be exploited;

(3) Downtown-to-downtown intercity passenger transportation will, in large metropolitan areas, contribute to congestion on urban transportation facilities.

(4) Transportation facilities which present to travelers high personal accident hazard, which contribute heavily to air pollution, and which have heavy requirements for land will continue to expand;

(5) Less populated areas of the Corridor—rural and suburban—will lose common carrier intercity transportation service;

(6) The several modes of passenger transportation in the Corridor—auto, bus, air, and rail—will not be coordinated in ways which will improve service and raise efficiency.

The Northeast Corridor Transportation Project has depicted and evaluated several ways by which the Corridor transportation system could be made more responsive to the economic, political and social development of the region. Nine possible and widely different transportation systems which might be made operational in the Northeast Corridor in the 1975–80 period were analyzed and simulated, with the following salient conclusions: [1]

Boston to Washington rail passenger service approximating the level of performance of the Metroliners would achieve more efficient utilization of present rail capacity for mainline passenger service and would realize additional revenue in excess of additional costs. For several reasons, including the high cost of capital to the railroads in the Corridor, it is unlikely that the privately owned railroads in the Corridor will choose to provide such service without public support;

Improvements to the existing Boston-Washington mainline of the Penn Central Railroad costing up to $1.3 billion would result in substantially better transportation service to the centers of major metropolitan areas of the Corridor and would yield additional revenues sufficient to cover additional costs, including capital costs of 10 percent per year. These improvements can be made on an incremental basis thus permitting at each step a testing of the attractiveness of better service. Since it appears that the difference between incremental revenue and costs would be greatest at a level of improvement far short of $1.3 billion it seems even less likely that railroads would provide such a level of service without public support;

Short take-off and landing (STOL) and vertical take-off and landing (VTOL) aircraft modes would provide intercity transportation services throughout the Northeast Corridor yielding before-tax revenues sufficient to cover all non-government costs including capital charges at 10 percent per year. STOL and VTOL operation would require some improvement in air navigational technology and in environmental impact planning but only small technological improvements for aircraft;

Two new high-speed ground modes—one, a completely new rail system, and the second, a tracked air cushion vehicle system—would greatly improve intercity transportation along the spine of the Corridor. At the present stage in the analysis, it appears that neither of these two ground modes would be commercially viable within the next decade if a capital cost rate of 10 percent is required;

A combination of vertical take-off and landing (VTOL) air transportation and a high-speed ground mode would provide the widest choice of improved intercity passenger transportation in the Corridor, would generate the largest patronage, and would require the largest operating costs and capital outlays.

The analysis in the Northeast Corridor Transportation Project, to date, has been most useful when applied to the evaluation of the potential commercial viability of the nine alternative systems. An effort was made however, as will be shown in the body of the report, to appraise each mode in terms of its environmental impact, dependence on improved terminal access-egress, dependability under all-weather conditions, improved safety, and flexibility to service occasional demand peaks. Depending upon the weighting of these considerations by public agencies, relative evaluations of the different systems may change.

The use of comprehensive systems analysis, such as carried on by the Northeast Corridor Transportation Project, can significantly reduce the probability of making capital outlays for transportation which are not responsive to public need or which may constitute inefficient ways of responding to public need.

Background of the corridor transportation problem

The Northeast Corridor is faced with growing demands for transportation which have been created by an expanding, ever more interdependent economy and an increasingly mobile society. Those who live, work and travel in the Corridor would probably regard such a conclusion as obvious. What is not so clear is how best to deal with the challenge that this pattern of growth presents. The problem is not in knowing that trans-

[1] Such conclusions could, of course, change as further data and research results become available.

portation facilities in the region need to be expanded and improved, but in deciding what improvements should consist of; where they should be located; when they should be introduced; and how they should be managed, financed, and operated.

Past Approaches

Traditionally, decisions of this nature have largely been made either by the private sector or, where private enterprise has not been practical or has not functioned in the public interest, by independently exercised local and state initiative, with some modicum of Federal involvement. This approach has worked fairly well in the past. After World War II the explosion in automobile production and ownership, accompanied by a shift of population to the suburbs, quite clearly pointed to the need for an expanded highway construction program. The opportunity to exploit, for civil purposes, the great advances in aviation technology gained during the war stimulated public support of airport and air navigation development.

As a result of emphasis and encouragement through public policy, both air and highway transportation have in the past two decades enjoyed consistent and substantial rates of growth and have unquestionably satisfied great public needs. Strong trends in the growth and distribution of population and economic activity in the Corridor have, however, tended to change the region's needs for transportation. These two trends are (1) the increasing concentration of population and employment in Standard Metropolitan Statistical Areas (SMSA's) defined as communities having populations of 50,000 persons or more, and (2) dispersal of population and employment away from urban cores into the suburbs.

Population and Employment Trends

By 1980, over 46 million people will live in SMSA's in the Corridor and about 8.3 million in rural areas. The distribution of population and employment between suburban and core areas through 1980 is more difficult to predict. While there have been pronounced population shifts into the suburbs in the last decade, there have also been large migrations into the Corridor's urban cores from regions outside the Corridor. Nevertheless, between 1950 and 1960 the major urban cores in the Corridor lost about five percent in both population and employment while the suburbs gained over 40 percent. The effects of these changes, even if their pace were slowed, will have important impacts on the Corridor's life patterns for years to come.

CHANGING NEEDS FOR TRANSPORTATION

The trends of population and employment toward metropolitan areas and from the metropolitan cores to their suburbs are undoubtedly responsible for many of the complaints of congestion and delay persistently leveled against the transportation system of the Corridor. Neither highway nor air transportation in their present forms are well suited to the increasingly tight constraints of space in the Corridor; both modes require for efficient operation relatively large amounts of space per unit of traffic. Air transportation's primary advantage, namely speed, is being seriously diminished for short and intermediate trips within the region by congestion in the air and on the ground. In the Corridor, gate-to-gate times between major airports have remained essentially unchanged over the past dozen years—and have risen in some instances—despite a 30 to 40 percent increase in aircraft cruising speeds.

A comparable situation is emerging in highway transportation. The toll roads built in the early 1950's and the facilities constructed under the Interstate highway program have expanded the flow of intercity highway traffic in the Corridor considerably, especially in suburban and rural areas. But congestion in and around metropolitan centers, particularly during peak periods, has tended to reduce the advantages of freeway travel. New roads and highways, constructed to relieve congestion, have often encouraged new traffic to the point that delays in related parts of the highway network have been increased rather than reduced. Public frustration, a sense of crowding, and concern over wasted resources are all natural responses to this cycle of temporary relief and chronic congestion. Thus, the approaches to transportation problems which seemed to be so obvious 20 years ago do not seem so clearly to meet the Corridor's needs today.

THE IMPACT OF URBAN CONGESTION

A major reason for the present inadequacy of short and intermediate intercity passenger transportation is that we have not yet managed to cope effectively with the problems of transportation within large urban areas. Since the Northeast Corridor is preeminently a region of large cities, a very high proportion of all intercity travel in the Corridor involves one or more large metropolitan areas. Hence, the quality of intercity transportation in this region depends in large measure on the relative ease of circulation within metropolitan areas.

The nature and extent of improvements in urban transportation are highly uncertain, and this uncertainty must inevitably impinge upon decisions which might be made about the intercity system. For example, a policy of enhancing, through continued development of urban beltways, the accessibility of suburban (as contrasted to inner-city) portions of metropolitan areas would tend to predispose intercity transport development toward modes such as V/STOL which would be oriented to the metropolitan periphery. If, on the other hand, greater emphasis were placed on enhancing accessibility to the city core through improving and developing radial urban rapid transit, then building intercity high speed ground modes which would penetrate to city centers would be more appropriate.

PROBLEMS OF COORDINATION

Uncertainties about the directions which should be followed to make intercity transportation more effective in meeting the Corridor's needs are heightened by the region's loose and largely uncoordinated decisionmaking structure for transportation. Ten States plus the District of Columbia and well over a dozen major regional agencies have responsibility and authority for transportation planning and investment in the Corridor. To the authority and responsibilities which these agencies have, must be added the interests of the Federal Government and a myriad of private firms. Few statutory procedures exist which could bring coordination to the planning of transportation improvements in the Corridor. The result is that decisions are often made in one jurisdiction without adequate consideration of their effects on other jurisdictions. It is reasonable to assume that the bottlenecks and discontinuities in the Corridor transportation system today will not be dealt with satisfactorily without increased attention devoted to coordination between agencies in the Corridor involved in transportation.

All things considered there are no obvious solutions to the problems of intercity transportation in the Northeast Corridor. Additions to highway and air facilities have come to contribute less and less to the effectiveness of transportation systems in heavily urbanized regions. Railroads, once the mainstay of the Corridor's intercity passenger transportation, have had declining passenger patronage since World War II. The decisionmaking structure is fractionated and does not focus on transportation as a system, and even if it were to, neither tools nor data have been available for comprehensive approaches to transportation planning.

Adoption of a systems approach

Recognition of the growing ailments of the transportation system of the Northeast Corridor and of the shortcomings of existing policies as remedies led in 1964 to establishment of the Northeast Corridor Transportation Project. In a deliberately experimental way, the Corridor project was to be a systematic attempt at determining the intercity transportation facility requirements of a major region of the Nation. In making this attempt, the project was charged (1) to analyze the complex interactions between transportation and structure of economic and demographic development of the Corridor, (2) to forecast the demand for intercity transportation services by mode in the Corridor, (3) to describe the characteristics of transportation services that might be supplied, and (4) in doing all this to give full consideration to the potential of dynamic, innovative transport technology.[2]

Development of a model system

In five years, starting at a very inchoate level of knowledge and methodology, the Northeast Corridor project has fulfilled many, although clearly not all, of these assignments. Using systems analysis techniques and newly developed computer capabilities, progress has been made in developing and applying a comprehensive, general approach to regional transportation analysis. The most important achievement of the Corridor project up to now has been to develop, link together, and operate several models in an interactive process which simulates the forces of transportation supply and demand in the Corridor. The resulting system of models permits examination of the effects of changes upon the competitive interrelationships among modes, and also of interactions between transportation and other sectors of the Corridor economy. A dynamic model process of this nature has not been applied before to regional transportation in the U.S. The basic elements of the model system are as follows:

An econometric model which forecasts population, income, employment, and land use for each of 131 analysis districts (mostly counties) of the Northeast Corridor.

A demand model which predicts intercity passenger travel in the Corridor by city pairs and by modes of travel.

Supply models for air and high speed ground modes which are sensitive to changes in output levels.

Cost models which, based on parametric relationships, predict elements of mode and system cost.

Impact models which predict the effect of transportation changes on population, employment, income and land use in county-size analysis areas.

Supply-demand balancing techniques which make possible simulation of supply-demand equilibrium.

Usefulness of the Model System

The individual models suffer from many shortcomings and hence the results of the model/simulation process should be treated with caution. Nevertheless the performance of the models in evaluating the transportation system alternatives discussed in this report is satisfying both to intuition and to experience. With few exceptions the models produce results which are credible when related to real world situations and their use almost certainly can enhance our ability

[2] This approach was recommended in an executive agency task force report in late 1962.

to make better decisions. Moreover, the process of modeling the Corridor transportation system has substantially raised the level of insights into the workings of the transportation system particularly in application to subareas of the Corridor such as states and counties. It would on the other hand, be a mistake to accept too literally the results of the model simulation process.

The models for forecasting transportation demand have proved their capability to predict the "split" of demand among several competing modes. This allocation of demand among the modes is based not on each mode *per se* but on three basic characteristics of transportation service; namely, trip time, user cost and frequency of service. By approaching the modal split in this way it becomes possible to predict the response of the travel market to totally new modes such as tracked air cushion vehicles (TACV). Reliance by the model on three characteristics of transportation to determine modal split undoubtedly omits some of the factors which influence travel behavior. In the analysis of transportation alternatives in this report other considerations such as comfort, safety, and fashion have been assumed to be equal among the modes. When these attributes differ to a degree which significantly effects modal split, the Corridor demand model becomes less useful.

The development of techniques to forecast impacts of transportation on population, employment, and other economic variables by area has been the major thrust in the attempt to measure the interaction between transportation and its social, political and economic environment. The Corridor impact models show only small effects resulting from the intercity passenger travel changes evaluated in this report. This was to be expected. Indications are that the impact of changes in freight transportation would be much greater. At this time, however, data on freight movements do not exist in the Corridor or elsewhere upon which to test the predictive capability of the impact models. Reliance for model formulation and calibration on patched and stitched-together data must raise an element of uncertainty about results and suggests strongly the need for continued emphasis on a transportation data program.

The development of the Corridor models and procedures is continuing with the goal of producing a set of tools generally useful for the comparison and evaluation of transportation system improvements. The Corridor models can be applied to Corridor transportation in a longer time frame than has been done in this report; they can, with further development, also be applied to the evaluation of freight transportation systems. It should be pointed out, however, that while the models can, with relatively small but necessary recalibration, be applied to intercity passenger movement in other Corridor-type regions of the U.S., they cannot be used in their present form to predict intra-urban passenger traffic. Intra-urban travel and the behavior patterns of commuters are subject to many other influences than those used in determining intercity transportation.

Application of the Models to Alternative Transportation Systems

It was understood at the outset of the Corridor project that transportation system changes tend to have wide implications for regional development and for many other aspects of public policy beyond the sphere of transportation. It was clearly not appropriate for the Northeast Corridor project staff to decide which of these public policies should be pursued. Therefore, a basic premise of the Corridor project has been that the project would evaluate and report on a number of alternative transportation systems which would be responsive to a wide range of policy options. This strategy was intended to permit responsible officials at the Federal level and in the Corridor to relate transportation to fundamental policy objectives. For purposes of the evaluations reported on here the following public policy options were emphasized:

(1) *Degree of technological innovation*—ranging from continued evolutionary development of the present set of modes and services to a quite radical departure involving the introduction of a combination of advanced ground and air modes;

(2) *Emphasis on suburban or central city service*—ranging from ground modes penetrating the city core via tunnels to air systems largely serving the periphery of metropolitan areas;

(3) *Magnitude of capital cost*—ranging from minimal investment in new equipment to multi-billion dollar new investment in fixed facilities and equipment;

(4) *Service characteristics*—ranging from high capacity modes operating on fixed rights-of-way to more flexible systems capable of providing service over a wide area;

(5) *Degree of private vs. public investment*—ranging from systems which could be sustained by private investment and ownership to systems which would require Government support for their construction and operation;

(6) *Requirements for institutional change*—ranging from alternatives which would require only nominal intergovernmental coordination under existing statutory authorization to those which would require new legislation and extensive coordination at Federal, State, and local levels.[2]

Alternative passenger transportation systems for the northeast corridor, 1975-80

The nine alternative systems start with the existing transportation system of the Northeast Corridor projected to 1975–80, and add five new modes in varying combinations with the existing system and with each other—as shown in Table S–1. The designed service pattern of each alternative is generally north-south between Washington and Boston. Each of the high speed ground modes—demonstration rail, high speed rail A, high speed rail C and tracked air cushion vehicles—was designed to serve terminals at Washington and Boston and seven intermediate points in Providence, western Connecticut, New York City, northern New Jersey, Trenton, Philadelphia and Baltimore. The air and highway modes serve more dispersed patterns based on existing networks.

[2] See Table S–2 for the relationship between these six policy options and the nine alternative transportation systems analyzed by the project.

Alternatives I and II

Alternatives I and II would require capital expenditures by 1975 of about $70 million for equipment and grade crossing elimination.

Both alternatives would expand the present fleet of Metroliners and Turbo trains in accordance with increases in demand. Relatively small improvements in roadbed would focus primarily on eliminating highway-rail grade crossings. The annualized equipment cost and roadbed improvements costs would be less than half the additional revenues realized from the DEMO level of operation. (See Summary Table S–4) Although patronage of rail passenger service to Boston-Washington and intermediate points would increase between 1968 and 1975, rail passenger patronage as a whole in the Corridor would decline. The breakdown of the Corridor intercity travel market by modal shares in 1968 and 1975 is shown in the following:

SHARES OF CORRIDOR INTERCITY TRAVEL MARKET BY MODE, PERCENT PASSENGER-MILES—ALTERNATIVE I

Year	Auto	Bus	Rail	Air
1968	68	8	13	11
1975	73	9	9	9

Although alternatives I and II do no more for the ground modes than add demonstration rail, even this minimal action would probably require Federal legislative action of some kind. It is not certain that without such legislation the present Metroliner and Turbo train services inaugurated for two years in response to Federally supported high speed ground transportation demonstrations would continue and, in response to demand, expand through 1975.

TABLE S–1. Nine Passenger Transportation System Alternatives for the Northeast Corridor—Alternative and Modal Composition

I. Auto, Bus Conventional Air (CTOL) Demonstration Rail (DEMO)—Demonstration rail assumes that the present Metroliner and Turbo train services will be expanded and extended through 1975—125 mph.

II. Auto, Bus, CTOL, DEMO; Short Take-Off and Landing Air (STOL)—370 mph.

III. Auto, Bus, CTOL, STOL; High Speed Rail "A" (HSRA)—150 mph.

IV. Auto, Bus, CTOL, STOL; High Speed Rail "C" (HSRC)—200 mph.

V. Auto, Bus, CTOL, STOL; Tracked Air Cushion Vehicle (TACV)—300 mph.

VI. Auto, Bus, CTOL, STOL, DEMO; Vertical Take-Off and Landing Air (VTOL)—265 mph.

VII. Auto, Bus, CTOL, STOL; VTOL & HSRA.

VIII. Auto, Bus, CTOL, STOL; VTOL & HSRC.

IX. Auto, Bus, CTOL, STOL, VTOL & TACV.

TABLE S-2.—RELATIONSHIP BETWEEN TRANSPORTATION SYSTEM ALTERNATIVES AND PUBLIC POLICY OPTIONS

Alternatives	New modes [1]	Policy options: Degree of technological innovation	Orientation to metropolitan area	Capital cost	Service characteristics	Public support required	Institutional change required
I	Demo	None	Center city	Low	Fixed linear	No	Little.
II	Demo and STOL	do	Center city and suburbs.	do	Mixed	No	Do.
III	HSRA	Some	Center city	Medium	Fixed linear	Yes	Large.
IV	HSRC	do	do	High	do	Yes	Do.
V	TACV	Much	do	do	do	Yes	Do.
VI	VTOL	Some	Suburbs	Low	Flexible dispersed	No	Little.
VII	VTOL and HSRA	do	Center city and suburbs.	Medium	Mixed	Yes	Large.
VIII	VTOL and HSRC	do	do	High	do	Yes	Do.
IX	VTOL and TACV	Much	do	do	do	Yes	Do.

[1] Auto, bus, and conventional air are included in all alternatives; STOL is included in alternatives II through IX.

Under alternative I total new public capital expenditures between 1968 and 1975 for intercity passenger transportation in the Northeast Corridor would be $3 billion. Most of this outlay would be for expansion of the existing highway and air modes.[4]

Across the board, alternative I would make only small improvements in the quality of transportation service in the Corridor. Alternative II, as well, would offer only limited improvement in the quality of intercity passenger service in the Northeast Corridor although it would emphasize the provision of STOL service to the periphery of metropolitan areas. Traffic attracted to STOL would tend to reduce the share of CTOL below its share in alternative I. The share of Corridor traffic going to air, auto, rail and bus would change between alternative I and alternative II as follows:

SHARES OF CORRIDOR INTERCITY TRAVEL MARKET BY MODE IN 1975 PERCENT PASSENGER-MILES

Alternatives	CTOL	STOL	Auto	Rail	Bus
I	9	----	73	9	9
II	3	12	68	8	9

Since STOL service in alternative II (as well as in alternatives III through IX) would be commercially viable, new Federal Government expenditures would be required only to provide supplemental air navigation facilities.

Alternatives III, IV, and V

Alternatives III, IV, and V would introduce major improvements in city-center-to-city-center high-speed ground transportation. The high-speed ground mode in alternative II would rely on existing railroad rights-of-way; the high-speed ground modes in alternative IV and V would require completely new rights-of-way. Alternative III would require capital expenditure for all new modes of $1.8 billion; alternative IV, $2.8 billion; and alternative V, $3.5 billion.

HSRA would require only moderate technological advance; HSRC would require substantial R & D expenditure to bring rail operating speeds up to 200 mph; TACV would require an extensive program of R & D to achieve 300 mph operating capability.

Alternatives III, IV, and V would utilize centrally generated electric power and would operate underground in urban areas. Therefore, their effect on land use, noise, and air pollution would be minimal.

The share of total intercity passenger traffic in 1975 which would be captured by the high-speed ground modes is shown in the following:

SHARES OF CORRIDOR INTERCITY TRAVEL MARKET BY HSGT MODE PERCENT PASSENGER-MILES

Alternative II (DEMO)	8
Alternative III (HSRA)	12
Alternative IV (HSRC)	15
Alternative V (TACV)	18

Forecasts for the three new ground modes indicate that they would not be commercially viable in the year 1975, assuming a capital cost of 10 percent, and would probably not be commercially viable for the 10 to 15 years beyond 1975. In the year 1975, largely as a result of interest charges on the initial investment in right-of-way and track, HSRA in alternative III would incur a deficit of $27 million; HSRC in alternative IV, a deficit of $67 million; and TACV in alternative V, a deficit of $103 million. Thus, at least at the outset, the high-speed ground modes would presumably require substantial public support. This could be achieved through subsidy to a private corporation, establishment of an authority, charter of a public corporation, or through outright Federal ownership.

It should be emphasized that the high speed modes, because of their high capital costs, are highly sensitive to the interest rate chosen and passenger demand actually realized. For example, if the cost of capital were lowered to six percent, the ground modes could be commercially viable in 1975; on the other hand, a rise in the cost of capital above ten percent would intensify the magnitude of the potential deficit. Similarly, if the actual demand were in error by 12 to 25 percent, the deficit would disappear or intensify.

Alternative VI

Alternative VI would add VTOL to alternative II. The performance characteristics of VTOL would be responsive to the migration of Corridor population and employment from center city to suburbs. The resulting combination of the existing modes and VTOL would emphasize service to suburban areas. Heliports and flight paths could be located so as to minimize the adverse impact of noise. Where practical, VTOL would be designed to provide service to downtown as well as to the suburbs; however, emphasis in alternative VI would be frequent service to heliports located on the periphery of metropolitan areas.

Revenues from VTOL service would be sufficient to cover research and development and terminal costs. This analysis did not include some additional expenditure, presumably public, which would have to be made on VTOL for the development and implementation of air navigation facilities and air traffic control techniques. Also, although it was not included as a cost of VTOL operation in alternative VI, research and development to reduce aircraft noise appears necessary. In comparison with the total cost of the VTOL mode, these additional costs do not appear to be large.

Since VTOL in alternative VI could be self-sufficient, presumably service would be provided by one or more privately financed, certificated carriers.

The shares of the traffic which would result from alternative VI as compared to alternative II are shown in the following:

SHARES OF CORRIDOR INTERCITY TRAVEL MARKET BY MODE PERCENT PASSENGER-MILES

Alternative	CTOL	STOL	VTOL	Auto	Rail	Bus
VI	2	10	14	60	7	7
II	3	12	----	68	8	9

Alternatives VII, VIII, IX

These three alternatives would combine VTOL with HSRA, HSRC, and TACV respectively. The resulting systems would greatly improve transportation service to the downtown areas of the cities "on line" between Boston and Washington and, like alternative VI, would provide better service to the suburbs of metropolitan regions in the Corridor.

VTOL would continue to be self-sufficient in all three alternatives. Capital cost for the ground modes would be slightly less than in alternatives III, IV, and V. Annual deficits, however, would increase as shown in Summary Table S-4. Thus, public support would have to be provided for construction and operation of the ground modes.

Total transportation service in the Corridor would be increased substantially in its quality and probably in its use. Projected shares of intercity Corridor passenger traffic under alternatives VII, VIII, and IX are shown in the following:

SHARES OF CORRIDOR INTERCITY TRAVEL MARKET BY MODE PERCENT PASSENGER-MILES

Alternative	C/STOL	Auto	Bus	VTOL	HSRA	HSRC	TACV
VII	11	58	7	14	10	----	----
VIII	11	56	7	13	----	13	----
IX	10	55	7	13	----	----	15

Second Order Rail Alternatives

The ground modes in alternatives II and III represent the minimum and probably the maximum improved conditions applicable to the existing Penn Central Railroad route between Washington and Boston. Almost a continuum of possible improvement options exists, however, between these extremes. In order to obtain an indication of the economic feasibility of these improvements, the Corridor model system was applied to nine intermediate levels of improvement between alternatives II and III.

The analysis was conducted by delineating a number of separate projects such as laying welded rail, easing curves, rebuilding bridges, and building new tunnels and bypasses, and determining the costs and running time savings attributable to each project. By using the passenger loadings for each link of the DEMO mode in alternative II, the passenger-minutes saved per dollar of expenditure for each project were calculated and the projects were ranked according to this ratio.

For the analysis, nine levels covering the range of improvements were selected. For each of these levels calculations were made using the NECTP model system to determine additional patronage, gross additional revenues, additional operating costs, annual charges for new investment, and additional net revenues.

The conclusions to be drawn from this analysis are as follows:

1. The maximum benefits to the operator would occur at a level of improvement representing a capital expenditure of $186.5 million (including $78.2 million for vehicles). Annual gross revenues at this level of improvement for 1975 would be $25.9 million more than rail (DEMO) in alternative II, while annual systems costs would be $18.3 million higher than the DEMO costs. The total surplus of additional revenues in 1975 over additional costs annualized for 1975 would be $83 million. This level of improvement results in a 25 percent patronage increase over rail in alternative II.

2. Up to a capital expenditure of $1.3 billion, 1975 annual gross revenues (additional) would exceed annual systems costs (additional). At this investment level, representing a 50 percent increase in patronage over DEMO, annualized additional costs and gross 1975 revenues would be equal.

3. From the level of improvement representing maximum net revenues to the operator to the level of improvements represented by HSRA in alternative III, net revenues would drop. At the upper levels of improvement, costs of capital would become a very significant element of total cost.

Intermodal and Intergovernmental Coordination

Each of the nine transportation system alternatives would require some degree of intergovernmental cooperation for effective planning and implementation. In a broad sense, the efforts represented in this report reflect the need for a coordinated "system" approach to transportation planning. Thus, each alternative should be regarded in a real sense as a system, requiring coordination among the modes if maximum benefits are to be achieved. The degree of coordination needed would vary with the mode in ques-

[4] All the alternatives assume that current plans for highways and CTOL will be implemented.

tion. Both STOL and VTOL would require coordinated action on the part of the Federal agencies involved (presumably the Department of Transportation and the Civil Aeronautics Board) and the private carrier or carriers, and with the local jurisdictions in which STOL ports or heliports would be located. DEMO and HSRA would require extended cooperation between the Penn Central Railroad and the Federal Government for funding and, perhaps, operation of services. HSRC and TACV both require extensive intergovernmental coordination for acquisition of new rights-of-way and for construction and operation.

All systems would benefit from continuous central coordination by the Federal Government or by a regional agency to assure effective and efficient matching of facilities and services of the modes with each other and with demand as a whole.

Following in Tables S–3 and S–4 are summaries of performance and operating characteristics of the nine alternative systems.

TABLE S–3.—SUMMARY OF MAJOR CHARACTERISTICS OF NECTP TRANSPORTATION SYSTEM ALTERNATIVES

Alternatives	New modes	Average speed [1]		Total corridor intercity travel,[2] billion passenger miles
		Sustainable top speed, m.p.h.	Terminal to terminal, m.p.h.	Door to door, m.p.h.
I	DEMO	125	72	46	19.4
II	DEMO	125	72	46	20.3
	STOL [3]	370	141	63	
III	HSRA	150	109	58	21.1
IV	HSRC	200	152	71	21.7
V	TACV	300	198	79	22.3
VI	VTOL	265	147	74	20.3
VII	VTOL	265	151	70	20.8
	HSRA	150	109	57	
VIII	VTOL	265	152	70	21.5
	HSRC	200	157	70	
IX	VTOL	265	144	70	22.1
	TACV	300	205	78	

[1] Statistical averages computed for each mode by dividing total passenger hours into total passenger miles. Note the controlling influence of access-egress time on door-to-door speeds.
[2] Includes auto.
[3] STOL is included in alternatives II through IX.

TABLE S–4.—SUMMARY OF FINANCIAL CHARACTERISTICS OF NECTP TRANSPORTATION SYSTEM ALTERNATIVES

Alternatives	New modes	Total capital cost [1]	Incremental annualized costs [1]	Annual revenues [1]	Annualized surplus or (deficit) in 1975 [1 2]
I	DEMO	$70	$61	$144	$83
II	DEMO	69	60	141	81
	STOL [3]	195	244	244	0
III	HSRA	1,590	240	213	(27)
IV	HSRC	2,600	355	288	(67)
V	TACV	3,340	452	349	(103)
VI	VTOL	1,060	318	318	0
VII	VTOL	$966	$310	$310	$0
	HSRA	1,580	230	175	(55)
VIII	VTOL	971	292	292	0
	HSRC	2,590	340	240	(100)
IX	VTOL	966	291	291	0
	TACV	3,330	440	292	(148)

[1] Dollars multiplied by 10^6.
[2] STOL and VTOL service and fare levels were set to achieve break-even operation at a 10 percent return on investment; HSRA, HSRC and TACV service levels were set to maximize profits (reveuues less costs); DEMO figure represents the difference between incremental revenues and incremental costs to provide DEMO service. It does not reflect any allocation to DEMO service of costs currently borne by the railroad.
[3] STOL is included in alternatives II through IX.

CURRENT APPLICATIONS AND FUTURE DIRECTIONS

The creation and successful application of the Northeast Corridor Transportation Project model system constitute a significant step forward in multi-model transportation investment evaluation. A model structure capable of depicting the interactions of the major elements of a transportation system has now been applied to a set of real-world problems in a highly industrialized region.

In addition to the applications and results presented in this report, the model system already is being used to provide inputs to Department of Transportation policy planning and decision-making in a number of related areas. For example, NEC models have supported work on (1) future utilization of STOL and VTOL aircraft; (2) initial planning for TACV demonstration; (3) identification of HSGT research and development priorities; and (4) the rail passenger network problems. In these applications, the model/simulation system has demonstrated a capability for projecting patronage, as well as demographic effects of major transportation system changes, at levels of detail and precision useful for planners.

A complete description of potential applications of the models and methodology would encompass support to almost all regional freight and passenger transportation policy responsibilities of the Department of Transportation itself. Figures S–2, S–3, and S–4 present specific examples of applications of Project capabilities. These are tabulated by time period to portray (1) current applications; (2) new uses after interim improvements in the model are completed by 1971; and (3) longer term developments and applications for 1972 and beyond.

The "Current" columns of the figures show a wide range of current uses of Corridor work, and emphasize the contribution to planning studies now underway.[5] The following questions taken from the broader more detailed list in the Figures illustrate current project capabilities:

What effect would introduction of high speed rail service have on the economic viability of STOL in the Corridor?

What city-pairs would benefit most from STOL service?

Can the declining rail patronage trend in the NEC be reversed through application of new technology and/or service improvements?

In future developments, Corridor work will be focused on near term efforts to extend the work at hand and strengthen utilization of Corridor models and data base within the Department. Evaluation methodology will be improved to integrate more fully the external costs and benefits over the life-cycle of the systems. The "1971" columns of the Figures show the progression of Corridor work through time, and show how the applications listed quickly lead to increased use of the model system outputs for decision-making. For example, extended work will contribute significantly to resolution of the following questions:

Which modal research and development efforts will have largest potential payoffs for short-haul passenger service?

What are the benefits and costs of improving urban access to intercity transport services?

What mix of CTOL–VTOL–STOL services should Government investment policy encourage?

Under what conditions would TACV be commercially successful in the Northeast Corridor?

In the more distant future, as the work is expanded to include examination of other corridors and other modes using improved techniques, many important decisions facing the Department will be affected by the improved ability to predict the impact of alternative courses of action available. Policy issues which would be addressed with expanded methodology are illustrated by the following questions:

How should investments be phased to balance line-haul improvements with better urban access?

Can application of new rail technology and/or service improvements reverse rail patronage trends in less congested corridors?

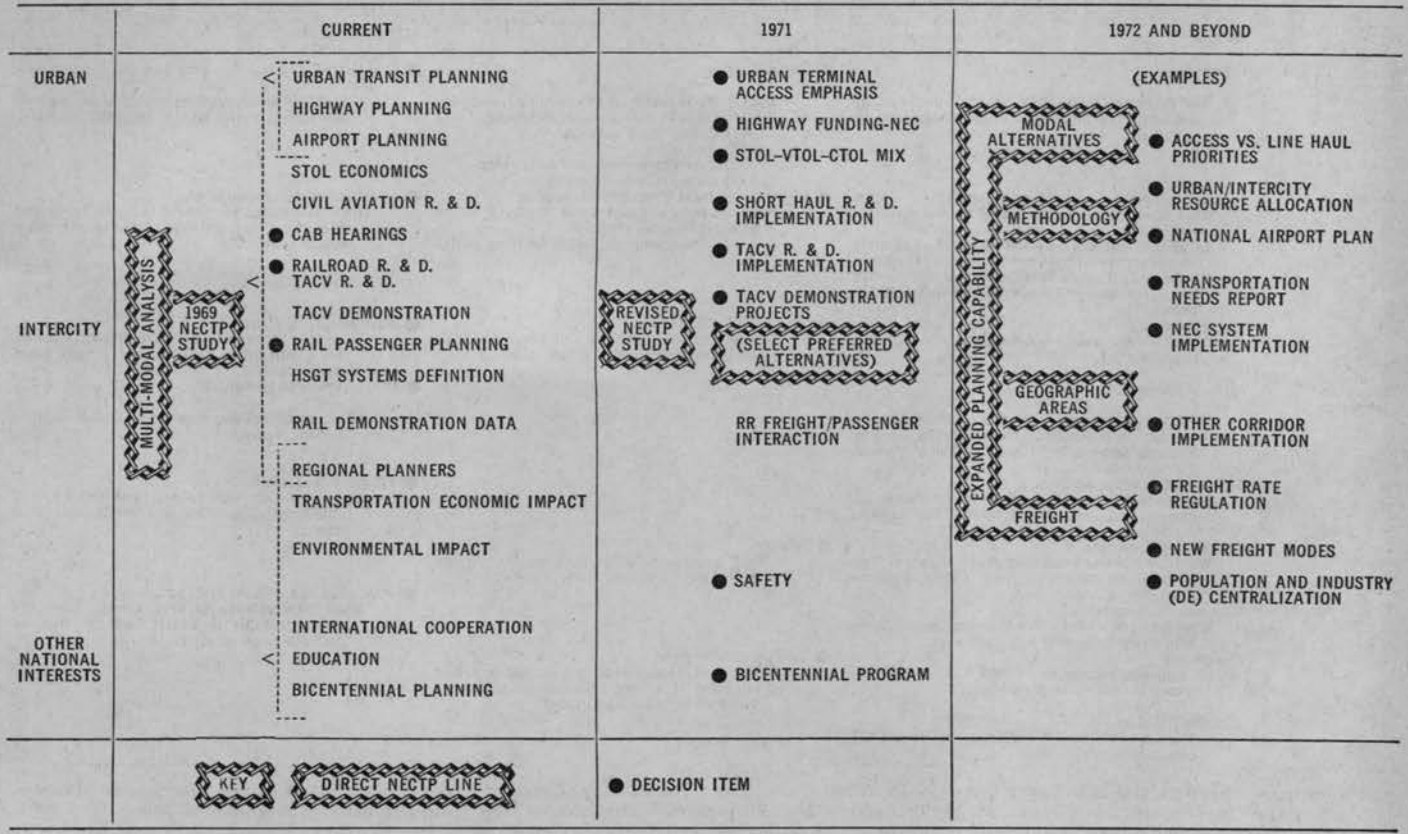
Should new freight modes be developed and implemented?

What impact would changes in passenger and freight transportation facilities have on employment, income, land use and population at local and regional levels?

Examples of additional decisions which could be supported by long-term expansion of capabilities are shown as underlined items in the "1972 and Beyond" columns of the tables.

[5] Black dots and underlining in the Figures highlight decision points; lack of underlining points out general study work; and boxes delineate present and planned project outputs and methodological developments of the Corridor group.

CURRENT APPLICATIONS AND FUTURE DIRECTIONS



MULTIMODAL ANALYSIS APPLICATIONS—INTERCITY

	Current	1971	1972 and beyond
Intercity	Passenger: New technologies: Which new technologies are economically viable? Highway planning: To what extent can intercity highway traffic be diverted to common carriers? Airport planning: Identify CTOL airports in NEC whose air traffic might be reduced by the introduction of alternate modes. STOL economic task force: What effect would the introduction of high-speed rail have on the economic viability of STOL in the NEC? Civil Aviation R. & D.: What would be the benefits from alternative R. & D. expenditures? ● CAB STOL hearings: What city pairs would benefit most from STOL service? ● Railroad R. & D.: What specific areas of R. & D. have most payoffs for railroad passenger investments (speed, frequency, comfort, terminals to ease access)? HSGT R. & D.: What specific areas of R. & D. have most payoffs for passenger investments? TACV demonstration: What kinds of information should the TACV demonstration be designed to produce? ● Rail passenger planning: Can the declining rail patronage trend in the NEC be reversed through application of new technology? HSG system definition: What configurations and operational characteristics should HSG systems have? Rail demo data: What kind of information should be produced and what experiments should be performed?	● HSG—V/STOL: What mixes of transportation are most appropriate for different requirements? ● Highway funding: What would the effect of diversion be on highway requirements? ● CTOL–VTOL–STOL mix: Which mix of these services should Government investment policy encourage? Specifically, location and utilization of such service. ● Short haul R. & D. implementation: What R. & D. expenditures have the largest potential payoffs for passenger service? ● TACV projects: What conditions are required for an economically successful TACV mode in the NEC?	● R. & D. requirements: Which R. & D. tasks have biggest net payoffs? How is intermodal integration best achieved? How is the utilization of surface rights-of-way best designed to serve multiple modes? ● Rail passenger planning: Can the application of new technology and/or service improvements reverse the rail patronage in less congested corridors?
Freight.		Railroad freight/passenger interaction: Is high speed, high frequency passenger service compatible with Penn-Central freight operation?	● R. & D. planning and priorites: What priorities should be assigned to research and development in freight transport? ● Investment planning: Should new modes of freight transport be developed and implemented? ● Commodity rate and allocation decisions: Is rate regulation necessary? If regulation, should there be marginal cost pricing of freight rates? ● Regional impact: What impact would improved freight transport have on employment, income, land-use, and population trends at local and regional levels?

MULTI-MODAL ANALYSIS APPLICATIONS—URBAN AND OTHER NATIONAL INTEREST

	Current	1971	1972 and beyond
Urban	Urban planning: What intercity transportation service is most compatible with the movement of populations to the suburbs? Highway and mass transportation planning: What loads does intercity travel impose on urban systems? To what extent would capital investments in urban transportation systems benefit intercity travelers? To what extent would consideration of door-to-door travel requirements modify urban transportation plans? Airport planning: Can high speed ground modes reduce airport building requirements?	● Urban planning: What is the impact on metropolitan development attributable to intercity transportation? (1) Center city to suburbs (2) New cities (3) Retain green belts and rural areas (4) Outside cities and towns ● Highway and mass transportation funding: What are costs and benefits of improving urban access to intercity services? Are special-use terminal access facilities worthwhile? ● STOL, VTOL, CTOL mix: What mix of STOL or VTOL with conventional air will minimize loading of urban facilities?	● Coordinated phasing of access and line haul investment: How should investments be phased to balance line haul improvements with better urban access? ● Urban/interurban resource allocation: What division of investment between urban and interurban transportation provides maximum overall benefits? ● National airport plan: What set of airports best coordinates intercity needs with urban facilities, and ground mode capabilities?
Other nationa interests.	Regional planners: What transportation networks are compatible with specific regional plans? (New England Regional Planning Commission) (Delaware Valley Regional Planning Commission)? Transportation economic impacts: How does transportation affect the economic and demographic development of northeast corridor subregions? Environmental impact: What are the short and long range effects of transportation in the environment? (Noise, pollution, watershed alteration, etc.) International cooperation: What new and useful information can be exchanged with foreign planners? Education: What new techniques might form a dot textbook on transport multimodal planning? Bicentennial plans: What are the feasible modes for use in the U.S. bicentennial celebration?	● Safety: What are the trade-offs between "costly-safe" modes and "less costly-unsafe" ones? ● Bicentennial program: What mix of modes will comprise a system to best represent U.S. progress, provide service to visitors and retain later utility?	● Other corridor implementation: What investment decisions are applicable to other corridor regions? ● Freight rate regulation: Can revision of freight rates provide better overall utilization of facilities and enhance regional growth? ● Population and industry (DE) centralization: What transportation network configurations enhance desirable regional growth patterns for population and industry?

In summary, through the Northeast Corridor work, the Department has taken a step forward in its attempts to resolve a number of the complex problems involved in allocating transportation resources. The new analytical tools and experience gained from the Corridor work will be one of the major building blocks around which a significantly strengthened Departmental multi-modal analysis and planning capability can be constructed.

Further development and application of the model system and methodology will offer major opportunities to improve transportation investment decision-making and the planning and management of the implementation of those decisions. Considering the magnitude of the resources involved, improvements in decisions growing out of the generation of improved information could well lead to significant savings.

EXCERPTS FROM TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No.: NECTP-209.

* * * * *

4. Title and Subtitle: Northeast Corridor Transportation Project Report; by Robert A. Nelson, Paul W. Shuldiner, Myron Miller, Robert L. Winestone, and others—other members of OHSGT who contributed were Philip J. Barbato, Wilbert E. Cantey, Melvyn Cheslow, Steven R. Ditmeyer, Nancy T. Ebersole, John Gerba, Harold Handerson, Eric H. Hanson, Donald J. Igo, Sung J. Kim, Frank J. Macklin and John C. Nelson.

5. Report Date: April 1970.

6. Performing Organization Code: OHSGT.

8. Performing Organization Report No.: 209.

9. Performing Organization Name and Address: Office of High Speed Ground Transportation, United States Department of Transportation, 400–6th Street SW., Washington, D.C.

12. Sponsoring Agency Name and Address: United States Department of Transportation, 800 Independence Avenue, Washington, D.C. 20591.

13. Type of Report and Period Covered: Status and results of project to date.

* * * * *

16. Abstract: The Northeast Corridor Transportation Project was charged to determine the intercity transportation facility requirements of the Northeast Corridor through 1980. The December 1969 report contains the following:

Executive Summary—Contains conclusions, background to the Corridor transportation problem, and study approach.

Chapter 1—A comparative analysis of the transportation alternatives as to their technical feasibility, economic costs and benefits and other impacts in the year 1975.

Chapter 2—A discussion of the actions required to implement the transportation alternatives.

Chapter 3—An examination of possible financing and management of new modes included in the alternatives.

Technical Appendices—Include advantages and disadvantages of various organizational alternatives, population growth patterns and the Corridor transportation system, methodology, description of the alternative systems, and exploratory studies and sensitivity tests.

The Corridor Report is supplemented by a set of 17 supporting documents which develop in greater detail the analysis and findings.

17. Key Words: Northeast Corridor, transportation planning, system analysis, system alternatives, systems engineering, facility requirements, impact analysis, model simulation, congestion, transport innovation, transportation coordination, regional transportation NECTP, high speed ground transportation, high speed rail, STOL, VTOL, TACV.

As a set, the following listed 17 reports provide detailed information on Northeast Corridor transportation and cover descriptions of the Corridor, its problems and prospects, project methodology, descriptions of alternative systems, and the cost analysis techniques upon which the findings of the main report are based. Included in the document set are:

NECTP* report number	Report titles	Contractor
	DESCRIPTION OF THE NORTHEAST CORRIDOR (NEC): TRANSPORTATION PROBLEMS AND PROSPECTS	
210	NEC Transportation: Problems and Prospects	Peat, Marwick Livingston and Co.
211	Status of the Transportation System and Plans for Improving Intercity Transportation in the NEC.	Do.
212	NEC Transportation Facts and Statistics	Do.
	PROJECT METHODOLOGY	
213	National Bureau of Standards Modeling for the NECTP	NBS.
214	HSGT Mode Service Analysis in NEC	TRW, Inc.
215	Air Mode Service Analysis in NEC	MITRE Corp.
216	TRANSOP Model Methodology	TRW, Inc.
217	Access and Demand Data Used in the Development and Calibration of NEC Transportation Models.	Peat, Marwick Livingston and Co.
218	Impact Studies: NECTP	CONSAD Research Corp.
230	Passenger Demand and Modal Split Models	Arthur Young & Co.
	MODAL DESCRIPTIONS	
219	HSGT Systems Engineering Study, Tracked Air Cushion Vehicles	TRW, Inc.
220	V/STOL Mode Descriptions	MITRE Corp.
	COSTING PROJECTIONS AND TECHNIQUES	
221	Prospective Costs of Capital in the NEC	Lionel D. Edie, Inc.
222	Cost Analyses for NECTP, vol. I, High Speed Ground Modes	Resource Management Corp.
223	Cost Analyses for NECTP, vol. II, Air and Highway Modes	MITRE Corp.
224	External Costs and Benefits Analyses, NECTP	Resource Management Corp.
225	Theory and Implementation of Cost and Benefit Analysis of Transportation Systems: The NECTP.	Resource Management and Mathematica.

*Reference to these reports is made by use of the NECTP number.

NARCOTICS

Mr. FANNIN. Mr. President, the illegal sale and use of narcotics has reached epidmic proportions in America. Drug use is escalating at an alarming rate among our youth. Narcotics are easily obtainable by teenagers and even youngsters in the elementary grades.

On April 25 I was privileged, along with Gov. Jack Williams, Congressman JOHN RHODES, Congressman SAM STEIGER, and Mayor John Driggs, to participate in a program in Phoenix, Ariz., which is unique in its approach to stopping the drug habit before it starts.

The program is called Dope Stop and it is operated almost entirely by high school students who are devoting many hours of their time to working among youngsters from the fifth, sixth, seventh, and eighth grades.

Art Linkletter said of Dope Stop:

Of all the programs to curb narcotics use which I have investigated, Dope Stop looks to me to be the best.

Mr. Linkletter was the main speaker at the Dope Stop Teen Counselors meeting, which was attended by 2,500 youngsters.

The 90-minute program was broadcast live in KPHO–TV of Phoenix. Disc jockey Pat McMahon, of radio station KRIZ emceed the show with backup support from fellow disc jockeys Don Pietro and Phil Motta.

So you see, Mr. President, the community is not only aware of the dangers of the illegal drug traffic on the health and morals of our young people, but it is actively aware of the leading preventive educational roll of Dope Stop.

The idea of Dope Stop is simple. It is natural for grade school youngsters to wish to emulate those older than they are. That is where the Dope Stop teen counselors come into the picture. By setting a good example, the teen counselors alert the younger children to the folly of drug experimentation. Teams of high school students regularly visit the grade schools and talk about dope problems and the consequences. Nearly all the elementary school administrators are cooperating with the program. At first, some were skeptical until the high school students convinced them that they were indeed experts on the narcotics problem.

The idea for Dope Stop was conceived by Mr. John French while he was president of the Maricopa Mental Health Association.

Mr. French coined the name Dope Stop and developed the format. He assumed the directorship of the program upon expiration of his term as president. Mr. French is a Phoenix businessman, but he now devotes nearly 90 percent of his time to this volunteer work.

An outstanding job is also being turned in by Mr. Norman Hovda, who is the teen coordinator of Dope Stop.

Mr. Hovda is a young man 22 years old who has excellent credentials for his job of fighting drug abuse. He has told many times the story of his own experimentation with dangerous drugs during the first 3½ years of his college career. I have just been advised that he will be on the Art Linkletter program within the next couple of weeks.

How he came to kick the habit and his dedication to prevent others from going through the tortures he suffered is an inspiring story.

Mr. President, the Dope Stop program in Phoenix and its neighboring towns, I feel, will do more to halt narcotics abuse than all of the laws and jails in the country.

Other communities across this Nation would do well to look into a program of their own patterned after Dope Stop.

Mr. President, I ask unanimous consent that a related article be printed at this point in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

ART LINKLETTER DEBUNKS TOUGHER DOPE PENALTIES

(By Connie Cobb)

Tougher penalties for pushers won't solve the drug problem, television personality Art Linkletter told about 2,500 teen-agers yesterday at the TraveLodge Convention and Theater Center.

"Who would we arrest?" he asked as he explained a proposal to eliminate drug abuse by identifying and punishing all pushers.

"The pushers are the kids," he said. "They're the ones who say, 'Come on, try a reefer.' They're just like the grownups who say, 'It's 5 o'clock. Have a cocktail.' They're pushers, too, and they're pushing the worst drug of all.

"How about all the television stations, the magazines, the newspapers? We'd have to arrest them. They're pushers. They advertise pills to make you feel better. They push you into trying pills as if they're peanuts you pop into your mouth."

Each drug addict turns on one other person every nine months, he noted, "either through example or by pushing."

Linkletter told the teen-age counselors for Dope Stop of the suicide of his daughter, Diane, 20.

He said she jumped from a window of a six-floor apartment last October as the result of taking LSD.

"It's frightening," he said, "to think that kids are so anxious they'll risk their lives on something they know nothing about."

Taking LSD is like playing Russian roulette, he said: "The odds will catch up with you. You're safe until it kills you . . . How stupid it is to start the downward trail because you think you can handle it."

Linkletter criticized the Woodstock rock festival and rock music that advocates drug use. He received strong applause for his criticism of the festival.

"Something's wrong," he contended, "when the best you can say about 350,000 kids getting together is that there was no violence because they were all stoned out of their minds."

Emphasizing that not all rock groups are bad, he noted that "music is one of the most powerful ways of persuasion there is. So I take my cracks at groups like Jefferson Airplane and Grateful Dead that urge people to turn on.

"Theirs is the kind of music that should be banned from all airways, from all music stores. They do nothing but extol the delights of drugs."

Youths in the audience gave Linkletter a standing ovation and filled the stage to talk to him after his speech.

Later, at a dinner to benefit the Arizona Association for Mental Health and CODAC, Linkletter warned parents to expect their children to be tempted by drugs.

"You can be sure," he told about 1,500 adults in the TraveLodge center, "that your child is going to try drugs or be offered drugs—just as sure as you're sitting here.

"They have only to look around them to see drug use. They see it in their friends and in their parents. Probably every one of you here uses at least one drug. You all either smoke or drink coffee or liquor or take pills. Better living through chemistry is the way our kids have been brought up."

Linkletter asked how many parents would be willing to give up cigarettes, pills and alcohol if their children promised never to use drugs.

But that still might not be enough, he added.

"You can live a life of example," he explained. "You can love and cherish your children, but you cannot live their lives for them or be with them when peer group pressure is exerted.

"The only thing you can do is keep the lines of communication open, let them know you love them and that if they do experiment they can come and talk to you about it."

He urged persons in the audience to learn what drug abuse involves and not to get uptight, overdramatize or turn their children away if they experiment with drugs.

"This is your responsibility," he reminded, "just as much as teaching your child to drive the family car . . . And then you can hope you will never wake up to find that your child is an addict or that he has a needle in his arm."

KENT STATE UNIVERSITY

Mr. PERCY. Mr. President, on April 30 I addressed the Senate on the destruction of university buildings at Stanford University by students. I criticized this destruction and stated that such actions cannot be condoned.

Today I reiterate that statement. Violence by students cannot be condoned but must be dealt with properly under the law but with necessary restraint.

On Monday of this week, innocent students engaging in their constitutional right of assembly were shot to death at Kent State University by National Guard troops. This was a tragic mistake of national significance bringing grief and sorrow to the families involved as well as to all Americans. Never again should American troops fire upon American civilians peacefully assembled endangering no one else's lives by their actions.

We are at an important turning point in our Nation's history. We can continue the path of inflammatory actions and inflammatory statements, or we can seek to pour oil upon our troubled waters and follow the course of reason and restraint. We must seek to avoid further inflammation and avoid further polarizing our Nation.

All Americans must stop their provocations of each other, and must practice toleration.

Let us all realize that we can have deep and differing opinions yet we can still all be citizens of the same Nation that we love and want to preserve. We have listened too long to those who inflame our passions rather than to those who inspire our ideals and counsel the path of moderation.

Kent State should serve as a grim reminder that violence breeds violence and leads to loss of life. It should warn us that

if we continue polarization of this Nation, that more tragedies such as Kent State can occur.

It would be easy to dismiss all campus protest and violence as the work of left-wing fanatics. Too much destruction on college campuses has indeed been the product of radicals causing violence for violence sake. But it would be wrong to let this violence obscure the fact that many of those taking part in campus protests are students deeply troubled by recent events—they are sincere young Americans committed to nonviolent dissent.

We must all of us reappraise our position—agree that student violence must be dealt with properly by the law and also agree that the firing on of students by U.S. troops is also a dreadful mistake. That must never be repeated.

The only way this Nation can survive is to learn toleration and learn to live with one another. Otherwise, nothing but further violence can result.

Congressional and citizen protest can be very effective—if it is peaceful. No administration can fail to be impressed by large meetings being held all over the country, accompanied by public and private appeals by and to large numbers of Senators and Representatives. However, nothing turns off those to whom the protests are directed more than violent and intemperate protests. In fact, the "silent majority" is built on distaste for violence.

GENE MCCARTHY'S campaign prospered in New Hampshire when his student campaigners were "neat and clean for GENE" and worked diligently within the system to win the primary election. Had they burned down a building or called "pigs" at law enforcement officials, Senator MCCARTHY would have been defeated in New Hampshire, Senator Robert Kennedy might not have entered the race, and President Lyndon Johnson might have run for reelection.

I appeal for moderation and tolerance, both on the part of students and of government. To "bring us together" must not just be a slogan. It must be a motto that guides our every action every day.

NASA, MOON ROCKS, AND THE UNIVERSITY OF OREGON

Mr. HATFIELD. Mr. President, on April 24, the Committee on Aeronautical and Space Sciences, on which I have the honor to serve, held what was indeed a remarkable hearing with two of the three Apollo 13 astronauts, Jim Lovell and Jack Swigert, as well as Dr. Thomas Paine, Administrator of NASA, and other NASA officials.

I wish to say again what a superb job the astronauts and all of the people at NASA did in handling what was without question the most serious emergency yet in our manned space flight.

In spite of our admiration for a job well done and our relief over the astronauts safe return, it is important that we constantly scrutinize the costs of these programs and diligently seek to discover what benefits we are getting in return. This is a difficult job because it may be years before any total assessment can be made. Nevertheless, we must continue to try.

Certainly one of the benefits from the space program has to be the inspiration to many of our young people from the cool, efficient manner in which all concerned faced this recent and most serious threat.

The Space Committee held another important hearing on April 6—not as dramatic as the one with the astronauts, but important nevertheless. That hearing was concerned with the benefits that have accrued to the Nation from the space program. While, as I said a moment ago, a total assessment of the worth of the space program may be many years in coming, I think my colleagues will be impressed with the sizable amount of "fallout" or "spinoff" that has already occurred. That hearing will be printed soon and I urge each Senator to study it carefully just as soon as it is available.

I should also like to point out to Senators that there has been a vast amount of scientific data coming out of our Apollo program. The entire issue of Science magazine for January 30, 1970—more than 300 pages—was devoted to the preliminary results from Apollo 11 alone, as presented at the Lunar Science Conference in Houston, Tex. I am proud to say that several scientists from the University of Oregon Center for Volcanology participated in that historic conference.

Two of those scientists, Drs. Gordon Goles and Daniel Weill, were recently interviewed by Stan Bettis, associate editor of Old Oregon magazine. One of the things that comes through most clearly in this interview is the tremendous feeling of excitement that has been generated in these dedicated scientists by the opportunity to work with actual material from the moon.

But what good is this lunar exploration? What difference does it make, for example, that we can now measure the distance from the moon to the earth with an accuracy of 1 foot instead of the previous accuracy of one-quarter mile?

Dr. Goles answers this by saying that we should now be able to measure accurately the amount of continental drift. He says:

Such direct observational confirmation of the theory would give us a great deal of confidence in some other things that the theory suggests about the structure of the Earth. We might, for one thing, gain a better understanding of some of the mechanics behind earthquakes and volcanic activity, and I think anyone would agree that a better understanding of just those two things would be of very direct importance to humanity.

He also goes on to say:

We have to live on this planet. On Earth. It's very unlikely that any appreciable fraction of us will ever get off it. The possibilities of our living well on this planet will be greatest if we have a good understanding of how this planet works internally, as well as externally. That understanding is as yet very limited and very poor. This is true, in part at least, because science is a comparative activity. We learn by comparing one thing with another. And although we've compared one type of rock with another and one continent with another, and so on, they're really only different parts of the same entity: Earth. So in a very fundamental, philosophical sense, we've had only the one thing to look at. We haven't had a variety of different objects to study.

Now, for the first time, we can study *directly* material that has evolved on a different, known planet. And that will be very valuable because that will help us to understand our own planet in very profound ways. I'm sure of that. To the extent that it does, that's one of the best rationales for going to the Moon.

When asked about the costs of the program, it was pointed out that the money spent on TV advertising alone would exceed NASA's expenditures in 1970, and Dr. Weill said:

We would be the laughing stock of the history books a hundred years from now if it were written that we had a chance to explore and explain a bit of outer space, and passed it up to watch television commercials.

He goes on to say:

Too many people seem to think that in order to become concerned about terrestrial environmental problems we have to cut off all other endeavors, including the space programs.

I have little patience with people who can't investigate and work to correct these environmental problems without feeling that what they're doing is somehow incompatible with other endeavors. Environmental problems should get top priority attention. Agreed. No question. But exploration of the Moon doesn't automatically detract from that attention. We certainly have enough talent and enough resources to do both. I think it will turn out in the long run that the two are not unrelated.

But perhaps the most important aspect of our lunar exploration will not, in the end, be the direct information we are getting back, but the change in attitude of people about the earth itself.

Dr. Goles puts it this way:

I would like to suggest that in future years, possibly many decades from now, historians looking back will say that far and away *the most useful result* of the Moon program is not this information we've discussed—a better understanding of our Earth in a direct sense—but rather a change in the psychology of many millions of people who have realized for the first time, in a way that could not be denied, that they were all on one small planet, a planet that's unique in the solar system, and that they depended on it for their lives . . . [The Earth is the] only planet in the solar system, as far as we know, where liquid water is present. The only planet on which we can survive unprotected for any appreciable length of time . . . [The psychological impact is] to make people aware that they're living on a big spaceship, and that it's the only home—be it ever so small—they'll ever have.

Mr. President, I ask unanimous consent that this illuminating interview from the Old Oregon issue of March 1970 be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

MEANING BEYOND THE MOON ROCKS?—TWO UNIVERSITY OF OREGON SCIENTISTS DISCUSS THEIR STUDIES OF ROCK SAMPLES FROM THE MOON, AND OFFER THOUGHT-PROVOKING VIEWS ON WHY WE'RE EXPLORING THE HOSTILE REGIONS BEYOND EARTH'S ATMOSPHERE

Gordon Goles and Daniel Weill, associate professors in the University of Oregon Center for Volcanology, are two of the 142 principal investigators from around the world who are involved in studying rock samples from the Moon. In early January, the two men attended a Lunar Science Conference in Houston, Texas, where they and other researchers reported on their studies of sam-

ples gathered by Apollo 11 astronauts. Shortly after their return to the University, Old Oregon's associate editor, Stan Bettis, interviewed the pair.

BETTIS. Reports of talks delivered at the Houston conference made it clear that several theories of how the Moon was formed are still regarded as possibly correct. But have any of the popular theories been proven wrong as a result of research thus far?

WEILL. No. On the other hand, I think some have been shown to be more likely than others.

BETTIS. Which ones seem most likely at the present time?

WEILL. Well . . . it's actually very difficult to say. Everything is still speculative at this point.

I would say that although the chemistry, the composition of the rocks we're finding on the Moon is different in many respects from what we find on Earth, by and large there are more similarities between the two than there are differences. The Moon isn't composed of something completely exotic as far as we're concerned. To me, this is much more compatible with the theories that suggest the creation of the Moon from a common Earth-Moon system, rather than the capture of the Moon from somewhere else.

GOLES. I slightly favor the idea that the Moon is older than the Earth; that it may perhaps be representative of the objects that fell together to form the Earth, but it was captured by the Earth as a satellite instead. But it's kind of silly for us to speculate on the complete history of the Moon at a time when we're only a few years away from getting better answers. Sooner or later, we must start looking at what our results tell us about that history. But it's much too early—for reasons of incompleteness of data and of interpretation built upon the data—for us to deal with the history in detail.

BETTIS. Could you outline, then, what problems current research is concerned with?

GOLES. Well, basically, there is a hierarchy of problems having to do with the Moon.

First, there are problems having to do with how the Moon interacts with its environment. The environment is, of course, very different from that of Earth, but if you took a poll of all solid matter in the universe, you'd find much more of it like the Moon than the Earth, in terms of interaction with environment. The Earth has a rather special sort of environment. It has an atmosphere and liquid water, and so there are chemical and physical reactions that go on here that don't occur on the Moon. And vice-versa. In a sense, we're looking at an entirely different sort of thing on the Moon, and by so doing we're getting a real contrast to what we look at on Earth.

The second set of problems deal with paragenesis. This is a fancy word for what happens when silicate magmas cool and crystallize. Magma is molten silicate material. When it rises to the surface in volcanic eruptions, it's called lava. In this category of problems we say, OK, let's assume the materials are present at depth as silicate magmas and they are erupted onto the surface—what happens to them, how do they behave, and what forms do they take?

In the third category, we have a set of problems dealing with petrogenesis. This simply means the origin of rocks, but it's been given a more specific meaning whereby we talk about petrogenetic relationships as those which define the composition and nature of rock. In this category we're asking questions such as, how did the magma originate, and where did the parental composition itself come from?

The fourth category deals with the history of the Moon. This is qualitatively different from the other categories. You can attack each of the preceding problems by studying the materials we have now, even with our present, rather primitive, understanding of our data. But you can't even begin to touch the history of the Moon until you have some considerable understanding of each of the others.

BETTIS. Without going into too much detail, could one of you explain the aims and techniques of your research?

WEILL. We're both concerned first with analyzing and describing in detail the nature of the rock samples we've received. We're attempting to determine the composition of the rocks and the abundance of the various elements within the minerals that make up the rocks.

Dr. Goles and his group employ a technique in which a small fraction of the elements in a sample is made radioactive. By examining these radioactivities, he can identify the elements and estimate their amounts quite precisely.

My colleagues and I, on the other hand, utilize an electron microprobe as our main tool. This device aims a small beam of electrons at the sample—by small I mean on the order of a millionth of a meter in diameter. The electron beam excites X-radiation from the sample. By measuring the kind and quantity of X-radiation, we're able to say how much of any given element is concentrated in the small portion of the sample we zapped with the beam.

In essence, what we're both getting is a quantitative chemical analysis, without doing any test tube chemistry.

GOLES. As geochemists, an important part of our job is to go beyond the numbers we're getting, and come up with interpretations of the numbers; explain what they may mean.

BETTIS. In line with that, Dr. Goles, I understand that the research carried out by you and your colleagues has offered some insights into the likelihood of our finding water on the Moon?

GOLES. Yes, in a speculative way. The amounts of rare earth elements in the samples, and of zirconium and hafnium, suggest that the Moon has always been dry, quite dry. If that's true, then there's no use looking for any permafrost layers near the surface of the Moon that could provide a source of water. And if we're not going to find any permafrost layers, then this poses some real problems when it comes to building a permanent base on the Moon.

BETTIS. Dr. Weill, your research team has come up with data bearing on the question of the sinuous rills, the depressions on the surface of the Moon that look very much like the beds of meandering streams. I believe some scientists have suggested that the rills might actually have been formed by flowing water. In view of Dr. Goles' findings. . . .

WEILL. The sinuous rills were extremely difficult to explain unless you accepted the idea of flowing water existing on the Moon.

Our thoughts on an alternate explanation of the rills go back to some theoretical calculations we did, which suggest that the lunar lavas were about 10 times more fluid than terrestrial lavas at the same temperature. We know that on Earth, lavas can flow out over many square miles, even over relatively flat terrain. The Columbia River lavas in Eastern Oregon are an example of this. Extremely fluid lavas on the Moon could easily have flowed out even more extensively, in spite of the reduced pull of gravity. The possibility of a single lava flow spreading out on the Moon and, in fact, spreading out over most of one of the *maria* basins—the lunar "seas"—is quite real.

Now, it follows that if these extremely fluid lavas behaved like some of the lavas on Earth, rapid cooling would have formed top and bottom crusts, with fluid lava flowing between them. On Earth, this process causes the development of lava tubes—there are many examples of these in Eastern Oregon. The lava eventually flows out, leaving a tube between the upper and lower crusts.

On the Moon, these tubes might be wider than on Earth, and almost certainly longer. When the thin upper crust is broken through by meteor impact or moon quake or some other mechanism, what you might have revealed is a topographic feature that would look very much like the sinuous rills.

BETTIS. You've both been speaking as if it's a foregone conclusion that the Moon lavas you're studying were formed from molten materials erupted from within the Moon. I thought there was still some question as to whether or not the lavas actually came from the interior of the Moon.

COLES. Yes, we've been talking as if it were well-established. To be quite honest, what is well-established is that many of the rocks we've studied from Apollo 11 are indeed igneous rocks—that is, they're made of material that was once molten. However, it's not known for sure whether the magmas themselves—the silicate melts—were made inside the Moon as a result of internal heating——

BETTIS. As on Earth, you mean?

GOLES. Exactly, as on Earth. Or whether they were made when large objects—meteoroids—impacted on Moon's surface, heating the existing rock so strongly that melting occurred, causing lava to flow.

BETTIS. You would end up with the same characteristics in the present rocks regardless of the method by which they were heated?

GOLES. Yes, at least as far as the second of our problems—paragenesis—goes. Once you make a magma, by whatever process, and it starts to cool down, you have, in effect, mostly removed its memory of what it once was. I think there are ways of testing these two hypotheses. We're working now on ways of doing this.

BETTIS. Are there any indications that the Moon, like the Earth, is hot internally?

WEILL. Well, of course, the lavas themselves suggest internal heat. Then, too, some observers on Earth have detected infrared radiation—heat radiation—in certain craters on the Moon. This suggests that there may still be active sources of heat on the Moon.

Also, the samples collected at Tranquillity Base seem to contain fairly high concentrations of some of the naturally radioactive, and therefore heat-producing, elements like potassium, thorium, and uranium. If these elements were distributed homogeneously throughout the Moon, then the Moon may very well have been quite hot internally.

During Apollo 13, the astronauts will drill a 10-foot-deep hole and measure the heat flux coming out to the surface. This will help out a great deal on the question of internal heat.

GOLES. Right now, I'd say it's very unlikely that the second hypothesis—impact-generated lavas—is going to be right, but maybe we're all jumping on the bandwagon a little too fast. There's a tendency once you see these things, and are convinced they are lavas, to say, well, they're made in the same way terrestrial lavas are made. This is very dangerous, because the Moon is a different place, and these are very old rocks, older than any rocks we know of on the surface of the Earth. They were made at a time when there was a lot more junk floating around in the solar system than there is now, and large objects certainly impacted on the Moon.

BETTS. A good deal of attention has been given to the great age of the lunar rocks. What is it, they're supposed to be 4.5 billion years old?

GOLES. Well, no, that's a very tricky point. Understand, first, that neither Dr. Weill nor I are involved in dating the samples. All I can tell you is what we learned at the Houston conference.

The only thing we know for sure is that the igneous rocks were formed approximately 3.6 billion years ago. There are fairly straightforward, dependable methods of dating igneous rocks of the sort we've had to look at. But dating the mixture of dust and fine material that constitutes the lunar soil is a tougher proposition. There's a certain amount of theoretical guesswork involved.

The average age of the lunar soil appears to be 4.5 or 4.6 billion years. You could fudge things around, however, in such a way that you could argue that the oldest components in the soil are no older than 4.2 or 4.3 billion years. On the other hand, there are other interpretations that suggest that some of the soil is older than the 4.5–4.6 billion year figure.

BETTIS. The possibility exists, then, that the Moon may be older than the Earth, which is—what?—about 4.5 billion years old?

GOLES. I believe 4.55 billion is the accepted figure now, but remember that this figure is theoretical—it is not a result of direct dating of terrestrial samples. Anyway, yes, it's possible that the Moon is older than the Earth. In fact, in some ways that's the easiest and most straightforward way of interpreting the numbers. But nature plays tricks, you know. The age of the Moon is still very much an open question.

BETTIS. What you've been discussing so far all sounds quite theoretical. I hate to introduce the word, but what about "practicality"? Many people are asking what difference all this information about the Moon really makes. Is the Moon program, in fact, simply another case of science counting and cataloging things, adding knowledge that is of little value other than as knowledge? What difference does it make, for instance, that we can now measure the distance to the Moon with an accuracy of one foot rather than the previous accuracy of a quarter-mile, thanks to the emplacement of a laser beam reflector on the Moon?

GOLES. It makes a great deal of difference! It has been suggested that the continents on Earth are drifting apart—or together, depending on where you're standing. In particular. it has been suggested that the distance between Europe and North America is increasing about two or three centimeter per year—a little over an inch a year, maybe.

As you pointed out, we can now measure the distance from any point on the Earth to a given point on the Moon with an accuracy of about one foot. If we measure the distance to the Moon from other points in both Europe and North America, and then repeat those measurements in 10 years, we'll know for sure whether or not the continents are drifting apart. Such direct observational confirmation of the theory would give us a great deal of confidence in some other things that the theory suggests about the structure of the Earth. We might, for one thing, gain a better understanding of some of the mechanics behind earthquakes and volcanic activity, and I think anyone would agree that a better understanding of just those two things would be of very direct importance to humanity.

BETTIS. What about in a general sense? What is the value of the knowledge we're gaining from the Moon?

GOLES. Let me work my way into that question from left field.

We have to live on this planet. On Earth. It's very unlikely that any appreciable fraction of us will ever get off it. The possibilities of our living well on this planet will be greatest if we have a good understanding of how this planet works internally, as well as externally. That understanding is as yet very limited and very poor. This is true, in part at least, because science is a comparative activity. We learn by comparing one thing with another. And although we've compared one type of rock with another and one continent with another, and so, they're really only different parts of the same entity: Earth. So, in a very fundamental, philosophical sense, we've had only the one thing to look at. We haven't had a variety of different objects to study.

Now, for the first time, we can study directly material that has evolved on a different, known planet. And that will be very valuable because that will help us to understand our own planet in very profound ways. I'm sure of that. To the extent that it does, that's one of the best rationales for going to the Moon.

I don't think we're ever going to find diamond mines up there, or new sources of power, or titanium ores—we're never going to find anything up there that's worth the expense of bringing back, except the information that some people consider so valueless. And that is indeed worth the expense of bringing back, to the extent that it helps us to live better, and more wisely, and with less disruption of our natural environment.

WEILL. I think it's very dangerous in science, or anything else for that matter, to try to predict which pieces of information are going to turn out to be useful. Anybody who looks at the history of science realizes right away that its impossible to predict which inventions, which discoveries, which pieces of data are going to be the important ones. The thing to do is to keep pursuing knowledge with intellectual honesty, and try to come up with some answers. History will sort out which things are significant.

I think that what's behind such a question—What is the value of the Moon program?—is concern about the cost of the program.

BETTIS. Well, it is a fairly costly program, isn't it?

WEILL. Maybe. But consider that the average annual budget of NASA, which finances the whole space exploration program, has been between three and five billion dollars a year over the past several years. When you compare that within the 70 or 80 billion dollars that's sunk into defense every year—much of it into the Viet Nam disaster—it doesn't look all that big.

Whenever I'm asked about the cost by a TV reporter—and they almost always ask that question—I always answer with another question: What was the total advertising budget for television last year? They never answer that question for me, but if they did——

BETTIS. I think it's projected that national television advertising sales and programming costs will total about four billion dollars in 1970.

WEILL. Really? Well, I'd like to ask which is a waste of money—the Moon program or television advertising and programming?

There is another approach to the question of the value of the space exploration program—perhaps a more philosophical and valid one than a mere discussion of budgets and priorities. All animals are concerned with feeding themselves and reproducing. Man is the only animal who spends most of his time at superfluous tasks. Great works of art, as well as all attempts to explain things around us are superfluous. But where would civilization be, and how desirable would it be to belong to the human species, without such superfluous activities?

Studying electrical phenomena a few years back was no less superfluous than the space program is today. Yet there are few social reformers today who don't take electric power for granted in their schemes. We would be the laughing stock of the history books a hundred years from now if it were written that we had a chance to explore and explain a bit of outer space, and passed it up to watch television commercials.

You know, one of the really unfortunate aspects of our approach as a nation to things in general and to things scientific in particular is that we do things by fads. Ten years ago or so, it became the big fad to push all out to put a man on the Moon. Now, during the past year, we've seen the beginning of a new fad. The public has suddenly become aware of our environmental situation. That's good, very good. But what's bad—and its typical of our faddish approach to things—is that too many people seem to think that in order to become concerned about terrestrial environmental problems we have to cut off all other endeavors, including the space program.

I have little patience with people who can't investigate and work to correct these environmental problems without feeling that what they're doing is somehow incompatible with other endeavors. Environmental problems should get top priority attention. Agreed. No question. But exploration of the Moon doesn't automatically detract from that attention. We certainly have enough talent and enough resources to do both. I think it will turn out in the long run that the two are not unrelated.

BETTIS. You mean there is—or will be—some sort of direct relationship between the Moon exploration program and efforts to correct our environmental problems?

GOLES. I'd like to answer that if I may. I would like to suggest—this suggestion was also made by Fred Hoyle at the Houston banquet, but I'd been turning it over in my mind before that, so I'll lay claim to it independently—I would like to suggest that it is no accident that many people are suddenly becoming very interested in problems related to the environment and ecology at just precisely this time.

Ecologists and biologists and geochemists have been screaming their bloody heads off for decades about what we're doing to our environment and nobody gave a damn. Nobody even listened. And I know, because I've been one of those screaming. And it makes me feel sometimes as if I'm talking to the wall.

Now, all of a sudden, in the same year when there is televised to millions of people a view of our planet from outside—from far enough outside that you can see, and you can feel it in the pit of your stomach, that here is one entity, one closed system on which we all must live—in that same year, we get this sudden concern.

I do not think these two things have occurred in the same time span by accident.

In fact, I would like to suggest that in future years, possibly many decades from now, historians looking back will say that far and away the most useful result of the Moon program is not this information we've discussed—a better understanding of our Earth in a direct sense—but rather a change in the psychology of many millions of people who have realized for the first time, in a way that could not be denied, that they were all on one small planet, a planet that's unique in the solar system, and that they depended on it for their lives.

Think about the image that the television showed us. Right there in your living room, you were looking out across the surface of the Moon—a horribly bleak environment. It takes the finest technology for man to survive there for even 10 seconds. It's a terribly hostile environment. I don't think any of us who have not helped to design the space suits worn by the astronauts can even begin to realize how hostile that environment is.

So you look across that desolate landscape and out through the even more hostile environment of interplanetary space, and out there is the blue-green Earth, wreathed in clouds. The only planet in the solar system, as far as we know, where liquid water is present. The only planet on which we can survive unprotected for any appreciable length of time.

That view—and remember, it's been seen by hundreds of millions of people around the

world—I think that view has had a psychological impact that will be very hard to assess until decades later we see whether or not it has done what I hope it's done. Namely, to make people aware that they're living on a big spaceship, and that it's the only home—be it ever so small—they'll ever have.

If it has done that, and I think it may have, then without question that will be the most important result of this whole business. And, without any question, it will have been worth it.

SENATOR BROOKE APPLAUDS ADMINISTRATION ACTION ON EAST-WEST TRADE

Mr. BROOKE. Mr. President, I was very much pleased to note that on Wednesday of last week, the Department of Commerce initiated actions to improve East-West trade relations. More specifically, the Department decontrolled 222 commodities which were formerly on a restricted list for shipment to the Soviet and other Communist-bloc countries.

I believe this is a significant move toward fulfilling Congress' expectations when it passed the new Export Administration Act late last year. This act embodies congressional sentiment that the United States should foster trade with Communist countries where our national security or foreign policy interests are not jeopardized.

During Senate hearings on this subject, it was pointed out by a number of American companies that Western Europe was able to trade with Russia and other Communist-bloc countries, whereas American companies were prevented from doing so because of restrictive export control policies. In many instances, American companies negotiated transactions; however, they were not able to fulfill their commitments because of delays in obtaining export licenses through the American Government. Because of these delays foreign companies were outselling American companies abroad.

As a result of these developments, Congress turned away from the restrictive policies contained in the Export Control Act of 1949 and enacted a new, liberalized trade act: the Export Administration Act.

I have been informed that the Commerce Department will be taking further steps to carry out the will of Congress, and I look forward to these developments. It is this kind of constructive leadership which can give substance to the President's quest for an era of productive negotiations and fruitful exchange between East and West.

NEW TASKS FOR THE UNITED NATIONS

Mr. PERCY. Mr. President, on March 4, 1970, before the Subcommittee on International Organizations and Movements of the House of Representatives Committee on Foreign Affairs, Richard N. Gardner, of Columbia University, testified on new tasks the United Nations should undertake as it enters its second quarter century.

Professor Gardner, who has long played an important role in developing programs of international cooperation, is a former Deputy Assistant Secretary of State for International Organization Affairs. I commend excerpts of his testimony to the attention of Senators and I ask unanimous consent that they be printed in the RECORD.

There being no objection, the excerpts were ordered to be printed in the RECORD, as follows:

EXCERPTS FROM THE STATEMENT OF RICHARD N. GARDNER, HENRY L. MOSES PROFESSOR OF LAW AND INTERNATIONAL ORGANIZATION, COLUMBIA UNIVERSITY

Your invitation to testify on "New Tasks for the United Nations" is gratifying and challenging. I believe that in its second quarter century the U.N. should devote increasing attention to a cluster of interrelated problems and opportunities that it hardly noticed for most of its first 25 years. These are areas which the accelerating advances of science and technology have made vitally important and where cooperative action through the U.N. can serve the interests of all men regardless of national, ideological, or racial differences. I have selected four of these areas today—the environment, population, outer space, and natural resources (with particular attention to the seabed). There are others that could be mentioned, of course, but these are four of the "new tasks" which were a particular preoccupation of mine during my service as Deputy Assistant Secretary of State for International Organization Affairs from 1961 to 1965 and which continue to engage my attention now that I have returned to private life.

Before I get to this subject, however, permit me to sound one note of caution. In our preoccupation with these glamorous "new tasks," let us not forget the U.N.'s "old tasks"—those absolutely fundamental responsibilities given the U.N. in its Charter—the promotion of peace, economic development, and human rights. It is on these questions that the U.N.'s performance will be judged by the people of the world—and rightly so. "Involving the U.N. in new tasks," I fear, is for some people a euphemism or an excuse for downgrading its role as a peacekeeping agency.

THE ENVIRONMENT

Our new concern with the environment has focussed so far on domestic problems. We have largely negelected the international dimension. But now we are finally beginning systematic look at our global environment in a new U.N. committee preparing for a world conference in Stockholm in 1972.

A U.N. response to the environmental challenge is long overdue. While some measures to deal with the environment can be taken by individual nations alone, there are resources that do not belong entirely to any nation—the sea, certain lakes and rivers, migratory animals—whose effective management requires international cooperation. Even management of the environment within the confines of a single nation may benefit from the sharing of national experience.

Moreover, we are finally beginning to recognize that how a nation deals with its national environment is no longer its own and nobody else's business. We are beginning to comprehend the unity of the world's ecological system, which means that all nations may be affected by how any one of them treats its air, water and land.

We are gradually awakening to the realization that all mankind depends on the same scarce and relatively shrinking resource pool, and therefore has an interest in the wise husbanding of resources wherever they may be located. And business firms around the world are beginning to argue that they cannot accept the additional costs of anti-pollution measures unless their overseas competitors do the same.

For all these reasons, the international community will be increasingly involved in environmental issues—even those that have hitherto been regarded as "domestic." Indeed, the most powerful impetus to world order may no longer be the threat of nuclear war, but rather the urgent necessity of new trans-national measures to protect the global environment.

The global environment concerns all nations, regardless of national, ideological, or racial differences. Some work on the environment can be usefully undertaken in regional agencies like OECD, but a universal problem needs a universal system of organizations to deal with it. The U.N. system, including its regional commissions and Specialized Agencies, is the nearest thing to a universal system we have. The Stockholm Conference provides an additional reason to make it more universal by admitting mainland China and divided states. At the very least, the U.N. should invite the Peking regime, the two Germanies, the two Viet Nams, and the two Koreas to participate in the Stockholm meeting.

The U.N. system, of course, is already involved in environmental programs. Important work has been done in the International Maritime Consultative Organization, for example, on oil pollution in the seas. UNESCO, the World Health Organization, the Food and Agriculture Organization, the International Atomic Energy Agency, and the Intergovernmental Oceanographic Commission, to give only a few examples, have all had a piece of the environmental "action."

What more can the U.N. system do about environmental problems?

To begin with, it could undertake a massive program to educate the world's people, particularly political leaders, on the problems of the environment; could sponsor joint research efforts and studies; and could finance the training of specialists to handle different environmental problems.

It could organize a world-wide observation network, using observation satellites and other new technology, to monitor the world's environment on a continuing basis, and it could operate a service for the evaluation and dissemination of this information for all nations.

It could encourage the negotiation of international agreements providing for firm anti-pollution and other environmental commitments so that nations and industries accepting their environmental responsibilities suffer no competitive disadvantage in international trade.

It could insure that multilateral aid programs are carried forward with due regard for their environmental implications, and could encourage the application of environmental safeguards in bilateral aid. (Downstream erosion from the Aswan Dam, we now discover, may wash away as much productive farm land as is opened by the new irrigation systems around Lake Nasser.)

Finally, it could establish a U.N. Program for the World Heritage, including scenic, historic and natural resources now in danger of destruction whose survival is a matter of concern to all mankind.

Obviously, each nation should be free to decide whether or not to nominate a property within its territory for inclusion in the Program. At the same time, the community of nations should be free to decide whether or not to accept it.

Countries whose resources were included in the Program would gain the advantage of international advice and financial aid in their development with consequent benefits to their economies as a whole. And the world community would be in a position to safeguard unique and irreplaceable resources—Venice, Angkor Vat, some of the great wildlife reserves of Africa—in which all mankind has a common interest.

If the U.N. is to act effectively on environmental problems, a central group of distinguished scientists should be established

under the Economic and Social Council to evaluate and coordinate the work of the different U.N. agencies active in this area. The historic pattern of functional specialization contains the danger that ecological interrelationships may not be adequately considered. For example, FAO may vote, as it recently did, to continue use of DDT; but this question needs to be looked at by a group whose thinking is not mainly centered on agricultural productivity. An "overview" committee of experts could take a broader view in evaluating the implications for the environment of new as well as existing scientific discoveries.

POPULATION

We have all heard a great deal during the last few years about the world population problem. Instead of repeating it, let me just state in one paragraph what I take to be the essential point:

Present rates of population growth in most developing countries of the world—and some developed countries as well—will, if continued, destroy all our hopes for meaningful increases in individual living standards. Worse still, world population trends are dangerously overloading the natural environment, threatening political stability, and breeding tensions that increasingly erupt into violence. The rate of world population growth is now so great—its consequences are so grave—that this may be the last generation that has the opportunity to limit population growth on the basis of free choice. If we do not make voluntary family planning possible in this generation, we will make compulsory family planning inevitable in future generations.

For the first 17 years of its existence the U.N. did nothing about the population problem except for statistical and demographic activity. It was only in December 1962 that the General Assembly, at the initiative of the Swedish government, passed its first resolution on the subject. In a speech approved by President Kennedy, I told the Assembly on that occasion that the United States favored U.N. action to deal with the population problem and that we were prepared to "help other countries, upon request, to find potential sources of information and assistance on ways and means of dealing with population problems." It is a measure of how backward we were on population in those days that this statement was regarded as revolutionary.

Since 1962, both the United States and the United Nations have come a long way. We have begun a major effort to make family planning services available at home and we have made increasing funds for family planning available in our foreign aid program. The General Assembly, the Economic and Social Council, the Economic Commission for Asia and the Far East, the United Nations Children's Fund, the World Health Organization and UNESCO have all established legislative mandates for action by their executive leadership. The World Bank under Robert McNamara has also moved swiftly into the population field.

The Secretary-General has established a Trust Fund for Population under the U.N. Development Program which is available to support the population activities of the U.N. and the Specialized Agencies. The Administrator of that Program has appointed a senior official to be in charge of the Fund. The U.N.'s own Population Division has been strengthened. The U.N. has sent missions to India, Pakistan, Colombia and various parts of Africa, and has recruited Population Program officers who are now in the field in Asia, Africa, and Latin America.

All this represents progress, and our country played a leading role in it. Yet the ratio of talk to action on population remains distressingly high. The world still lacks a wholly satisfactory, economical contraceptive well adapted to the needs of the developing countries. Few developing countries yet have effective nation-wide family planning programs. Only a small fraction of the U.N.'s funds are yet earmarked for population programs.

In May 1969 a citizens' panel of the United Nations Association chaired by John D. Rockefeller 3rd, on which I had the privilege of serving, issued a report entitled "World Population—A Challenge to the United Nations and Its System of Agencies." Its most important recommendations were as follows:

1. The present Trust Fund for Population should be increased to at least $100 million in voluntary contributions per year (an increase of more than ten-fold over present levels).

2. A Commissioner for Population should be established to administer the Fund, implement population projects financed from the Fund, and represent the U.N. in dealings with governments and in intergovernmental forums concerned with population.

3. The Commissioner for Population should be prepared to sponsor or support projects extending across the whole spectrum of population and family planning programs, such as the training of medical and paramedical personnel; family planning components of health facilities; the use of mass-communication techniques; the manufacture of contraceptive materials; the establishment of special population study centers as well as ongoing statistical census and demographic work.

4. The Commissioner for Population should devote substantial resources from the Population Trust Fund to the support of research into better methods of fertility control, into the operation of family planning programs and into the relationship between population policy and development policy. (I believe the World Bank should also be encouraged to devote substantial sums to this purpose.)

OUTER SPACE

The case for using the United Nations system as a framework for space cooperation is a powerful one.

It is in the interest of all countries, whatever their ideology, that space and celestial bodies should not be subjected to competing national claims, that cooperative experiments be undertaken and information exchanged, that world-wide weather services be developed and that communications among nations be improved. U.N. meetings have served to emphasize this common interest to Soviet scientists and technical experts and, through them, to the Soviet Government. While the United Nations and its Specialized Agencies are not the only institutions to promote cooperation, they do help to put cooperation between the United States and the Soviet Union into a broader framework that recognizes the interests of other countries. And, since the success of the U.N. programs is enhanced by U.S.-Soviet cooperation, the interest of other countries in such cooperation that is manifested in U.N. meetings has helped to stimulate affirmative Soviet actions.

For the United States, cooperative efforts are an absolute necessity if certain space activities are to be successful. In weather and communications, for example, the technology of the United States can yield maximum dividends to its own people and to others only if many nations join in allocating radio frequencies, in tracking and communicating with space vehicles, and in placing necessary ground installations on their territories. For certain activities, bilateral arrangements are most suitable; for others, cooperative projects may be easier to achieve if they are multilateral and bear United Nations endorsement.

These are some of the considerations that led the United States to propose a comprehensive program of space cooperation under U.N. auspices in 1961. The result of this initiative was the Space Treaty, the Treaty on Rescue and Return of Astronauts, the World Weather Watch, and certain modest U.N. activities of technical assistance, and information exchange in the space field.

With the brilliantly successful landing of our astronauts on the moon in July of last year, the race to the moon ended. It is too late to convert this race into a cooperative venture in space exploration on behalf of all mankind. But it is not too late to try a new approach in the next phase of space exploration.

A first step in this direction could be the creation of a United Nations Space Institute. The Institute, which might be located in Geneva or Vienna, would be a center for the cooperative planning of space exploration in which all U.N. members could be invited to take part.

Scientists from the United States and the Soviet Union and other countries could work together on such subjects as the medical problems of manned space flight. They could recommend a set of common priorities for mankind in space and a specific timetable of space missions.

Instead of both the United States and the Soviet Union undertaking landing on Mars and Venus, for example, each could divide responsibility for instrumented landings on different planets. Such activities would be considered part of a total U.N. program and every opportunity would be found to let other countries participate in their preparation and in the sharing of the information.

We could also establish a United Nations Space Station, a true joint venture of mankind in what most authorities now agree is the most important space task of the next decade.

Joint ventures in space between ourselves and the Russians have hitherto been regarded as impractical. It has been said that the presence of Soviet astronauts and Soviet scientists at American launching sites would give them access to our rocket technology and thus prejudice our national security—and vice versa.

But technology now offers a way around this problem. Both we and the Soviets have developed the art of rendezvous and docking in space. We and they could launch elements of a space station that could be assembled in outer space. The equipment could be agreed on in advance to assure compatibility. The astronauts—drawn not only from the United States and the Soviet Union but from other U.N. members—could be trained together at the U.N. Space Institute.

A U.N. Space Station could be an orbiting astronomical laboratory, gathering information about our solar system and the universe beyond. It could also be used for practical earth applications—for weather forecasting, observing ice and snow accumulations, mapping ocean currents, monitoring the environment, and locating mineral deposits. One day it might help patrol troubled borders and verify arms control agreements.

Such a cooperative space program could serve the enlightened self-interest of all. The sharing of the costs of space exploration and the adopting of a space timetable geared to scientific cooperation rather than political competition could save billions of dollars the U.S. and the Soviet Union could devote to pressing domestic needs.

The non-space powers, including the less developed countries, could participate more fully in space exploration. Every country would have access to information gained from space activities—for example, the discovery of mineral deposits made possible by observation from a space station. Finally—and by no means least important—significant political benefits could be realized in close U.S.-Soviet cooperation and a stronger United Nations.

The other aspects of space cooperation that should be mentioned here is cooperation in the use of new technology in space commu-

nications. In the 1970s, the International Telecommunication Satellite Consortium (Intelsat) will be further developing its global network of space communications, making use of huge Intelsat satellites with 5,000 voice channels, enough for 12 TV broadcasts.

As this committee knows, the present technology makes use of *point-to-point satellites*, in which messages are sent from one ground station through the satellite to another station on the ground. But the 1970s will usher in the use of *broadcast satellites*, which can transmit radio or TV to thousands of community or village receivers simultaneously and eventually into home radio or TV sets over an area of a million square miles.

The difference between broadcast satellites and point-to-point satellites is both economic and political. Because they bypass the need for expensive ground relay systems, broadcast satellites may be cheaper and more effective than alternative means of communication for reaching large areas, particularly in less developed countries like India, Pakistan, Indonesia and Brazil.

Broadcast satellites also raise the possibility of broadcasting to the citizens of a country without the consent and perhaps even over the opposition of its government. The prospect of bypassing national broadcasting networks has alarmed some people. In the corridors of the United Nations, one delegate from a less developed country has remarked: "The heads of foreign states will soon be able to address my people, but our own president will not be able to do so. What is the U.N. going to do to help us?"

Of course, it can be argued that space broadcasting is merely an extension of the broadcasting on shortwave now carried on by such agencies as the Voice of America, the British Broadcasting Corporation, and Radio Moscow. It is, however, a significant extension. Unlike shortwave broadcasting, radio programs broadcast from space will be indistinguishable, so far as quality of reception is concerned, from radio programs broadcast locally. And television programs sent from space will have a substantially greater psychological impact than shortwave radio broadcasts.

The heart of the political problem can be summed up thus: Countries with no immediate prospect of carrying on space broadcasting fear that the United States, the Soviet Union or possibly a joint European satellite authority may use this technology to send their people political or commercial messages that the governments do not like. Unless it is possible to allay the fears of such countries about uncontrolled communication with their populations and give them at interest in the use of this technology for their own benefit, the enormous potential of broadcast satellites may never be realized.

Extensive hearings were held on satellite broadcasting last May before the Foreign Affairs Subcommittee on National Security Policy and Scientific Developments. Without wishing to repeat here my testimony before that Subcommittee, let me simply repeat two of the main points:

The first point is that we should greatly accelerate our efforts to make satellite broadcasting available to the less developed countries to help speed their efforts at national integration and economic development. A network of community TV receivers in India, for example, could be an enormous aid in the eradication of illiteracy, the introduction of new agriculture techniques, and the encouragement of family planning. In adapting the new technology to the needs of the developing countries maximum use should be made of the research, technical assistance, and financial resources of the U.N. system. This will mean new roles and responsibilities for agencies like UNESCO, the UNDP, the International Telecommunication Union, and the World Bank.

The second point is that Intelsat should grant the U.N.'s modest request submitted to the Intelsat Conference last year for free use of its facilities to handle the U.N.'s internal communication needs and to carry radio and TV programs produced at the U.N. The U.N. needs could be met with one percent of the channel capacity available on the Intelsat IV satellites that will soon be available. This would be a good "public relations" investment for Intelsat and would have no adverse effect on the profitability of the system.

The U.N.'s request to meet its internal communication needs is extremely modest—two telephone links from New York to Geneva, one telephone line each with its five major regional centers, and one link each with its peacekeeping operations in Cyprus, the Middle East and Kashmir.

Free use of satellites would help meet the U.N.'s urgent need for better communications to manage its world-wide operations. During the Middle East crisis of June, 1967 the U.N. was seriously handicapped by its inadequate communications arrangements—the Secretary-General and his staff did not know what was going on in the area until many hours later. The U.N. will never be an adequate peacekeeping agency until it has better communications facilities at its disposal.

Looking beyond the specific questions of free use of Intelsat facilities, there are many things that could be done to use satellite communication as an instrument for the building of a better world order. The U.N.'s Radio and Visual Services Department, now budgeted at the totally inadequate figure of $2 million, could greatly expand its work. The General Assembly could adopt a resolution:

1. Providing for an annual "State of the World" TV and radio address by the Secretary-General which U.N. members would be asked to carry on their TV and radio networks, and

2. Urging U.N. members to devote at least one hour a week of prime TV time (or radio time where TV does not exist) to programs produced at U.N. headquarters.

Many U.N. members provide no radio or TV reporting to their populations on U.N. activities. Many allow their people to hear only those parts of U.N. debates that represent their national point of view. One hour a week of U.N.-produced programs, including highlights of debates, could be a useful corrective. It would surely be a great step toward peace if the people of Egypt and Israel, for example, could have even a few minutes exposure per week to another view of the Middle East problem.

We should have no illusions that those U.N. members with tightly closed national societies would immediately implement such a resolution. But a resolution of this kind might well mobilize international and domestic opinion upon them to implement it after a number of years. At the very least, it would reveal very clearly which countries are really prepared to take practical steps toward international understanding and a more effective United Nations—and which are not prepared to do so.

The United States should take the lead in demonstrating the possibilities of promoting international understanding through communication satellites. We should give the Soviet leaders the opportunity to talk directly to the American people at regular intervals on TV in return for the same privilege for our leaders in the Soviet Union.

NATURAL RESOURCES—THE SEABED

The discovery and wise development of natural resources is a key element in efforts to raise living standards in the less developed areas of the world. The United Nations system has already done much valuable work in this field. Recently, for example, U.N. experts executing a project for the UNDP found uranium in Somalia, and the government of Somalia is already making arrangements with foreign industry for the extraction of this rich resource on a mutually beneficial basis.

Yet the potentiality of the U.N. in the field of natural resources is even greater than has been realized so far. Much more could be done through the U.N. system to help the developing countries discover new resources, train resource technicians and managers, and integrate national resource planning with manpower development programs, capital requirements, and national and regional planning generally.

A few million dollars in U.N. activity can yield to resource discoveries worth tens of millions in revenues to the governments of the less developed countries as well as our own government.

Moreover, the potentiality for self-financing of the U.N.'s work in the resource field has not been sufficiently recognized. Why should not the U.N. receive a "finder's fee" when it discovers resources in a developing country? The funds paid by the developing country out of the new revenues resulting from the resource find could finance U.N. resource surveys in other developing countries.

Let me focus, however, on the major resource issue before the U.N. today—the resources of the seabed.

There are two key questions for the seabed, as we all recognize: First, what should be the width of the continental shelf in which a coastal state has exclusive mineral rights? Second, what kind of regime should apply to areas beyond the jurisdiction of coastal states? The failure of the United States Government to develop clear answers to these two questions has, I fear, contributed to an unfortunate polarization of views.

At one extreme, there are some U.N. members who want national jurisdiction in the seabed narrowly limited and who want the U.N. itself to carry on exploitation in the seabed beyond national jurisdiction, with most of the profits from this activity going to the less developed countries.

At the other extreme, there are some segments of our petroleum industry who want to extend national jurisdiction out to the seaward edge of the continental rise, and who oppose any kind of international regime over a part of the seabed which contains valuable resources.

The first view is clearly unrealistic. There is little in the experience of the U.N. that suggests that it could effectively discharge this kind of operating responsibility. The know how and the technology for exploitation of the seabed is in the hands of private companies and governments, mainly our own. If the riches of the seabed are ever to get above water, adequate incentives and security of investment will have to be given those who have the ability to do the job.

The second view is no less shortsighted. The United States has only 10% of the world's geological continental shelf. As the world's principal resource consumer, we should not be seeking a solution that puts 90% of the continental shelf of the world (and a similar portion of the seabed up to the continental rise) under the exclusive jurisdiction of other countries. It is by no means clear, as some spokesmen for the petroleum industry assume, that individual coastal states will be easier to deal with than an international authority.

The United States, as the country furtherest advanced in seabed technology, is in a strong position to negotiate an international regime acceptable to it as well as other nations. A U.N. agency could be established to license operations by private companies, public corporations or governments, in return for an appropriate royalty. The royalties could be channeled for world development through

the World Bank and its soft-loan affiliate, the International Development Association.

The U.N. agency could be established with voting arrangements assuring an appropriate voice for all the different interests involved—the United States and other leaders in seabed technology, developed countries, less developed countries, coastal and non-coastal states and so on. The amount of the royalty could be fixed at a level that would provide adequate incentives for seabed production and a generous amount of new financial resources for the developing countries.

Such an international regime would be far superior in terms of our enlightened self-interest to the scramble for resources inherent in the extension of national jurisdiction to the seaward edge of the continental rise. An international regime, for one thing, would provide safeguards against wildcatting and a system for the orderly registering of claims and settling disputes. Most important of all, it would provide for international anti-pollution and conservation measures in a vast area of the seas that might otherwise be subject to unregulated or inadequately regulated national and private activity.

If an international regime can be worked out along these lines—and with U.S. leadership I believe it can—we could then accept a relatively narrow boundary for the continental shelf under national jurisdiction. To be specific, the limits of national jurisdiction could be set at 200 meters or a lateral distance of 50 miles from the shoreline, whichever is greater.

It is obvious that the width of the boundary is inseparably bound up with the nature of the international regime. What is less obvious, but also true as a matter of practical politics, is that these questions are linked to the questions of the breadth of territorial waters and fishery rights. For example, certain Latin American countries are less well endowed with seabed resources off their coasts but are concerned with rich off-coast fishery resources and are not likely to make agreements in the one area without satisfaction in the other. To put it more broadly, these and other states will want to trade off acceptance of the relatively narrow territorial sea boundary we are seeking in return for some special recognition of their fishery interests beyond and some reasonable sharing of the benefits of seabed resource development.

For these reasons, I come to the reluctant conclusion that there will have to be one international conference to deal with all these complex law of the sea questions, rather than the separate conference on the territorial sea and fisheries that our government has been seeking. The trade-offs are now too well and widely recognized to compartmentalize these questions.

President Nixon put the matter clearly in his Report to the Congress on Foreign Policy:

"In addition, as man's uses of the oceans grow, international law must keep pace. The most pressing issue regarding the law of the sea is the need to achieve agreement on the breadth of the territorial sea, to head off the threat of escalating national claims over the ocean. We also believe it important to make parallel progress toward establishing an internationally agreed boundary between the continental shelf and the deep seabeds and on a regime for exploitation of deep seabed resources."

I very much hope that this statement will soon be translated into official U.S. willingness to participate in a single conference and, equally important, into a U.S. negotiating position on the questions of continental shelf boundary and international regime along the general lines suggested above.

IMPLICATIONS FOR U.S. POLICY

I have tried to sketch some of the "new tasks" that could make the United Nations a much more significant force in world affairs than it has been in the past. Yet, to be completely honest, I must add that the U.N. presently suffers from serious weaknesses that restrict its capacity to undertake these tasks effectively.

One problem is that the U.N. Secretariat does not have a sufficient number of highly qualified experts to support expanded cooperation in areas like the environment, population, space, and natural resources. Another is that the U.N. is not yet organized effectively to deal with these subjects.

To cope with the organizational problem, we need to press for reforms along the lines of the "capacity study" of Sir Robert Jackson in order to achieve a more unified effort by the UNDP, the Department of Economic and Social Affairs, the semi-autonomous bodies and the Specialized Agencies. We also need to draw together the interrelated technological areas presently parceled out among different sections of the Secretariat.

These points have a number of implications for U.S. policy. In recent years the United States has fought hard against increases in the U.N. budget, and has gone so far as to join in joint representations on this subject with the Soviet Union. Due to this attitude on the budget, our delegates are in the anomalous position of saying that we favor U.N. initiatives in environment, population, outer space and other areas—provided they don't cost money. Obviously, as long as this financial attitude persists, the U.N. will not be able to attract the top-flight talent it needs, upgrade its central Secretariat, and respond as it should to the new challenges confronting it. Moreover, and this is a point frequently overlooked in Washington, the United States will be in a poor position to press for needed reforms in the U.N.—for strengthening the central U.N. machinery in relation to the agencies and for more reasonable methods of taking decisions—if it is disengaging itself from its financial responsibilities and narrowly circumscribing the conditions of its participation.

Candor compels me to note that the Congress bears some responsibility for the difficult position in which our U.N. delegation presently finds itself. Congress has cut the U.S. contributions to the U.N. Development Program to the point where the U.S. can no longer put up its traditional 40% of the total. Congress has required that $2.5 million of our assessed share of the regular budgets of U.N. agencies must be paid in non-convertible foreign currencies—a requirement inconsistent with the U.N. financial regulations.

Our total contributions to the U.N. system in 1969, including the Specialized Agencies and voluntary programs, amounts to about $250 million—less than the cost of the New York City Fire Department, less than one week's cost of the Viet Nam war. How can we talk of having the U.N. perform bold "new tasks" if we are determined to limit our effort to this amount?

The "Nixon doctrine" in foreign policy states a commendable objective—that we should do less by ourselves and more in partnership with others.

I hope we will give concrete manifestation to both of these propositions, not only to the first of them.

STATEMENTS BY JERRY RUBIN AT KENT STATE UNIVERSITY

Mr. THURMOND. Mr. President, the recent events at Kent State University have been well publicized in the press and on the news media. I believe that everyone is deeply disturbed, not only by the deaths which resulted there, but also by the deep sense of rebellion and violence which preceded the tragedy. There is much talk about alienation among our Nation's youth, but little discussion of what incites alienation. Here we are discussing what is essentially a psychological state, a decision by the emotions to reject the values of society. This rejection is caused not by events or by the action of our older generation, but by a poisoning of the mood of our youth by constant neurotic attacks on their emotions.

It is not any one individual who can be made responsible in a specific situation, but rather it is the constant barrage by such attacks that have their evil effect. For example, the burning of the Bank of America at Isla Vista was preceded by a harangue given by William Kunstler, the attorney for the seven rioters who were convicted of crossing State lines to incite the riot at the Chicago Democratic Convention. Mr. Kunstler himself was in contempt of court at the time he was making the speech.

In the Kent State situation, I learned last night that the days of rioting there were preceded, only the week before, by a harangue by Jerry Rubin. This is the same Jerry Rubin who was convicted in Chicago in Judge Julius Hoffman's court in crossing State lines to incite a riot. I am interested in this conviction and the activities of those convicted because I had the honor of introducing the antiriot amendment on the Senate floor.

Last night on the program of Fulton Lewis on Mutual network, Mr. Lewis played tape recordings from Rubin's speech at Kent State University. Mr. Lewis has performed an outstanding service in presenting material which has apparently been ignored by all on the other media. I believe that it is of great importance in understanding the mood of students, not only at Kent State, but at universities throughout the Nation where Rubin and his colleagues are inciting our young people.

Let me quote just one example which Mr. Lewis cited in Rubin's speech at Kent State University.

Mr. LEWIS. Jerry Rubin, of course, is the head of an organization called Yippies, the Youth International Party. What is its program for revolution in America?

RUBIN. The first part of the Yippie program, you know, is kill your parents. And I mean that quite seriously because until you're prepared to kill your parents you're not really prepared to change the country because our parents are our first oppressors.

Mr. President, this is but a single example of the kind of incitement which is appearing on our campuses in increasing tempo. It is because of such incitement that students are going further and further toward violence and rebellion. The question might well be asked whether Rubin is again guilty of crossing State lines. Mr. Lewis' tape recording of Rubin's speech also reveals another statement.

We have all got to become riot inciters. A riot is a Party. A riot is four or more people having fun that's what a riot is. There's gonna be riots everywhere.

Within a few days, after this statement, Kent State University was plunged into turmoil and tragedy. I do not say that Rubin is totally responsible for the

situation at Kent State, but it is clear that his presence on the campus was to incite rebellion.

Mr. President, I ask unanimous consent that the excerpts from the broadcast of Fulton Lewis on Tuesday, May 5, 1970, be printed in the RECORD.

There being no objection, the excerpts were ordered to be printed in the RECORD, as follows:

Good evening, ladies and gentlemen, this is Fulton Lewis speaking from the Mutual Studios in Washington, D.C. I'll have my commentary for you in just a moment.

The most vocal protests against President Nixon's Cambodian move have come from the campuses of the nation . . . as you might expect. At Kent State University in Ohio, yesterday, four students were killed in a clash between anti-war protestors and Ohio National Guardsmen. More campus violence at American University here in the Nation's Capital today, at the University of Maryland in nearby College Park, at the University of Virginia in Charlottesville, at Rutgers University in New Jersey, at Washington University in St. Louis, to mention just a few. And today hundreds of colleges and universities have closed down completely as part of a national student strike called by leaders of the vigorously anti-war National Students Association in protest to the Administration's broadening of U.S. involvement in Southeast Asia.

There is some confusion about what actually did take place at Kent State. Some eye witnesses contend the four students were killed when National Guardsmen, for no apparent reason, opened fire on a crowd of demonstrators and bystanders. Others say the servicemen were trapped by violent protestors who were hurling rocks and pieces of concrete and that the guardsmen simply fired back out of self defense.

The tragedy there, and it was a tragedy, did come after several days of student violence. President Nixon, while expressing his sorrow over the death of the four Kent State students, today said the incident should stand as a warning against the consequences of violent dissent.

It may just be by coincidence but Kent State University, less than two weeks ago, was the host to visiting lecturer Jerry Rubin, who has been touring the nation's campuses since he was freed from jail by a Court of Appeals ruling in connection with the Chicago "7" conspiracy trial convictions. Rubin, of course, had been found guilty by the jury in Chicago of having incited riots during the 1968 Democrat National Convention.

I have a tape of his speech at Kent State and although the quality isn't very good you may be interested in the approach which this young militant takes when he speaks to student audiences.

How did Rubin get freed from prison?

RUBIN. "You know how we were freed, the seven of us. We were locked up, we turned on the radio and we heard what was going on around the country: 20,000 people marching in Boston; fires being started in Ann Arbor; the Bank of America being burned in Santa Barbara (applause). There were a thousand riots in this country when we were in jail—a thousand riots. And if they had kept us in jail there would have been a thousand more riots and if they had continued keeping us in jail there would have been two thousand more riots. That's why we were freed. We were freed because young people went into the streets to free us because they knew that they were in jail if we were in jail."

Is Jerry Rubin openly suggesting that students get out into the streets and riot?

RUBIN. "We've all got to become riot inciters. A riot is a party. A riot is four or more people having fun—that's what a riot is. There's gonna be riots everywhere."

Isn't that kind of conduct criminal? Is that what Rubin wants students to be?

Rubin: "Disrupting the court system is 'right on.' We have to disrupt every institution and break every law. We've all got to become criminals."

In his speech, Jerry Rubin gave the Kent State students his views of America as the "oppressed" society:

Rubin: "The most oppressed people in this country are not the blacks. The most oppressed people in this country are not the poor. The most oppressed people in this country are the white middle class. They're the most oppressed because they have nothing to fight for. They have nothing to live for. They can't become heroes. They want to become bureaucrats. The only time we can become heroes is when we overthrow the government. That's the only time we can become heroes."

Jerry Rubin, of course, is the head of an organization called "Yippies," the Youth International Party. What is its program for revolution in America?

Rubin: "The first part of the Yippie program, you know, is kill your parents. And I mean that quite seriously because until you're prepared to kill your parents you're not really prepared to change the country because our parents are our first oppressors."

Was the relationship between Jerry Rubin and the student riots, the tragic student riots, at Kent State University just a casual affair or is there some direct connection between his appearance on campus and the riots there of the past few days? I just don't know. All I know is that his utterances completely disgust me and I hope that disgust is shared by every other American citizen, young or old.

PRISONERS OF WAR—A VITAL CONCERN TO ALL

Mr. BROOKE. Mr. President, in all of the concern over American policy in Southeast Asia, let me remind Senators of a grave concern that all Americans must keep foremost in their consciousness—the concern for the 1,400 men who are being held prisoner by the North Vietnamese.

We must never allow these men to feel that they are helpless pawns in a larger game. As a Nation and as individuals, we must keep constantly before us their plight and their needs.

Prisoners of war can survive brutality, bad food, bad living conditions, and the flood of enemy propaganda that pours over them. The one thing they find most difficult to overcome is the feeling of uncertainty and the feeling that nobody cares. This alone can sap their morale and turn an extremely difficult experience into a living hell.

We cannot let that happen to those Americans who have served their Nation in battle and now serve us still as prisoners of the enemy. We must do all in our capability to insure that these men know we Americans care, and that we do not sit idly by while they suffer whatever abuse—physical and mental—the enemy can heap upon them.

The great problem we must overcome is the lack of communication, the fact that most of these men have not heard from their families and their families have not heard from them. We simply do not know the fate of 80 percent of these men. We know they are missing. We assume many of them are prisoners, but we do not know for sure.

It is this lack of knowledge, this uncertainty, that has caused many of the wives and mothers of these prisoners to attempt, on their own, to find out what has happened to their men. These ladies have traveled to Europe and to Asia in a vain attempt to discover the truth. At every point they have been treated with callous indifference by the Communist leaders whom they have met.

The Communists have attempted to use their concern for propaganda purposes. They have attempted to induce the women to take an active antiwar role with the implied promise that only through this can they learn the fate of their men.

These American women have shown the same fortitude and calm courage as that displayed by their husbands during these trying months and years.

They deserve our support as people and as a Nation. Our Government is doing what it can to determine the fate of these prisoners. It must do more. It must make every effort, use every means at its disposal to bring an end to this agony of uncertainty that so grimly besets both the men and their families.

VENICE TRIBUTE

Mr. PERCY. Mr. President, I should like to commend the city of Venice, Ill., for having taken the national lead in adopting an appropriate tribute to its war dead.

More than a year ago, the City Council of Venice passed an ordinance directing that the American flag be flown at half-staff for its fallen servicemen. Venice was the first municipality to pass such a law, and I am happy to report that Venice's example has been followed by many cities across the country. Amvets organizations in many areas deserve much of the credit for bringing the idea to the attention of their local governments.

President Nixon heads a list of prominent public officials who have commended the city of Venice for its patriotic efforts. Recently the national Amvets commander, Robert B. Gomulinski, presented the mayor of Venice, Dr. John E. Lee, with the National Amvets Award, recognizing the city's position of leadership.

Venice, Ill., is a modest-sized city, with a population of only 5,000, but it has forged a national reputation for itself by creating the Venice Tribute for its fallen fighting men. I am proud to represent this fine city.

A CONSTRUCTIVE ALTERNATIVE

Mr. HATFIELD. Mr. President, I invite attention to a telegram that was sent to more than 500 student-body editors and student leaders across the country. Students as well as the general citizenry have reacted very strongly to President Nixon's announcement that our troops had entered Cambodia and that North Vietnam was being bombed once again.

The telegram is an effort to help curb violence and promote constructive alternatives to merely protesting.

I ask unanimous consent that the communication be printed in the RECORD.

There being no objection, the telegram was ordered to be printed in the RECORD, as follows:

U.S. SENATE,
COMMITTEE ON INTERIOR AND
INSULAR AFFAIRS,
Washington, D.C.

DEAR FRIENDS: We share the sense of outrage which you and other Americans feel over the war in Southeast Asia. The recent invasion of Cambodia and the resumption of bombing of North Vietnam are only the latest in a long series of actions that mean more anguish and destruction on all sides.

We also share your sense of frustration in seeking to halt this endless war and senseless policy. We believe it is time Congress played the role assigned it by the Constitution in determining our involvement in military adventures abroad. This leadership role is admittedly overdue.

This absence of leadership has had tragic results. We are shocked and grieved by the tragedy that occurred at Kent State on May 4, 1970. We share a sense of guilt because of the lack of alternatives provided by the Congress of the United States thus far. We hope our present effort will provide a meaningful alternative.

We urge you to direct your efforts to supporting Congressional action to cut off further funds for Southeast Asia except for the purpose of withdrawing troops, the exchange of prisoners, and asylum for Vietnamese who might feel threatened by our withdrawal.

This will come to a vote, probably within 30 days, when there will be an official roll call on this amendment requiring every Senator to go on record for or against continued funding of the war. Similar efforts are underway in the House of Representatives.

Will you do all in your power to generate public support for a victorious roll call to end the war? Your letters, phone calls, petitions and personal visits to your Senators and Congressmen are urgently needed now and during the next three or four crucial weeks.

Above all, please make it known that acts of violence will be manipulated to the detriment of our cause, and will sabotage this initiative for peace.

Sincerely,
Senator MARK O. HATFIELD,
Senator GEORGE MCGOVERN,
Senator CHARLES E. GOODELL,
Senator HAROLD E. HUGHES,
Senator ALAN CRANSTON.

SENATOR RANDOLPH STRESSES DANGERS OF U.S. ACTION IN CAMBODIA

Mr. RANDOLPH. Mr. President, in the interest of our country and world peace, I hope future events and results of the President's orders approving the military venture into Cambodia will prove me wrong. It is my view, however, that the sending of U.S. troops into Cambodia presents a real danger of our active involvement in a confict expanded beyond Vietnam into an Indochina war with severe human and economic consequences.

There are many different aspects to the very critical situation in Southeast Asia. But the basic question is whether the entry of American forces into Cambodia to clear sanctuaries will enhance our ability to scale down the conflict in Vietnam and effect our disengagement. I do not believe that it will.

Nor, do I believe that the current military action will hasten the Vietnamization program or materially enhance the security of American Forces during the period of withdrawals.

Even if we were to assume that there would not be further adverse international or domestic repercussions—and I pray there will not be—and assuming that our troops will be out of Cambodia on the timetable promised by the President—and I believe the President will withdraw the troops from there as he has outlined—I fear that the main results of the Cambodian action will in actuality be many more lost lives and casualties, and destruction of indigenous property. While there may be destruction in Cambodia of some enemy resources on the short term, we must remember that our foe is patient and persevering and is well supplied by the Communist world—and will continue to be. We seem not to have learned the concept of guerrilla warfare in which our foe engages, including the fluidity of his logistical and tactical movements.

Furthermore, taking into account the grave international implications and the rumbling reactions at home and abroad, I believe that the risks of the negative in our Cambodian entry outweigh the gains which are the objectives to which the President committed our forces to the surprise of the Congress and the country as a whole.

What are these risks? The Cambodian action could eliminate a negotiated settlement of the Vietnam war through the Paris peace talks, but we hope this will not happen.

It could lead to substantially higher levels of conflict on all fronts in Vietnam and elsewhere in Indochina. And it could stimulate increased aid from Russia and Communist China to Vietnamese and Cambodian Communists, but we hope this will not occur.

It could adversely affect the prospects for substantive progress in the arms limitation negotiations with Russia. We hope not, however.

At home, the escalation of the war into a third country could precipitate—and to me this is not an exaggeration—a constitutional crisis. There has been furious debate over the powers of the Congress to declare war and the scope of the foreign relations responsibility of the President. And yet the Chief Executive did not consult the Congress before ordering the Cambodian thrust. I genuinely regret the failure to do this.

In the face of strong opposition from many segments of our society to increased military activity in Cambodia and in view of the tense situation at home, the United States is engaged in battle in another Indochinese country besides Vietnam. This aggravates the potentially explosive atmosphere which exists on our college campuses and renews the critical division of the people of our Nation.

Moreover, there is mounting evidence of the close relationship between the widening of the war and the deterioration of our economy, a deterioration which is adversely affecting all citizens—rich and poor, young and old.

I respect the office of the Presidency and the present occupant for that office. I fully recognize the tremendous burden the President carries. He has made a difficult decision. But as an individual Senator also charged with a responsibility, I must give expression to the grave reservations I have with respect to the ordering of U.S. forces into Cambodia.

NASA AUTHORIZATIONS, 1971

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Senate proceed to the consideration of Calendar No. 839, H.R. 16516.

The ACTING PRESIDENT pro tempore (Mr. METCALF). The bill will be stated by title.

The LEGISLATIVE CLERK. A bill (H.R. 16516) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

There being no objection, the Senate proceeded to consider the bill, which had been reported from the Committee on Aeronautical and Space Sciences, with an amendment to strike out all after the enacting clause and insert:

That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration:

(a) For "Research and development," for the following programs:

(1) Apollo, $956,500,000;
(2) Space flight operations, $515,200,000;
(3) Advanced missions, $2,500,000;
(4) Physics and astronomy, $116,000,000;
(5) Lunar and planetary exploration, $144,900,000;
(6) Bioscience, $12,900,000;
(7) Space applications, $167,000,000;
(8) Launch vehicle procurement, $124,900,000;
(9) Space vehicle systems, $30,000,000;
(10) Electronics systems, $22,400,000;
(11) Human factor systems, $17,900,000;
(12) Basic research, $17,600,000;
(13) Space power and electric propulsion systems, $30,900,000;
(14) Nuclear rockets, $38,000,000;
(15) Chemical propulsion, $20,300,000;
(16) Aeronautical vehicles, $87,100,000;
(17) Tracking and data acquisition, $298,000,000;
(18) Technology utilization, $4,000,000;

(b) For "Construction of facilities," including land acquisitions, as follows:

(1) Ames Research Center, Moffett Field, California, $1,525,000;
(2) Jet Propulsion Laboratory, Pasadena, California, $1,950,000;
(3) John F. Kennedy Space Center, NASA, Kennedy Space Center, Florida, $575,000;
(4) Manned Spacecraft Center, Houston, Texas, $900,000;
(5) Marshall Space Flight Center, Huntsville, Alabama, $525,000;
(6) Nuclear Rocket Development Station, Nevada, $3,500,000;
(7) Various locations, $18,575,000;
(8) Facility planning and design not otherwise provided for, $5,000,000.

(c) For "Research and program management," $677,300,000, of which not to exceed $500,108,000 shall be available for personnel and related costs.

(d) Appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required for the performance of research and development con-

tracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used for construction of any major facility, the estimated cost of which, including collateral equipment, exceeds $250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed $35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) No part of the funds appropriated pursuant to subsection 1(c) for maintenance, repairs, alterations, and minor construction shall be used for the construction of any new facility the estimated cost of which, including collateral equipment, exceeds $100,000.

(h) No part of the funds appropriated pursuant to subsection (a) of this section may be used for grants to any nonprofit institution of higher learning unless the Administrator or his designee determines at the time of the grant that recruiting personnel of any of the Armed Forces of the United States are not being barred from the premises or property of such institution except that this subsection shall not apply if the Administrator or his designee determines that the grant is a continuation or renewal of a previous grant to such institution which is likely to make a significant contribution to the areonautical and space activities of the United States. The Secretary of Defense shall furnish to the Administrator or his designee within sixty days after the date of enactment of this Act and each January 30 and June 30 thereafter the names of any nonprofit institutions of higher learning which the Secretary of Defense determines on the date of each such report are barring such recruiting personnel from premise or property of any such institution.

(i) No funds appropriated pursuant to this section in excess of $500,000 shall be used for the payment of services, per diem, travel, and other expenses of experts and consultants.

SEC. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1), (2), (3), (4), (5), (6), and (7) of subsection 1(b) may, in the discretion of the Administrator of the National Aeronautics and Space Administration, be varied upward 5 per centum to meet unusual cost variations, but the total cost of all work authorized under such paragrapns shall not exceed the total of the amounts specified in such paragraphs.

SEC. 3. Not to exceed one-half of 1 per centum of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with $10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (8) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering development, and (2) he determines that deferral of such action until the enactment of the next authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate or, install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Astronautics of the House of Representatives and to the Committee on Aeronautical and Space Sciences of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof, including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 4. (a) Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astronautics or the Senate Committee on Aeronautical and Space Sciences.

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by sections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each of such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

(b) Nothing in this section shall be construed to authorize the expenditure of amounts for personnel and related costs pursuant to section 1(c) to exceed amounts authorized for such costs.

SEC. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

SEC. 6. (a) If an institution of higher education determines, after affording notice and opportunity for hearing to an individual attending, or employed by, such institution, that such individual has been convicted by any court of record of any crime which was committed after the date of enactment of this Act and which involved the use of (or assistance to others in the use of) force, disruption, or the seizure of property under control of any institution of higher education to prevent officials or students in such institution from engaging in their duties or pursuing their studies, and that such crime was of a serious nature and contributed to a substantial disruption of the administration of the institution with respect to which such crime was committed, then the institution which such individual attends, or is employed by, shall deny for a period of two years any further payment to, or for the direct benefit of, such individual under any of the programs authorized by the National Aeronautics and Space Act of 1958, the funds for which are authorized pursuant to this Act. If an institution denies an individual assistance under the authority of the preceding sentence of this subsection, then any institution which such individual subsequently attends shall deny for the remainder of the two-year period any further payment to, or for the direct benefit of, such individual under any of the programs authorized by the National Aeronautics and Space Act of 1958, the funds for which are authorized pursuant to this Act.

(b) If an institution of higher education determines, after affording notice and opportunity for hearing to an individual attending, or employed by, such institution, that such individual has willfully refused to obey a lawful regulation or order of such institution after the date of enactment of this Act, and that such refusal was of a serious nature and contributed to a substantial disruption of the administration of such institution, then such institution shall deny, for a period of two years, any further payment to, or for the direct benefit of, such individual under any of the programs authorized by the National Aeronautics and Space Act of 1958, the funds for which are authorized pursuant to this Act.

(c)(1) Nothing in this Act shall be construed to prohibit any institution of higher education from refusing to award, continue, or extend any financial assistance under any such Act to any individual because of any misconduct which in its judgment bears adversely on his fitness for such assistance.

(2) Nothing in this section shall be construed as limiting or prejudicing the rights and prerogatives of any institution of higher education to institute and carry out an independent disciplinary proceeding pursuant to existing authority, practice, and law.

(3) Nothing in this section shall be construed to limit the freedom of any student to verbal expression of individual views or opinions.

SEC. 7. Section 6 of the NASA Authorization Act, 1970 (83 Stat. 196), is amended to read as follows:

"SEC. 6. (a) As used in this section—

"(1) The term 'former employee' means any former officer or employee of the National Aeronautics and Space Administration, including consultants or part-time employees, whose salary rate at any time during the three-year period immediately preceding the termination of his last employment

with the National Aeronautics and Space Administration was equal to or greater than the minimum salary rate at such time for positions in grade GS–13.

"(2) The term 'aerospace contractor' means any individual, firm, corporation, partnership, association, or other legal entity, which provides services and materials to or for the National Aeronautics and Space Administration in connection with any aerospace system under a contract directly with the National Aeronautics and Space Administration.

"(3) The term 'services and materials' means either services or materials or services and materials which are provided as a part of or in connection with any aerospace system.

"(4) The term 'aerospace system' includes, but is not limited to, any rocket, launch vehicle, rocket engine, propellant, spacecraft, command module, service module, landing module, tracking device, communications device, or any part or component thereof, which is used in either manned or unmanned spaceflight operations.

"(5) The term 'contracts awarded' means contracts awarded by negotiation and includes the net amount of modifications to, and the exercise of options under, such contracts. It excludes all transactions amounting to less than $10,000 each.

"(6) The term 'fiscal year' means a year beginning on 1 July and ending on 30 June of the next succeeding year.

"(b) Under regulations to be prescribed by the Administrator:

"(1) Any former employee who during any fiscal year,

"(A) was employed by or served as a consultant or otherwise to an aerospace contractor for any period of time,

"(B) represented any aerospace contractor at any hearing, trial, appeal, or other action in which the United States was a party and which involved services and materials provided or to be provided to the National Aeronautics and Space Administration by such contractor, or

"(C) represented any such contractor in any transaction with the National Aeronautics and Space Administration involving services or materials provided or to be provided by such contractor to the National Aeronautics and Space Administration,

shall file with the Administrator, in such form and manner as the Administrator may prescribe, not later than November 15 of the next succeeding fiscal year, a report containing the following information:

"(1) His name and address.

"(2) The name and address of the aerospace contractor by whom he was employed or whom he served as a consultant or otherwise.

"(3) The title of the position held by him with the aerospace contractor.

"(4) A brief description of his duties and the work performed by him for the areospace contractor.

"(5) His gross salary rate while employed by the National Aeronautics and Space Administration.

"(6) A brief description of his duties and the work performed by him while employed by the National Aeronautics and Space Administration during the threeyear period immediately preceding his termination of employment.

"(7) The date of the termination of his employment with the National Aeronautics and Space Administration, and the date on which his employment, as an employee, consultant or otherwise, with the areospace contractor began, and if no longer employed by such aerospace contractor, the date on which his employment with such aerospace contractor terminated.

"(8) Such other pertinent information as the Administrator may require.

"(2) Any employee of the National Aeronautics and Space Administration, including consultants or part-time employees, who was previously employed by or served as a consultant or otherwise to an aerospace contractor in any fiscal year, and whose salary rate in the National Aeronautics and Space Administration is equal to or greater than the minimum salary rate for positions in grade GS–13 shall file with the Administrator, in such form and manner and at such times as the Administrator may prescribe, a report containing the following information:

"(A) His name and address.

"(B) The title of his position with the National Aeronautics and Space Administration.

"(C) A brief description of his duties with the National Aeronautics and Space Administration.

"(D) The name and address of the aerospace contractor by whom he was employed or whom he served as a consultant or otherwise.

"(E) The title of his position with such aerospace contractor.

"(F) A brief description of his duties and the work performed by him for the aerospace contractor.

"(G) The date on which his employment as a consultant or otherwise with such contractor terminated and the date on which his employment as a consultant or otherwise with the National Aeronautics and Space Administration began thereafter.

"(H) Such other pertinent information as the Administrator may require.

"(c)(1) No former employee of the National Aeronautics and Space Administration shall be required to file a report under this section for any fiscal year in which he was employed by or served as a consultant or otherwise to an aerospace contractor if the total amount of contracts awarded by the National Aeronautics and Space Administration to such contractor during such year was less than $10,000,000; and no employee of the National Aeronautics and Space Administration shall be required to file a report under this section for any fiscal year in which he was employed by or served as a consultant or otherwise to an aerospace contractor if the total amount of contracts awarded to such contractor by the National Aeronautics and Space Administration during such year was less than $10,000,000.

"(2) No former National Aeronautics and Space Administration employee shall be required to file a report under this section for any fiscal year on account of employment with the National Aeronautics and Space Administration if such employment was terminated three years or more prior to the beginning of such fiscal year; and no employee of the National Aeronautics and Space Administration shall be required to file a report under this section for any fiscal year on account of employment with or services performed for an aerospace contractor if such employment was terminated or such services were performed three years or more prior to the beginning of such fiscal year.

"(3) No former employee shall be required to file a report under this section for any fiscal year during which he was employed by or served as a consultant or otherwise to an aerospace contractor at a salary rate of less than $15,000 per year; and no employee of the National Aeronautics and Space Administration, including consultants or part-time employees, shall be required to file a report under this section for any fiscal year during which he was employed by or served as a consultant or otherwise to an aerospace contractor at a salary rate of less than $15,000 per year.

"(d) The Administrator shall, not later than December 31 of each year, file with the President of the Senate and the Speaker of the House of Representatives a report containing a list of the names of persons who have filed reports with him for the preceding fiscal year pursuant to subsection (b)(1) and (b)(2) of this section. The Administrator shall include after each name so much information as he deems appropriate, and shall list the names of such persons under the aerospace contractor for whom they worked or for whom they performed services.

"(e) Any former employee of the National Aeronautics and Space Administration whose employment with or services for an aerospace contractor terminated during any fiscal year shall be required to file a report pursuant to subsection (b)(1) of this section for such year if he would otherwise be required to file under such subsection; and any person whose employment with or services for the National Aeronautics and Space Administration terminated during any fiscal year shall be required to file a report pursuant to subsection (b)(2) of this section for such year if he would otherwise be required to file under such subsection.

"(f) The Administrator shall maintain a file containing the information filed with him pursuant to subsections (b)(1) and (b)(2) of this section and such file shall be open for public inspection at all times during the regular workday.

"(g) Any person who fails to comply with the filing requirements of this section shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished by not more than six months in prison or a fine of not more than $1,000, or both.

"(h) No person shall be required to file a report pursuant to this section for any year prior to the fiscal year 1971.

"SEC. 8. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1971".

PRIVILEGE OF THE FLOOR

Mr. CANNON. Mr. President, I ask unanimous consent that all staff members of the Committee on Aeronautical and Space Sciences be allowed the privilege of the floor during the debate on this bill.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

Mr. CANNON. Mr. President, we have before us H.R. 16516, to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1971 for research and development, construction of facilities, research and program management, and for other purposes.

Mr. President, I wish to state that I am delivering this opening statement on behalf of our distinguished chairman of the committee, Senator ANDERSON, who performed an admirable job in getting this bill through the committee and to the floor of the Senate. Mr. President, at this time I would like to commend also the senior Senator from Maine (Mrs. SMITH) for her diligent work during the consideration of this authorization request.

This is the 13th annual budget for the National Aeronautics and Space Administration. The authorization request for fiscal year 1971 was $3,333,000,000—

almost $400 million less than the amount authorized for fiscal year 1970. I think this is a significant point. We have seen the NASA authorization peak at $5.2 billion in fiscal year 1965 and then gradually reduce as the design, development, and hardware phases of the manned space program were successively completed. In fact, the principal reductions in NASA funding in recent years have been in manned space flight. The level for fiscal year 1971 results from the fact that we are operating essentially with hardware designed, developed, and produced in prior years. This budget does not support continued production of the Saturn V vehicle or the active maintenance of essential production and test facilities beyond the end of this calendar year. These are being shut down as the last vehicle stage is processed out. The impact of these actions will be felt not today, or not tomorrow, but some 4 years from now when the Nation will not have equipment available to launch heavy payloads that it may desire to launch at that time.

However, concurrent with the termination of production of the Saturn vehicle family, NASA is confidently proceeding with studies defining a space shuttle system which holds great promise in reducing significantly the cost per pound of payload into orbit by virtue of the fact that all items of flight hardware would be reusable as opposed to the present system of throwaway stages. I emphasize that the space shuttle system is in the study phase. No commitments to develop this system have been made and will not be made until the system has been adequately studied and appropriate recommendations made to Congress. Yet with the great promise that this system holds, I believe the Nation should not forgo the opportunity to examine its potential. However, present estimates are that such a system could not be developed and available for operational use until about 1977 or 1978. It, therefore, is clear that there will be a pause of some 3 years in the Nation's capability to launch large payloads, either manned or unmanned. This is the most significant fact in this budget before the Senate today. The committee has not recommended continuation of the production of the Saturn V launch vehicle because as yet, quite frankly, we do not have payloads defined beyond 1974 which makes it extremely difficult to make a persuasive case that such production should be continued as provided for in the House-passed bill. Moreover, the promise of the space shuttle system does not make it practical to continue the Saturn V at this time.

The situation that I have described is not a good one, and I want the Senate to be aware of it. However, these are very difficult times with respect to fiscal requirements; and based upon the foregoing factors, the committee recommends acceptance of the administration's program for this year with the hope that as the months progress, our fiscal situation and our hardware requirements will become clearer so that the most intelligent decision may be made with respect to national launch vehicle capability for the mid-1970's and beyond. Mr. President, I have discussed our launch capability at some length because without this capability, we are just not in the space business; and all our programs, most of which have enjoyed success and which are the forerunner of programs offering more immediate benefits to earth applications, will suffer.

The bill contains $2,606,100,000 for research and development, an amount identical to the administration request; $32,550,000 for the construction of facilities, a reduction of $2,050,000 in the President's request; and $677,300,000 for research and program management, a reduction of $15,000,000 in the request.

In research and development, the committee recommends acceptance of the program levels requested by the administration, a level which is more than $400,000,000 below the amount authorized last year.

For the construction of facilities, your committee is recommending only those facility additions which are essential to support approved ongoing national space programs. In fact, some $14 million, the largest single item in the facilities request is for the rehabilitation and modification of existing facilities to keep those in a reasonable state of repair and readiness to support the functions for which they were built. The committee did, however, recommend deletion of the earth resources technology laboratory proposed for the Goddard Space Flight Center at an estimated cost of $2,050,000. This project was designed to accommodate the control center and ground handling equipment for the earth resources technology satellite. However, the committee was unable to determine that there was not some potential duplication of facilities, that effective facilities utilization in connection with this program was being proposed, and that adequate consideration had been given to the maximum efficiencies in organizing this program—efficiencies which might be realized through a better integration and consolidation of both experimental and operational short-range and long-range planning for the earth resources technology satellite program.

The research and program management request was about $50 million above that authorized for fiscal year 1970. However, some $40 million of this increase is directly attributable to the 1969 Federal employees pay increase. The committee believes, however, that since the space program has matured and the number of new programs initiated is reduced with the workload emanating from ongoing programs, further economies can and should be expected from the National Aeronautics and Space Administration management. Accordingly, the committee is recommending a reduction of $15 million in the request for personnel and related costs.

REVIEW OF PAST YEAR

When the committee presented the NASA fiscal year 1970 authorization bill to the Senate, the Apollo 11 accomplishment had recently been very dramatically recorded in history. Subsequent to that time, on November 14, 1969, Apollo 12 was launched on an equally successful mission to the moon. Based upon the experience gained during the Apollo 11 mission, Apollo 12 was able to devote a great deal more concentration and effort to increasing the scientific knowledge of this earth's satellite. On April 11, 1970, Apollo 13 was launched on the third lunar landing mission. However, due to an as yet unexplained failure in an oxygen tank in the service module, it was necessary to abort the mission and return the astronauts to earth. This return was successfully accomplished and in doing so aptly demonstrated the capabilities of the equipment and the space flight team which has been assembled to make this Nation first in space. The failure is under review by a formal accident review board and I am confident that the cause will be identified, corrective action devised, and the necessary testing accomplished at an early date to assure that we may go forward with Apollo 14 later this year as presently scheduled.

Recent months have been quite successful in the area of space applications. On January 23, Tiros M, the improved Tiros weather satellite, was launched. This satellite is the forerunner of the second generation Environmental Science Services Administration operational weather satellites. As soon as the necessary experimentation is completed it is proposed that ESSA will gradually replace its present ESSA weather satellites with the improved version. NASA launched the Nimbus 4, a developmental weather satellite, on April 8. This satellite carries advanced instrumentation to test new concepts which then can be placed into operational use to contribute to the various data banks desired by ESSA to enhance our long-range weather forecasting capability.

In support of international cooperation, NASA, on October 1, 1969, launched ESRO 1–B, a scientific satellite of the European space community, designed to make studies of the polar ionosphere. This was followed on November 8 by the launch of a German research satellite to study energetic particles. On March 20, 1970, NASA launched Skynet A, a communications satellite, for the British Ministry of Defense.

In fulfillment of its statutory obligations, NASA launched an Intelsat 3 communications satellite on January 14 for the Communications Satellite Corporation which was followed by the launch of a similar satellite for Comsat a few days ago.

Mr. President, at this point, I ask unanimous consent to have printed in the RECORD a table showing the NASA authorization request, the action of the House in passing H.R. 16516, and the actions of your committee as set forth in H.R. 16516, as amended.

There being no objection, the table was ordered to be printed in the RECORD, as follows:

CONGRESSIONAL ADJUSTMENTS TO NASA FISCAL YEAR 1971 REQUEST

	Summary		
	Budget request	House action	Senate committee action
Research and development:			
Apollo	$956,500,000	$1,087,000,000	$956,500,000
Space flight operations	515,200,000	654,700,000	515,200,000
Advanced missions	2,500,000	1,000,000	2,500,000
Physics and astronomy	116,000,000	110,400,000	116,000,000
Lunar and planetary exploration	144,900,000	144,900,000	144,900,000
Bioscience	12,900,000	12,900,000	12,900,000
Space applications	167,000,000	172,600,000	167,000,000
Launch vehicle procurement	124,900,000	124,900,000	124,900,000
Space vehicle systems	30,000,000	30,000,000	30,000,000
Electronics systems	22,400,000	23,900,000	22,400,000
Human factor systems	17,900,000	18,300,000	17,900,000
Basic research	17,600,000	18,000,000	17,600,000
Space power and electric propulsion systems	30,900,000	30,900,000	30,900,000
Nuclear rockets	38,000,000	38,000,000	38,000,000
Chemical propulsion	20,300,000	20,300,000	20,300,000
Aeronautical vehicles	87,100,000	87,100,000	87,100,000
Tracking and data acquisition	298,000,000	293,080,000	298,000,000
Technology utilization	4,000,000	4,500,000	4,000,000
Total	2,606,100,000	2,873,200,000	2,606,100,000

	Summary		
	Budget request	House action	Senate committee action
Construction of facilities:			
Ames Research Center	$1,525,000	$1,525,000	$1,525,000
Goddard Space Flight Center	2,050,000	2,050,000	0
Jet Propulsion Laboratory	1,950,000	1,950,000	1,950,000
John F. Kennedy Space Center	575,000	575,000	575,000
Manned Spacecraft Center	900,000	900,000	900,000
Marshall Space Flight Center	525,000	525,000	525,000
Nuclear Rocket Development Station	3,500,000	3,500,000	3,500,000
Various locations	18,575,000	17,950,000	18,575,000
Facility planning and design	5,000,000	5,000,000	5,000,000
Total	34,600,000	33,975,000	32,550,000
Research and program management	692,300,000	693,700,000	677,300,000
Grand total	3,333,000,000	3,600,875,000	3,315,950,000

Mr. CANNON. Mr. President (Mr. EAGLETON), the committee is recommending $2,606,100,000 for research and development, $32,550,000 for the construction of facilities, and $677,300,000 for research and program management. The bill total of $3,315,950,000 represents an amount of $284,925,000 below the House action on H.R. 16516 and an amount $17,050,000 below the NASA request.

The recommended amount of $2,606,-100,000 for research and development is identical with the administration budget request and $267,100,000 below the amount approved by the House. Of the total amount recommended for research and development, $956,500,000 is for the Apollo program, a program which has demonstrated this Nation's capability in manned space flight through its two very successful lunar landings and its outstanding recovery from an equipment failure on Apollo 13 in space just a few days ago. The record shows that these accomplishments have earned worldwide acclaim and greatly enhanced the prestige of this Nation in the eyes of the world. The Apollo funding for fiscal year 1971, a reduction of over $700 million from the previous year, will be used to complete the original complement of Apollo hardware, to deactivate and mothball many of the Apollo production and test facilities, and to provide operational support to launch the ongoing lunar mission presently scheduled as follows: one in the fourth quarter, 1970, subject to successful identification and correction of the malfunction which occurred on Apollo 13, two in 1971, one in 1972, and two in 1974.

These missions designed for an extensive scientific investigation of the moon are scheduled as a balance between fiscal austerity, operational efficiency, and the timespan necessary to maximize the evaluation of one mission prior to launching the succeeding flight. I would again call the attention of my colleagues to the fact that there is no provision for further production of the Saturn V launch vehicle, beyond completing the remaining activities by the end of this calendar year, which has given this Nation its outstanding posture in manned space flight. The committee's recommendation is $130,500,000 less than that approved by the House for Apollo. The committee did not agree with the House additions, believing that the funding requested by NASA was adequate to accomplish the program presented.

The space flight operations program recommended at $515,200,000 represents the Nation's program for undertaking new manned space flight endeavors utilizing but extending the capabilities of the equipment designed and developed for the Apollo program. The Apollo applications project, recently redesignated Skylab, is the one approved flight project in this program. It consists of placing a Saturn V third stage converted into an experimental workshop into earth orbit. The workshop is designed to operate for an extended period of time supporting experiments in long duration manned flight evaluating the usefulness of man in living and working in space, and experiments in earth applications technology and solar astronomy. The workshop will be completely outfitted on the ground and launched by the first and second stage of a Saturn V—a change from the previous plan in that originally the launch would have been accomplished by the smaller Saturn 1–B launch vehicle. The revised plan simplifies the orbital activity by eliminating the erection of many internal structures in the workshop by the astronauts to make it habitable and the necessity for docking maneuvers for the Apollo telescope mount. The workshop will be launched in late 1972 and will be followed by three visits by astronauts launched in an Apollo spacecraft by the Saturn 1–B vehicle. Partial provision will be made for a backup workshop in the event circumstances indicate that this may be beneficial or necessary.

The second major element in the space flight operations program is the design and definition studies for the space shuttle orbital transportation system and for the space station which is being examined as a potential program for very late in this decade. The principal funding, however, some $80 million, is to be devoted to determining within the next year whether we ought to undertake the space shuttle development which offers great promise for substantial reductions in the cost of future space operations. The space shuttle system, being examined as reusable for as many as 100 flights, would offer great flexibility as well as economy in transporting spacecraft, men, and supplies to earth orbit. It would be able to support a space station and place in orbit many of the satellites which now require individual throwaway launch vehicles. The House has approved the addition of $139.5 million in the space flight operations program, divided about equally between the Apollo applications project and space shuttle system studies. The committee has examined both of these projects very carefully and it does not believe that such an increase above the NASA request is warranted.

Mr. President, in recent years I recall that a question has always been raised or a statement made that we are undertaking a manned mission for Mars. I want to dispel that. There is no money in this budget for such an undertaking, and there is not now any hardware in existence, in design, or in production which is to be used for such a purpose. In addition, I have personally stated for the record that we should not now undertake such a mission.

The committee is recommending $2.5 million for advanced mission studies in the Office of Manned Space Flight. It is the judgment of your committee that these activities are well worthwhile in order to better define and thereby focus the much more expensive efforts which may follow in the future. Accordingly the committee recommends the restoration of the $1.5 million cut which the House made in this program.

H.R. 16516 contains a recommended amount of $565,700,000 for the programs managed by NASA's Office of Space Science and Applications. This amount is identical with the administration request and with the House approved amount although the House has approved certain offsetting adjustments between two programs within this group. This

program area manages and supports the unmanned scientific investigations of space and the planets and also conducts a broad effort in space applications directly related to improving our ways of doing business through space technology. There are no new projects in the physics and astronomy program, and the recommended amount of $116 million essentially involves support for investigations approved and initiated in prior years. The lunar and planetary exploration program recommended at $144.9 million will continue our unmanned Mars exploration program by supporting two Mariner-type spacecraft being built for launch in 1971 to orbit the planet. This is a follow-on to our highly successful Mariner-Mars 1969 fly-by program which is now concluded. This program also provides for a Venus-Mercury 1973 swing-by mission, initiated last year to take advantage of the planetary positions and obtain information on both planets with one spacecraft. In addition, the program also supports the ongoing and very successful Pioneer deep space investigation project. Last year I advised the Senate that the committee recommended support for the unmanned 1973 two-spacecraft Mars project called Viking. This project would provide orbital surveillance of the planet in conjunction with sending survivable instrument packages to the surface. The launch date for Viking was slipped to the 1975 opportunity in the final NASA budget discussions in order to reduce the funding requirements for fiscal year 1971. The committee regrets that this launch date was postponed because the action does in fact increase the overall cost of Viking, a project which the committee believes that the Nation should undertake; however, in recognition of the need for fiscal austerity the committee supports this adjustment inasmuch as it believes that the orderly, progressive, unmanned investigation of this planet laid out over 2 years ago should be continued.

The committee recommends $12.9 million for the bioscience program, a reduction of over $7 million from the previous year's authorization level. The biosatellite spacecraft project has been discontinued as I reported last year and the direction of this program is still under review in NASA utilizing recommendations made by a special study group established by the National Academy of Sciences. The committee recommends supporting the lower level of research in bioscience until a clearer objective can be established for this program.

The bill contains $167 million, an increase of $38.6 million above fiscal year 1970, for the space applications program. This program supports the development of weather satellites, geodetic satellites, earth resources survey satellites, and the development of advanced spacecraft technology looking toward applications in navigation and traffic control and advanced communications areas. The program for fiscal year 1971 will continue at about the same annual level on work in support of meteorological satellites with one major exception, and that is proceeding to hardware development with the synchronous meteorological satellite—SMS—which will eventually become an integral part of the ESSA weather satellite network. The SMS accounts for about $13 million of the fiscal year 1971 increase in the space applications program. The largest individual project increase, however, is for the earth resources survey satellite, with an increase of $26.5 million above the fiscal year 1970 operating level. This project is strongly endorsed by the committee and by the various agencies with functional responsibilities in the natural resources area, such as the Department of the Interior and the Department of Agriculture, inasmuch as large potential rewards are predicted from natural resource, crop, hydrologic, and other surveys of the U.S. continental land mass and adjacent oceanographic areas. The large increase in this project this year is directly attributable to going forward with the actual hardware production for the two spacecraft in the initial program. The committee is concerned, as expressed in its report, about the absence of a formal agreement to cover both the short-range and long-range interests and responsibilities of the several agencies interested in this project and it urges that early attention be given to committing these matters to writing. The committee is convinced that working out such agreement or agreements will promote greater efficiency and eliminate duplication in the prosecution of this very important project.

The space applications program also includes $31.1 million for the applications technology satellite. This project supports the design and testing of new concepts in unmanned spacecraft technology such as stabilization and advanced instrumentation and experiments for eventual use on other applications satellites supporting operational activities. In the formulation of the fiscal year 1971 budget request the two current satellites in this project, ATS–F and G, were rescheduled to reduce the financial impact in this fiscal year. The House approved a reduction of $5.6 million in the Explorer project in the physics and astronomy program and the addition of that money to the ATS project to return it to the earlier launch schedule. The committee, as explained in the report, does not concur with a reduction in the physics and astronomy program and noted the testimony from NASA witnesses does not indicate that such an amount would be adequate to retrieve the schedule for the ATS launches. Accordingly the committee did not concur with the House action in this regard.

The final program in OSSA is that of launch vehicle procurement, for which $124.9 million is recommended. This program supports the development, procurement and launch of vehicles to support the unmanned spacecraft programs which I have been discussing. The amounts requested are directly relatable to approved unmanned spacecraft flight projects, and the committee recommends support of this program at the requested level.

The bill before the Senate today includes a total of $264.2 million for those programs managed by the Office of Advanced Research and Technology. This level is approximately $8.1 million below the fiscal year 1970 NASA operating plan which in turn is $18.6 million—for a total of $26.7 million—below the fiscal year 1970 authorization. A large part of the reduction in the fiscal year 1970 operating level is due to the NASA decision not to proceed with the nuclear rocket engine development at the level recommended by the Congress. Work on this important development, fully endorsed by the President's space task group, will continue in fiscal year 1971. A large reduction has been made in the electronics systems program in fiscal year 1971 with lesser reductions in other programs—all of which have been offset to some extent by a $10 million increase in the aeronautics program. These programs are directed toward accomplishing the advanced research for and laying the technological foundation for undertaking the space flight projects envisioned for the future and for maintaining a strong aeronautical research capability.

These programs range from basic research per se to advanced research in electronics, human factors, space power, and space propulsion with a heavy and necessary effort in the area of structures and materials. I would characterize these programs as doing your homework for the future. The programs in this group are conducted primarily on a level of effort basis and, with a very few exceptions, represent scientific and technical manpower efforts as opposed to hardware expenditures which are found in the manned and unmanned spacecraft development programs. All of these programs, to a greater or lesser degree, contribute to NASA's aeronautical responsibilities as well as to space; and, in fact, we see a drawing together of the space and aeronautical know-how.

In addition to the efforts devoted to aeronautics in other program areas, this bill contains $87.1 million for research in the aeronautics program line item. This amount is an increase of about $10 million above that recommended and authorized last year. Although it is often forgotten when one thinks of the National Aeronautics and Space Administration, NASA does have a statutory responsibility to lead the Nation in aeronautical research and it does that. In addition to this aeronautical research and development budget, NASA maintains and operates basic research facilities in aeronautics and maintains a staff of 3,197 personnel in support of its aeronautical programs. The aeronautics program covers the spectrum from general aviation through V/STOL, subsonic aircraft and hypersonic aircraft technology, including propulsion, structures, aerodynamics and stability and control.

The House added a total of $2.3 million to selected programs in advanced research and technology to be used to emphasize certain aeronautical efforts. This addition was made by an equivalent reduction in the tracking and data acquisition program. The committee appreciates the contribution that aviation technology has made to the gross national product of the Nation and the record of the committee is very clear in

its attention to assuring that our aeronautical efforts are not slighted; however, the committee is not persuaded that the rather nominal amounts added to these programs will have a significant impact, and when measured against the contribution of the tracking and data acquisition program, the committee did not believe that the adjustment should be concurred with.

The tracking and data acquisition program is recommended to the Senate at the NASA level of $298 million, an increase of $20 million above the amount authorized and actually programed for use in fiscal year 1970. This is a vital program. All of the investment that the Nation makes in launch vehicles, spacecraft, and experiments—not to mention the concern with the safety of our astronauts on manned missions—would be lost without an adequate and reliable command and control and data transfer capability which is provided through this program. In the past year reductions have been made in the number of instrumentation ships and aircraft utilized in this program and other adjustments have been made as operating experience enabled NASA to introduce economies without jeopardizing the function served. Each year the number and complexity of space missions to be supported continues to increase. The increase of $20 million that I referred to is to provide for an upgrading of the equipment so that an up-to-date and reliable network is available to support the flight projects at all times. This upgrading has been deferred to some extent in previous years because of financial cutbacks; however, the committee does not believe this deferral should be continued and recommends acceptance of the amount in the bill. For the foregoing reasons the committee did not agree with the $4.2 million reduction in this program approved by the House, $2.3 million of which I have already stated was reallocated to other programs. The remaining $1.9 million was reallocated to increase technology utilization efforts and to the research and program management category which I will discuss later.

The committee is recommending $4 million for the technology utilization program which supports mechanisms for identifying and transferring new ideas developed in the space program to the nonaerospace industrial community and the general public. There is an established and ongoing network for carrying out this important activity. Also, provision is made in the program for exploring new ideas for enhancing the transfer process. The committee believes that the NASA request of $4 million is adequate and did not concur with the $500,000 House approved addition.

CONSTRUCTION OF FACILITIES

The administration requested $34.6 million for the construction of facilities for NASA for fiscal year 1971. The committee is recommending a construction of facilities budget of $32,550,000, an amount $2,050,000 less than the administration request and an amount $1,425,000 less than that approved by the House. Approximately 60 percent of the request for facilities for the various NASA installations is to replace obsolete, deteriorated and/or inadequate facilities that have either outlived their usefulness or their effectiveness, and for the rehabilitation of existing facilities to maintain their usefulness and capability to perform the function for which they were built. Three facilities were requested—one at the Goddard Space Flight Center for $2,050,000, one at the Jet Propulsion Laboratory for $1,250,000, and one at the Nuclear Rocket Development Station for $3,500,000—which in my judgment I consider as wholly new projects that would provide a major new capability. The remainder of the construction of facilities request consists of those smaller additions and modifications required by NASA to conduct its programs effectively.

For the reasons I have indicated, in conjunction with my discussion of the Earth resources technology satellite project, the committee has recommended disapproval of the request for the Earth Resources Technology Laboratory estimated to cost $2,050,000 and proposed to be located at the Goddard Space Flight Center. The committee, as stated in the report, recommends that the executive branch survey the appropriate location for such a facility in the light of the overall earth resources program and the provision of facilities which will most efficiently serve that need.

The committee is recommending $1,250,000 to construct a radioisotope thermoelectric systems application laboratory at the Jet Propulsion Laboratory which will support the application to unmanned spacecraft of the long-lived nuclear power sources required for upcoming longer duration, more complex, higher power requirement missions. The lower power requirements of the present day spacecraft have generally been satisfied by the use of solar cells which have severe limitations for future missions. The third major new facility request is for $3.5 million to provide for the initial increment of construction for engine test stand No. 2 at the Nuclear Rocket Development Station. This funding will provide for the addition of steam generation capacity at the existing nuclear engine test stand site which will also provide similar altitude simulation capability for the engine stage test stand to be constructed for development testing of the nuclear rocket stage. This project is required to support the nuclear rocket stage development established by the President's space task group as an integral part of the Nation's future space propulsion capability. It is necessary to provide for the initiation of construction of the developmental test facilities in fiscal year 1971 in order to maintain the schedule established for the engine itself.

The House deleted two rehabilitation and modification projects from the construction of facilities request. The committee did not concur with these deletions at the Michoud assembly facility and the Mississippi test facility inasmuch as they are important to maintaining the basic capability of these facilities for future use.

RESEARCH AND PROGRAM MANAGEMENT

H.R. 16516 contains $677,300,000 for the research and program management appropriation category. The recommended amount is $15 million below the NASA request of $692,300,000 and $16.4 million below the amount approved by the House. This funding supports research in the Government-owned laboratories of the National Aeronautics and Space Administration, provides for the management of the agency and its programs, and supports the maintenance and operation of the NASA facilities. The research and program management level requested for fiscal year 1971 is $54.9 million above that authorized in fiscal year 1970; however, during the review, recognition was given to the fact that $41.7 million of the increase is attributable to the 1969 Federal employees pay increase. Nevertheless, the committee has been increasingly concerned about the continuing increase in this appropriation category and the tendency on the part of the agency to reprogram funds seemingly without regard for the program levels established by the Congress and the need for more effective manpower management and utilization, particularly in view of the maturity of the agency and the programmatic trends which have existed for some 3 years. Accordingly the committee is recommending a $15 million cut in that portion of this category identified in the budget as personnel and related costs. This would establish a level of $500,108,000 for personnel and related costs, with the remaining $177,192,000 of the total recommendation of $677,300,000 to be used for other expenses associated with this appropriation category. In addition, the committee is recommending appropriate wording in section 1(c) of the bill and an addition to section 4 of the bill, section 4(b), which would make the $500,108,000 a firm ceiling which may not be exceeded by the agency.

LEGISLATIVE CHANGES

The committee is recommending to the Senate four legislative amendments to the NASA fiscal year 1971 authorization request. The first amendment would establish in section 1(c) a ceiling of $500,108,000, which would be available within the research and program management appropriation category for personnel and related costs. The second amendment would amend section 4 which deals with the agency's reprograming authority. Briefly, this amendment to this section would specify that nothing in the section should be construed to authorize expenditures of amounts for personnel and related costs to exceed the ceiling established. I have already discussed the basis for these recommendations.

In the past year inquiry has developed that the NASA policy on the employment of experts and consultants has left something to be desired and raises a question as to whether a proper return has been received for the money spent for these services. Accordingly, the committee, through an amendment to section 1, has established a ceiling of $500,000 on funds which may be used for the payment of services, per diem, travel, and other ex-

penses of experts and consultants. Also, in connection with the administration of its consulting services NASA is being requested to review its procedures and take such action as necessary to assure that all possible conflicts of interest are eliminated prior to the employment of a consultant.

The fourth amendment would add a new section 7 to the fiscal year 1971 act amending section 6 of the NASA Authorization Act of fiscal year 1970. This section relates to certain reporting requirements required of certain former employees of NASA employed by the aerospace contractors or vice versa. A similar requirement was established in the Department of Defense Authorization Act of 1970 and during the ensuing year it was noted that several differences existed between the two acts although they were intended to be identical. Inasmuch as both agencies deal frequently with the same contractors and since both agencies engage in cross-servicing arrangements in contract administration, and so forth, an increasing burden is created by these small differences in the act. The committee amendment would remedy this condition without any substantive change in the intent of the basic provisions.

OTHER MATTERS

Mr. President, in conclusion, I would like to comment briefly on the international space cooperation activities of the National Aeronautics and Space Administration. This subject has been the subject of discussion in this Chamber from time to time. The committee has always followed NASA's international activities very closely, encouraged continuing overtures by NASA to other nations interested in space endeavors, and from time to time published committee reviews of the status of international activities. This year the committee continued these efforts with a hearing devoted solely to a review of the current status of NASA's international activities. The hearing followed by just a short time a series of international visits by Dr. Paine, the Administrator of NASA, to other nations to discuss space cooperation. The hearing record has been published as part III of the fiscal year 1971 authorization hearings, and this document is available on the desks of each Senator today. I commend this to your reading.

Also, the committee, as it did last year, devoted one complete hearing to a review of the practical benefits or so-called "spinoff" from the space program which is or may be applicable to the average individual in his everyday life. These benefits are frequently obscured by the more dramatic activities of manned space flight, but they nonetheless are present and are very real. Admittedly we are in the infant stage in realizing the benefits of space technology, but it is clear that we have established a great bank of knowledge which we may draw on to better serve our society in the years ahead. The record of this hearing on space benefits will be published very soon, and it will be available from the committee at an early date. Again I urge my colleagues to review this material.

Mr. President, this concludes my statement. I believe that the fiscal year 1971 authorization recommendation I have presented is a very austere one. Certainly it is lower than what I personally believe the Nation should have; however, one must be realistic and recognize the many demands upon our fiscal resources. In doing so, however, I trust that my colleagues will agree that the Nation should maintain, preserve, and establish a sound base to continue to maintain our hard-earned space leadership in the years ahead. This bill will do this; and although some rather major adjustments have had to be made on future programs to meet budget constraints, I do think it will enable us to move forward with the basic essentials of a national space program. I urge the support of my colleagues for this bill.

Mrs. SMITH of Maine. Mr. President, I thank the distinguished Senator from Nevada for his kind words about me and also for the effort he has made in making this bill what it is as it comes to the Senate for our consideration.

I also wish to thank the distinguished Chairman of our Space Committee, the senior Senator from New Mexico (Mr. ANDERSON), who has guided our committee through extensive hearings and also the markup, and who has given our committee a chance to bring to the Senate for consideration what we think is a very fine bill.

I also commend the staff of our Space Committee under the direction of Mr. James Gehrig for the fine job they performed on this bill.

The bill has been explained very carefully and most completely by the distinguished Senator from Nevada, so I will not take any time of the Senate to go into it in more detail.

I do want to add, However, that programs contained in the bill contribute to virtually every segment of our society—science, education, medicine, and industrial technology. I believe the space program has greatly enhanced international goodwill and respect for the United States throughout the world.

Mr. President, the committees have worked long and hard on the bill. I both recommend and urge that the Senate approve the bill as it is.

Mr. GOLDWATER. Mr. President, I wish to join in the comments of the distinguished Senator from Maine (Mrs. SMITH) relative to the chairman of the Space Committee and the very competent staff.

I wish to address a few remarks in support of the bill.

When Apollo 13 Astronaut James Lovell appeared before the Aeronautical and Space Sciences Committee after his harrowing trip around the moon, he was commenting on the benefits that flow from the space program. He said:

> We believe the space program, if nothing else, is a stimulus to education.

I think that merits repeating, Mr. President, because we hear so much talk these days that would indicate that all the money spent in space is wasted—a gigantic fraud on the American people. It is as if some people expect a pound of goods for each dollar spent; that an effort is not worthwhile unless they can show some fiscal return, some tangible goods, a new product. So it is significant that Captain Lovell believes the real value of the space program is something as intangible as an educational stimulant; a spur to the people of this country to learn.

Consider for a minute what an achievement that is. In this day of "tune-in, turn-on, and drop-out," how would you, Mr. President, or any of my distinguished colleagues—how would you go about stimulating our young people to continue their education? What subject would you pick? God; country; personal security? What rhetoric would you use to exhort your audience to pursue education to their limits? I think most of you will agree that it is a difficult task.

Yet the space program seems to be achieving that task.

I am sure it is not necessary to justify the value of education. Since this country was founded, education has been one of our driving forces. We were the first country in the world to seek to educate the mass of its population. It is in large measure responsible for making this Nation as great as it is.

And so, Mr. President, I want to say, especially to those here who are so concerned with the dignity of the human being in this country, with social values and personal freedom, that the stimulus to education provided by the space program is a valuable asset to all those goals.

Education is the means by which we are raised above the animals. Through education we learn how to meet our problems and ultimately to solve them. Education is the means whereby we remain free.

What greater return can we ask from our investment in space than that it lift our eyes from the ground and lead us in the pursuit of all these things?

Mr. President, I might comment from personal experience in the education field of the tremendous interest that has been aroused in our young people. I am not talking about teenagers; I am talking about those I call the "space age generation." I refer to those who are 8, 9, 10, 11, 12 years old. I have stayed very close to education at all levels throughout my life. It is an education to me to visit grammar schools and listen to the interest generated among these youngsters in becoming better educated.

I was shocked recently when I was home and my eldest granddaughter came up and said, "Pop-Pop, show us how you did arithmetic." While there were times in the past when I could not make 2 and 2 come out to 4 every time, I took a piece of paper and showed her how we did arithmetic. She said, "Let me show you how we do it." She lectured me on binary arithmetic, which is the arithmetic of computers.

In talking about the space program and the great achievements, I have felt that we might have the first real long bootstrap we have had since our frontiers were closed when our forefathers reached the Pacific coast. The new frontier is in space.

I do not want to comment on the value

of the program to education alone. I think that the most important fallout from this program is the satellites we have in the process of being perfected that will provide accurate pinpoint navigation for aircraft and ships all over the world. Think of the tremendous advantage the whole world will have when we have a proper use of communication satellites that will, to a large measure, stamp out the lack of communication between people of this earth.

There are also the television satellites. It is now proposed that over 5,000 television sets be placed in India alone so that the underprivileged can receive an education through television.

One of the most important fallouts or spinoffs of the space program is in the earth survey program we have going on in this country. Through a new process of color photography we can tell from either highflying aircraft or lowflying satellites the condition of the earth: whether it is too dry, whether it is too moist, what it needs in the way of fertilizer, and how the crops are growing. We need not spend valuable days and money any more going into the field to determine these things because they can be determined in moments by photographs from the air.

I have heard in this Chamber and around the country many times the question, "What have we gotten for the $42 billion we have spent on space?" As indicated earlier, I do not think I could stand here and count out $42 billion worth of return; but I am willing to hazard a good guess that within 5 years we will determine that this investment has probably been the wisest investment ever made by the Federal Government because already we have produced thousands of items of a fallout or spinoff nature.

I ask Senators who are trying to make up their minds whether or not to support the bill and the authorization to evaluate for themselves whether or not this has been productive and I shall get into only a couple of fields. For example, Mr. President, if I told you that the absolutely fireproof house is now with us, would that be worth $42 billion to think we would never lose another life through fire in a home or building? I think it is worth it. If I were to tell you it is now possible to coat the inside of a fuselage and the wings of an aircraft so that the aircraft could not be set on fire, no matter how much gasoline was poured into it, is that worth $42 billion to save the lives of people? We lose over 500 people a year in aircraft accidents, many by fire.

Another important fallout from the space program is that we are now in the process of perfecting a device that will tell the pilot of one airplane that there is another airplane in the proximity and warn him of it and what to do about it. That is a fallout from the space program. Is that worth $42 billion? I think it is, to avoid any future midair collisions in this country or any other part of the world.

Mr. CURTIS. Mr. President, will the Senator yield?

Mr. GOLDWATER. I am happy to yield.

Mr. CURTIS. I am interested in what my distinguished friend has to say about the benefits of the space program. Would the Senator subscribe to the statement that, in order to accomplish what has been accomplished in space, it meant that this country had to accumulate, acquire, and apply vast amounts of knowledge, science, and technology? All this was necessary in order to do what has been done in the space program. Is that correct?

Mr. GOLDWATER. I could not agree more. In fact, I was just looking at my desk to see if I had brought a list of documents, films, books, and other presentations that have been made to the educational world by the NASA experimentation and investigation and by the moneys we have invested in it.

Mr. CURTIS. I would like to offer the suggestion that it is entirely possible that out of the advances in knowledge, science, and technology that came about because of the space effort, there might well flow more benefits to man on earth than the direct benefits of the actual landing on the moon.

Mr. GOLDWATER. I could not agree with the Senator more. The actual landing on the moon was, of course, a tremendous achievement. By the way, we have learned from that already. We have achieved more than a few vials of moon dust. We are getting a better insight of what our world consists. We are learning about some elements which we suspected but did not know about until our landing on the moon.

Mr. CURTIS. I might mention that we learned much in X-ray technique.

Mr. GOLDWATER. The Senator is absolutely correct. I might take that a step further and say that at the optical laboratory at the University of Arizona, applying techniques that have been advanced by the NASA program, we now have an electronic microscope that can read out a cancer cell in 1 minute and type out the characteristics of that cell—a process that my doctor son-in-law tells me would otherwise take about a month to do.

By the way, we have made some real first steps in the investigation of cancer under the NASA program.

If the Senator would allow me to do so at this point, so we do not get too far away for the reader, I ask unanimous consent to have printed at this point in my remarks a statement made by Dr. Thomas Paine before the committee, listing the scientific and technical publications.

There being no objection, the list was ordered to be printed in the RECORD, as follows:

NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS

The National Aeronautics and Space Administration makes the results of worldwide research and development activities in aeronautics, space, and supporting disciplines promptly available to all interested parties. NASA's scientific and technical information system now contains nearly one million documents, which are abstracted, indexed, and obtainable through retrieval and dissemination services.

The dissemination services make use of four NASA announcement journals: Scientific and Technical Aerospace Reports, International Aerospace Abstracts, Reliability Abstracts and Technical Reviews, and Computer Program Abstracts. These journals cover the following areas:

Scientific and Technical Aerospace Reports is a comprehensive abstracting and indexing journal covering current worldwide report literature on the science and technology of space and aeronautics. *STAR* is published semimonthly.

By arrangement between NASA and the American Institute of Aeronautics and Astronautics, the AIAA publication *International Aerospace Abstracts* provides parallel coverage of scientific and trade journals, books, and conference papers in the same subject areas as the reports abstracted in *STAR*. *IAA* is published semimonthly.

Reliability Abstracts and Technical Reviews is an abstract and critical analysis service covering published and report literature on reliability. The service is designed to provide information on theory and practice of reliability as applied to aerospace and an objective appraisal of the quality, significance, and applicability of the literature abstracted.

Computer Program Abstracts is an indexed abstract journal listing documented computer programs developed by or for the National Aeronautics and Space Administration, the Department of Defense, and the U.S. Atomic Energy Commission which are offered for sale through the Computer Software Management and Information Center (COSMIC).

NASA also publishes a series of technical journals, reports and special publications. They are:

Technical Reports: Scientific and technical information considered important, complete, and a lasting contribution to existing knowledge.

Technical Notes: Information less broad in scope but nevertheless of importance as a contribution to existing knowledge.

Technical Memorandums: Information receiving limited distribution usually because of the preliminary nature of the data.

Contractor Reports: Scientific and technical information generated under a NASA contract or grant and considered an important contribution to existing knowledge.

Technical Translations: Information published in a foreign language, and needed in the aerospace program.

Special Publications: Information derived from or of value to NASA activities. Publications include conference proceedings, monographs, data compilations, handbooks, sourcebooks, and special bibliographies.

Technology Utilization Publications: This category of Special Publications includes information on technology used by NASA that may be of particular interest in commercial and other non-aerospace applications. Publications include Technology Utilization Reports, Notes, and Technology Surveys.

Listed below are representative titles of recent NASA publications in the various series.

TECHNICAL NOTES

Fortran Program for Machine Computation of Group Tables of Finite Groups. By G. Allen, D. D. Evans, and P. Swigert (NASA TN D-5402).

Experimental Measurements of Expanding Storable-Propellant Products Simulated by Combustion of Gaseous Reactants. By R. Friedman, R. Gangler, and E. Lazberg (NASA TN D-5404).

The Visual Acuity in Viewing Scaled Objects on Television Compared With That in Direct Viewing. By E. Long, Jr., and S. Long (NASA TN D-5534).

Some Factors Affecting the Stress-Corrosion Cracking of Ti-6A1-4V Alloy in Methanol. By W. B. Lisagor (NASA TN D-5557).

A Study of the Application of Heat or Force Fields to the Sonic-Boom Minimization Problem. By D. S. Miller and H. W. Carlson (NASA TN D-5582).

TECHNICAL MEMORANDUMS

A Review of Liquid Propellants By R. O. Miller (NASA TM X–1789).

Synoptic Analysis of the Southern Hemisphere Stratosphere. By A. J. Miller and F. G. Finger (NASA TM X–1814).

A Procedure for Furnace Brazing Butt Joints in Tungsten-Uranium Dioxide Cermet Cylinders at 3000° C By T. J. Moore and D. W. Adams. (NASA TM X–1815).

Toxicity Problems in Plastic Hardware Designed for Biological Space-Flight Experiments By R. Willoughby (NASA TM X–1818).

Design and Performance of a Heart Assist or Artificial Heart Control System Using Industrial Pneumatic Components. By J. A. Webb, Jr., and Vernon D. Gebben. (NASA TM X–1953).

TECHNICAL REPORTS

The Effects of Molecular Structure on the Thermochemical Properties of Phenolics and Related Polymers. By J. A. Parker and E. L. Winkler (NASA TR R–276).

Self-Synchronizing Fi-Orthogonal Coded PCM Telemetry System. By W. Miller, R. Muller, T. Taylor, and J. Yagelowich (NASA TR R–292).

Principles of Optical Data Processing for Engineers. By A. R. Shulman (NASA TR R–327).

Techniques for Eliminating Baseband Voice Interference with Telemetry for the Apollo Communication System. By G. D. Arndt, S. W. Novosad, and R. J. Panneton (NASA TR R–337).

CONTRACTOR REPORTS

Testing of High-Emittance Coatings. By R. E. Cleary and C. Ammann (NASA CR–1413).

General-Aviation Pilot Reactions to and Opinions on Groove Runways. By G. E. Cranston (NASA CR–1428).

Research on Metallurgical Characteristics and Performance of Materials Used for Sliding Electrical Contacts. By W. H. Abbott and E. S. Bartlett (NASA CR–1447).

Stress Corrosion Cracking of Titanium Alloys at Ambient Temperature in Aqueous Solutions. By T. L. Mackay (NASA CR–1464).

Effects of Sonic Booms and Subsonic Jet Flyover Noise on Skeletal Muscle Tension and a Paced Tracing Task. By J. S. Lukas, D. J. Peeler, and K. D. Dryter (NASA CR–1522).

Compatibility of Columbium Base Alloys with Lithium Fluoride. By R. W. Harrison and W. H. Hendrickson (NASA CR–1526).

TECHNICAL TRANSLATIONS

Titanium Alloys for Modern Technology. By N. P. Sazhin (NASA TT F–596).

Satellite Meteorology. By K. S. Shifrin and V. L. Gayevskiy (Eds.) (NASA TT F–589).

Perception of Space and Time in Outer Space. By A. A. Leonov and V. I. Lebedev (NASA TT F–545).

Radiophysics. 1965–1966: Radiophysical Investigations of Venus. By A. D. Kuzmin (NASA TT F–536).

SPECIAL PUBLICATIONS

Apollo 11: Preliminary Science Report (NASA SP–214).

Exploring Space With A Camera. Compiled and Edited by E. M. Cortright (NASA SP–168).

Weather Satellite Picture Receiving Stations.—Inexpensive Construction of Automatic Picture Transmission Ground Equipment. By C. H. Vermillion (NASA SP–5080).

Mariner-Mars 1969: A Preliminary Report (NASA SP–225).

Surveyor Program Results (NASA SP–184).

Earth Photographs from Gemini VI through XII (NASA SP–171).

In Fiscal Year 1969, more than 1.6 million copies of NASA publications were distributed. In addition, more than 3 million microfilm copies—microfilm carrying images for 60 pages each—were also sent out. The attached table gives a breakdown of our report distribution statistics:

NASA REPORT DISTRIBUTION STATISTICS FOR FISCAL YEAR 1969

Formal series (printed)	Titles	Copies	Recipient organizations
Special publications	69	241,500	2,573
Technical notes, technical reports, contractor reports, technical translations	945	1,417,500	2,573
Technical memorandums	202	30,300	150

Microfiche copies [1]	Titles	Microfiche cards	Copies	Average number of recipients
Not-printed NASA documents	10,216	17,360	3,211,500	230

[1] 4 by 6 sheet microfilm; each sheet carries images for 60 pages.

Mr. CURTIS. Is it also true that if the United States had not made this space effort and if we fail to carry on with it, no country in the free world could take over that effort? There is no other country in the free world which can do it. Is that not true?

Mr. GOLDWATER. It is true if we put in the word "soon."

Mr. CURTIS. Or alone.

Mr. GOLDWATER. I think the Russians could, if they directed all of their talents toward this one project, possibly in time take over where we would leave off, but it would require them to do their space work in a different way than they are doing today, and I do not think they could change.

Mr. CURTIS. I concur in the observation about Soviet Russia, but my question was that our efforts could not be duplicated by any other nation in the free world.

Mr. GOLDWATER. Not as of today.

Mr. CURTIS. No other free country could have made such progress in space if it were not for the United States of America. Is that correct?

Mr. GOLDWATER. The Senator is correct.

Mr. CURTIS. I thank the Senator.

Mr. GOLDWATER. We have accomplished our first major goal in space. The question now is whether we will exploit this capability and gain a return on our investment or we will allow this new resource to lie dormant and eventually waste away.

It is unthinkable to me that we should ever consider a course of action that would deny our country the continued leadership in space that we now enjoy. This leadership was not easily come by. It took over 10 years of hard work by more than 300,000 people in government, in industry, and in the academic community who worked together as part of the Nation's investment in man's most ambitious engineering and scientific project. These thousands of people were trained, solved innumerable problems, built the facilities, invented the tools, developed the hardware and the operational capability to fly space missions. This overall capability, developed at such a cost of dollars and human energies, is now available to continue the important tasks that lie ahead in space. It is illogical not to proceed and obtain the dividends from this great national resource.

The NASA legislation before us today details a responsible and intelligent approach to the future of this Nation's space efforts, and I strongly urge that it be passed. This bill lays the basic groundwork for a balanced program of the 1970's without crash deadlines to meet and contains provisions for change of directions if national priorities dictate that changes should be made.

To my way of thinking, one of the most important aspects of this authorization request is the sensible approach that NASA has taken in an attempt to lower the cost of space flight operations that involve new transportation systems, payloads, and facilities. The first elements of such a system that would ultimately provide substantially increased benefits from activity in earth orbit per dollar invested are the space shuttle and space station. The expanded, more economical flight activities made possible by the revolutionary and advanced systems will in a very concrete way open the arena of space to increased activity at delivery costs considerably less than presently required.

Since the shuttle is essentially a transporter and cargo vehicle, its utility would not be restricted to a single program or a single agency. Rather, it is expected that at the very earliest opportunity both NASA and the Department of Defense space programs would benefit from this new system. The development of the space shuttle would also have a tremendous impact on the aeronautic community since the shuttle basically weds the rocket and the airplane. There would be a very high level of technology transfer stimulated by the research that went into the development.

But perhaps more important than any of the many reasons for moving ahead with the space shuttle and space station studies is the awesome fact that the United States cannot hope to maintain its leadership in the realm of space unless we establish the feasibility of these advanced systems.

We have heard arguments that the shuttle and station are the first steps in a commitment to land men on Mars. This is not so. These systems are intended for use in earth orbit. It is true that the shuttle and station, because of their long-range commonality, might be used at a much later time as parts of systems extending farther out into space. But a decision on the Mars landing need not be made prior to the mid-1970's.

In fact, if I remember correctly, I think Dr. von Braun said it would be 1982 before Mars came close enough to the earth to think of putting man up there.

Let us not deny the future to generations that will follow because of our limited vision of today. This Nation's space accomplishments to date have provided the world with a new and refreshing outlook. It has nurtured and developed leaders of outstanding quality and ability—the astronauts who have become the world symbol of courage and true grit; the managers who have mounted and made work the most ambitious undertaking ever attempted; and the engineers and technicians whose skills and dedication have forced technology to an unprecedented level. Only by authorizing the funds necessary for new and advanced space systems can we ever hope to continue and strengthen this established base of excellence.

The bill before us today will make it possible to take the first steps toward this goal. It is legislation that is sound and future-oriented and legislation that I most wholeheartedly support.

Mr. President, in conclusion, because I have mentioned the importance of education, I ask unanimous consent to have printed in the RECORD comments before the committee by Dr. Thomas Paine on the impact of the space program on education.

There being no objection, the statement was ordered to be printed in the RECORD, as follows:

IMPACT OF SPACE PROGRAM ON EDUCATION

The exploration of space has profound and continuing effects on U.S. education.

The shock of the first Sputnik prompted a dramatic re-evaluation of our scientific educational practices. Curricula changed. New maths and physics appeared. Instruction in other sciences was radically altered and updated, not only in expected evolutionary patterns, but also as a direct result of the flow of new knowledge. The results of this country's space programs and the needs of scientific and technological education now converge in a continuing dialogue that infuses new knowledge into the Nation's classrooms.

In the early days of space exploration Dr. Lee DuBridge said, "one hundred years from now the new kind of knowledge attained in space research will surely have paid untold, unforeseen, and unexpected dividends. Already, the dawning of the space age had impelled Americans to seek to improve their schools. That alone may be worth the cost of all our space rockets."

NASA employs a literal interpretation of the Space Act's directive to increase the scientific and technical capability of the Nation. We regard our undertakings as incomplete until their results have been made available to the country's elementary and secondary schools. Programs have been developed to facilitate the transfer of this new knowledge.

Working with universities, for example, NASA compiles the relevant information its programs produce into curriculum supplements (not textbooks) which are made available to teachers. This program helps fill the gap between the appearance of new knowledge and the use of that knowledge in textbooks which are a long time in preparation and acceptance. The agency also works with current state school curricula.

The general approach of the agency's primary and secondary school programs is to offer teachers relevant information in useful formats. It is the teacher who makes the judgment on how and when to employ this new knowledge in the classroom. Central to this approach is an active program of NASA assistance to institutions of higher learning, state and local school authorities and professional associations in the conduct of courses, institutes and workshops for pre- and in-service teachers.

There is one major exception to the teacher-oriented NASA educational program: the Spacemobile offers lecture demonstrations directly to students. Nearly all Spacemobile schedules are established by state boards of education. The program reaches about 3 million students annually.

Descriptions and results of educational programs follow:

CURRICULUM RESOURCES PROGRAM

Provides teachers with publications which relate aerospace results to the several subjects, grades K–12. Useful also to curriculum and textbook writers who wish to update content with recent and relevant aerospace developments. Basic is its purpose of providing a stimulus and a model for similar non-NASA aerospace curriculum projects. The supplements are published both as books covering several topics and as leaflets dealing with a single topic; appropriate film loops are being prepared.

Examples are:

Teaching to meet the challenges of the space age.—For elementary teachers. Project cost $1,000. Published 120,000 copies. Being updated by Center for Urban Education, New York City, a USOE Title IV project.

Introducing children to space, the Lincoln plan.—For elementary teachers. Project cost $8,950. Published 52,500 copies. Well regarded nationally. Served as starting point for USOE Title III aerospace curriculum projects in the schools of Eastern Nebraska.

The planetarium, and elementary school teaching resource.—Project cost $7776. Published 60,000 copies. For elementary teachers and planetarium directors to relate aerospace to intermediate grade science.

Aerospace curriculum resource guide.—Project cost $23,000. Published 13,000 copies. For teachers of all subjects, Grades K–12. Developed for Massachusetts Schools by Massachusetts State Department of Education. Used nationally. Distributed by Headquarters ROTC to its high school units as guide for developing cross-disciplinary aerospace teaching. Distributed by the Foreign Policies Association to leaders in elementary school social studies teaching.

Space resources for the high school: Industrial arts resource units.—For the secondary school industrial teachers. Project cost $18,700. Published 40,500 copies. Widely used nationally. Stimulated curriculum enriching project of the American Industrial Arts Association. Used in course-of-study updating by States of Georgia and Florida, and Commonwealth of Puerto Rico.

Space resources for teachers: Biology.—Project cost $24,950. For secondary school biology teachers. Published 5,000 copies. Professional interest in it is high with seven regional and national conventions of the National Science Teachers Association devoting concurrent sessions to discussing it.

Space resources for teachers: Space science.—Project cost $11,615. Published 5,000 copies. For secondary school science teachers. Covers space implications for biology, physics, chemistry, and mathematics. Has had concurrent sessions of five regional and national conventions of the National Science Teachers Association devoted to it.

EVALUATION

The *Bulletin* for January 1970 of the National Association of Secondary School Principals, under "Editor Comments," in calling attention to NASA secondary school curriculum bulletins, writes: "To help close the gap between what is happening on the frontiers of science and technology and what is being taught in classrooms, the National Aeronautics and Space Administration has recently published four books that will be valuable additions to the professional libraries of secondary school teachers."

The January 1970 number of *Social Education*, the periodical of the National Council for the Social Studies, in an article "Space Age Curriculum" states ". . . the curriculum publications of the National Aeronautics and Space Administration (NASA) are far ahead of anything educational publishers have produced."

TEACHER EDUCATIONAL SERVICES

Includes assisting institutions of higher learning, professional associations, and regional, state and local school authorities to provide pre-service and in-service teachers with sufficient understanding of America's aerospace activities to adapt what is appropriate to their teaching. The services include providing NASA's publications, curriculum supplements, films, speakers, spacemobile lectures, and tours of installations, and also organizing and conducting courses, conferences, institutes and workshops.

The NASA Teacher Educational Services reach annually, 25,000 teachers in 600–700 courses, institutes and workshops.

The reason for high teacher interest in aerospace is twofold: America's program in aerospace is (1) generating new knowledge; and (2) motivating student learning in science and all subjects.

Evaluation

In evaluating NASA's teacher educational services, the Council of State Science Supervisors recently reported that (1) 85 percent of the teachers who attended aerospace workshops stated that they introduced aerospace into their teaching in subsequent semesters; (2) that 76 percent of the students stated they understood better science principles taught in class because they had been introduced by teachers through an aerospace frame of reference.

NASA provides no funding for either students attending or institutions sponsoring teacher educational projects in aerospace.

YOUTH SERVICES

1. Youth science congresses:

Organize and conduct, through the National Science Teachers Association, the Youth Science Congress Program. In 1969, twelve Congresses were conducted at nine NASA Centers plus St. Louis, Minneapolis, and Denver. To each are invited 20 youngsters who are selected on the basis of their science research papers.

At each Congress the students present their papers to an audience of peers and *scientists* from NASA, universities and industry. Give and take discussion follows.

The program is in its seventh year. A total of 1,000 students have participated.

2. Science fairs:

NASA also participates in the annual International Science Fairs sponsored by Science Services, Inc. We provide honorary awards such as certificates, NASA publications, and field trips to NASA Centers.

3. Other:

NASA provides publications, films, speakers and tours to such organizations as Boy Scouts, National Association of Rocketry, Junior Engineering Technical Society, etc.

Evaluation

A preliminary report of a survey of participants in the Science Congresses and Science Fairs indicates that about 90 percent of them were influenced in their choices of careers in scientific and technical fields.

CAREER GUIDANCE

NASA has developed special publications on aerospace jobs and careers at the elementary, junior high, and high schools levels. These are used in responding to an average of about *600 such inquiries a month from students and teachers.*

SPACEMOBILE PROGRAM

The Space Science Education Project, also called "Spacemobile," provides lecturers and consultants for school assemblies, class-

rooms, curriculum committees, and teacher workshops in aerospace education.

In Calendar year 1969:

Total live audience	3,306,410
Total live lecture/demonstrations	14,870
Estimated TV audience	20,391,500

Evaluation

The Council of State Science Supervisors reports that this program affected the career choices of 20 percent of college students polled; and that 45 percent of high school and 42 percent of college students polled reported an increased use of libraries and their needs for space-related reference materials.

Scheduled by the States, the Spacemobile units are in great demand, being booked into schools a year in advance. The programs have been reported by school administrators as being highly motivational and stimulating to students.

PUBLICATIONS

NASA produces and distributes informational/educational publications for the general public and for responses to teacher-student requests. They provide orientation, background and knowledge about NASA projects such as *Apollo, Report from Mars, Putting Satellites to Work, Space Physics and Astronomy,* and several others.

NASA Facts, 4- to 8-page pamphlets or wall charts for classroom use and libraries. A special "Science Series" is directed at the secondary school teachers and students. Others are being prepared for use in the lower grades. Examples are: *The Countdown, Weightlessness, Solar Cells, Orbits and Revolutions of Spacecraft.*

Evaluation

Many letters from teachers and students indicate that these publications serve to stimulate interest and motivate teachers to keep abreast of developments in space science and technology.

AUDIO-VISUAL MATERIAL

NASA develops and distributes 16mm sound films on NASA research programs, such as *Living in Space, Electric Propulsion, A Look at an Old Planet, Men Encounter Mars, Seeds of Discovery,* and others.

Film strips and slides on a variety of subjects such as *Geology from Space, Space Food, Men to the Moon,* etc.

Eight millimeter film "loops" on single concepts for science classroom use.

Audio and video tapes and short film clips for educational television and classroom use.

Evaluation

These audio-visual materials are in continuous demand by schools, colleges, and educational TV. Report cards indicate they are of great interest and educational value.

Mr. GURNEY. Mr. President, I support H.R. 16516, the fiscal year 1971 NASA authorization bill.

The single target of the last decade in space was the manned lunar landing. We went into space because a Nation on whom world leadership had developed could not afford to mount a second rate, second best effort. Our achievements have been spectacular and the payoffs, many of them unpredictable a decade ago, have been enormous.

Now we must chart a new course for the next decade in space.

In the seventies, we will have a new approach to our space program. We have no specific and fixed goal in this decade as we had in the last; the moon landing has been made—the overall goal of the sixties has been realized; the achievements of the seventies will be no less real, but certainly they will be less glamorous, and less spectacular.

Our country entering the seventies is certainly a different country from the America that entered the sixties. We hear a lot of talk about a new set of national priorities. We certainly cannot properly afford to neglect our domestic priorities. I certainly do not suggest that we can or that we should. At the same time, I wish to defend the space program. I suggest that we can meet our domestic priorities and go ahead with a bold and ambitious space program simultaneously. In our haste to reorder priorities and to put our domestic house in order, I do not think we should neglect the space program. Frankly, I never thought that we would have to defend the space program; I never thought there would be detractors of the space program. Almost alone among Federal programs in the past, space was an area that received almost unanimous, bipartisan support. That happy day has gone. I should say that I understand and appreciate the position of the distinguished Senator from Minnesota and his desire to reduce expenditures for the space program. While I disagree with him, I respect the sincerity of his position and I do not wish to detract from my colleague in any way.

At the same time, I must point out that any cut in the already austere NASA authorization at this time would be, in my judgment, a terrible mistake.

Mr. President, I was greatly encouraged when the report of the President's Space Task Group was released last fall. Let me quote from the introduction to that report:

The Space Task Group in its study of future directions in space, with recognition of the many achievements culminating in the successful flight of Apollo 11, views these achievements as only a beginning to the long-term exploration and use of space by man. We see a major role for this Nation in proceeding from the initial opening of this frontier to its exploitation for the benefit of mankind, and ultimately to the opening of new regions of space to access by man.

I further quote from the conclusions:

The landing on the moon has captured the imagination of the world. It is now abundantly clear to the man in the street, as well as to the political leaders of the world, that mankind now has at his service a new technological capability, an important characteristic of which is that its applicability transcends national boundaries. If we retain the identification of the world with our space program, we have an opportunity for significant political effects on nations and peoples and on their relationships to each other, which in the long run may be quite profound.

The Space Task Group Report contained options I, II, and III, which could be conducted under varying degrees of funding restraints.

NASA's original recommendation to the Bureau of the Budget provided for implementation of Program Option II. The budget authority for fiscal year 1971 requested for this purpose was about $4.5 billion. This was not what NASA wanted, but in their words was "an optimum balance" a compromise between technical progress possible and the Governmentwide fiscal constraints.

The Bureau of the Budget approved only $3.3 billion, which is now in the bill before us for consideration. The bill before us is over $1.6 billion less than the amount considered necessary by NASA to meet the Space Task Groups recommendations and to maintain a viable forward-looking space program. I would have preferred the $4.5 billion figure; I think we can only reduce that figure at the risk of killing the program.

I am particularly concerned about the heavy reductions that have already been made in the Manned Space Fight program. To support option II contained in the President's Space Task Group study, a requirement for $2.1 billion for Manned Space Flight activities in fiscal year 1971 was submitted by NASA to the Bureau of the Budget. During the budget review process, the Manned Space Flight level of effort was reduced to $1.4 billion, a reduction of $635 million. At this reduced level, huge gaps in the manned space flight level of operations will occur. The Apollo 20 mission will be cancelled; the Apollo Applications program—Skylab—will be delayed by 6 months to late 1972; the Apollo 18 and 19 lunar missions will be delayed until 1974. The limited budget has caused the launch schedule to be stretched out to a maximum of two per year with only one flight in 1972, and none in 1973.

We are already witnessing the dismantling of one of the greatest technological capabilities ever drawn together in the history of man. Austerity measures levied against the space program these past two years are forcing the disbanding of the tremendous aerospace team built up during the sixties and the closing of some of our finest laboratories and contractor-operated facilities.

Already our aerospace team—industry, civil service, and universities—has dwindled from 420,000 people 3 years ago, to 190,000 today. By the end of fiscal year 1971 the number of people engaged in space activities will drop to an estimated 144,000. The Electronics Research Center at Cambridge, Mass., is in the process of being closed; the Mississippi Test Facility will be placed in a mothball status in December of this year; the Michoud Assembly Facility in New Orleans will revert to a standby status early next year; the White Sands Test Facility will be closed in June of next year.

Many of our other contractor operated plants are rapidly phasing down. We recognize that these slow downs are causing serious economic problems in those regions of the Nation affected—that that is not the most important consideration—vital as it is to the people and the State involved: more important in my opinion is the long run loss to the Nation.

The NASA authorization before us today is the lowest it has been since 1962. NASA is the only Federal agency which has had a continually decreasing budget in recent years.

We tend to overlook that in the last 10 years, while defense spending has gone up by about 73 percent, domestic social program spending has increased 222 percent, that the space program has declined by about 40 percent overall.

As Dr. Thomas Paine, NASA Administrator said in his testimony before the Senate Aeronautical and Space Sciences Committee:

Without repeating the obvious fact that indeed all NASA's dollars are spent on earth, my reply to these questions is that we are getting more than our money's worth. "We must press forward in both the space program and here on earth. *These are not mutually exclusive, but mutually supporting enterprises.* We have been spending more and more tax dollars to effect *social* change—in schools, in welfare, in health, and in poverty programs. These involve a *redistribution* of existing *resources.* We have also spent tax dollars in NASA effecting *technological* changes. This contributes to the creation of new resources. Some have complained that we are doing too much in space, with so many unsolved problems here on earth. The positive approach is not to do less in space but to do more on earth and do it *better.* We must continue space progress while at the same time applying the lessons we have learned from our space achievements to other U.S. needs. If this nation can go to the moon it can meet and must do better in meeting our other challenges. America's space achievements surely increase, not decrease, our hope, our ability, and our national resolve to face and overcome new and chronic earth problems.

Our space effort over the decade past has cost this Nation less than one-half of 1 percent of our gross national product. In return, it has made a major contribution to the growth of our gross national product—I think that point is self evident but let me amplify on it: one way to measure this contribution is to compare the growth in national wealth and productivity since 1959—when we launched our space effort.

The total of the annual gross national product over the past 12 years was about $8 trillion dollars. Of this amount, $2.4 trillion was real growth over the 1959 level. Responsible economists estimate that approximately 50 percent of this growth can be attributed to the stimulus of new technological knowledge from research and development investments. Twenty-five percent of the Nation's total expenditures on research and development was carried out under our space program. That knowledge comes from research.

The current high level of U.S. technology would be substantially lower without the technological transfer and growth throughout the major U.S. industries which in no small measure resulted from advances required; in every technical discipline in order to get to the moon. An excellent example is the rapid growth in the U.S. computer industry which does about $8 billion worth of business a year, and pays the highest average wages of any U.S. industry.

Let me point to the aero-space industry itself: although it did not exist as such 15 years ago it is now America's largest manufacturing industry. It was one of the greatest producers of national wealth. It employs over a million people and pays them more than $14 billion in annual wages. This growth, this development, this wealth would not have been possible without substantial national investment in the past. It cannot continue unless we are prepared to keep that investment up at a realistic level into the future.

Mr. President, I am not going to catalog the byproducts of our space program—we know them: weather predictions, medicine, oceanography, pollution control, transportation, communications, education, and pure science. As I say, we know them. Let us not forget the debt we owe to space.

As I said before, the space program means more than simply hardware, space vehicles, and lunar landings. We cannot accurately estimate the advantages it has brought to our country in esteem, in respect and for our abilities, our institutions, our determination, and our technological precision.

I do not know how to express in dollars the human value of new horizons that have resulted from the space program's demonstration that free men of competence and good will can work together within our institutions to achieve almost impossible goals.

I believe space programs will continue to act as a spur to other parts of our society. NASA has shown how to create a uniquely American blend of governmental, industrial, and academic research competence and achievement.

I know that many people who are now urging cuts in our national space program say that funds formerly devoted to the space program can better be used to meet our social needs. I suggest that our space program does much more than launch space vehicles. It aids the solution of many of our pressing problems. We need improved communications at a lower cost. The space program helps in that.

We need to improve our ability to manage our natural resources, to train and reward our talented scientists and technicians to develop procedures for complex governmental programs. Our space program contributes every day.

I suggest that if we are to continue to progress as a nation, we must remain in the forefront of technological development. Since the beginning of the industrial revolution, our Nation has devoted its competitive advantage through technology to maintain its world position in the marketplace. Both in aeronautics and space flight development, NASA is contributing to this advance of technology. Consequently, this imposes one of the most important reasons for continuing to support an aggressive national space program.

Mr. CURTIS. Mr. President, all of us frequently hear the allegation that the public is not interested in the space program. This charge carries the implication that this so-called lack of interest translates itself into a lack of support.

The facts are quite otherwise. The general public's interest in the U.S. space program is very high—almost incalculable. Measurements cannot be precise, of course. But there are some measurements of public interest which leave little doubt that the interest is as great as there has been in any single effort in American history.

Last summer more Americans—and, indeed, more people throughout the world—followed the manned lunar landing than any event in history. The worldwide figure reaches almost 1 billion who heard or saw the event itself through a worldwide satellite communication network. A large percentage read something about it, or heard a speaker, or saw an exhibit, or purchased something—a stamp, a book, a recording—about it.

Interest today is at its highest peak in the 11-year history of the space program. At my request, NASA supplied me with the following information. The figures are for calendar year 1969, but the trend in January, February, and March is higher than the highest months of last year.

It is an interesting fact that while the Apollo program has created the greatest amount of interest, the total public reaction appears almost equally divided between the Apollo program and a combination of all other programs—an almost even 50/50 split.

Public mail	
a. In calendar 1969, general inquiries, numbered	485,300
b. Mail directed to the Astronauts numbered an additional	483,530
Total public inquiry mail	968,830
c. In (a) above, mail from the educational community (students and teachers) was	205,100
d. In (a) above, mail from foreign sources was	68,000
Publications	
In response to requests during CY 1969, NASA distributed free publications totalling about	5,000,000
Incomplete reports on 53 titles of NASA publications (42 non-Apollo) show that the Superintendent of Documents, GPO, has sold copies totalling over	500,000
In little more than six months since NASA picture sets have become available, Sup Docs has sold more than	500,000
And has now printed for sale more than	1,000,000
Exhibits	
In Washington alone during CY 1969, exhibit requests totalled	619
Requests during the first two months of CY 1970 totalled	120
During 1969, NASA was able to fill exhibit requests numbering	683
Exhibits were viewed by million	37.6
In May 1969, the NASA exhibit at the Paris Air Salon drew an audience of approximately	500,000
For Expo '70 at Osaka, the U.S. Pavilion which features a Space and Lunar Rock exhibit is expected to be seen by at least million	15
Request for displays of Lunar Samples exceed	1,000
Motion pictures	
In CY 1969, NASA titles in circulation for general public use was	76
The number of separate prints loaned was	84,231
Audience for these, excluding TV, was estimated at million	9.8
Apollo films sold through the National Archives have exceeded	1,600
Television stations requested and were furnished prints totalling	7,711
Which were viewed by an audience of million	248.5
Educational audience totalled million	5.5
In showings of NASA films numbering	51,622

Speakers

In calendar year 1969, the number of speeches delivered by NASA personnel to non-technical groups was	2,049
The audience for these was	265,000
Speech requests received in Washington numbered	529
In 1969, Astronaut appearances requests exceeded	5,000
The number of Astronaut appearances was	513

Two crews have made round-the-world visits, covering a total of 42 different countries, Guam and the Canary Islands (some twice).

Visitors

Visitors to NASA facilities in CY 1969 numbered over	2,600,000
Of this number, foreigners accounted for about	12,000

Because of public demand, NASA is setting up visitor facilities and programed tours where they have not existed until now, such as Langley Research Center, and to improve or enlarge facilities at other Centers, such as Goddard.

And what about the news media? Do the press, radio, and television have an interest in the space program? The facts are overwhelming. Few stories in our Nation's history have been so thoroughly, accurately and well covered. Here again, I have some NASA statistics that indicate the scope of interest by the news media:

NASA received by mail or telephone in CY 69, 112,643 inquiries for story information, interviews, etc., not including queries during the launch activities.

Bona fide news accreditation for Apollo launches:

Apollo	Total	Foreign	Foreign countries
7	646	26	11
8	1,500	200	24
9	1,403	63	13
10	1,519	230	25
11	3,497	812	56
12	2,262	388	53

U.S. space program and the mass media

*News film—the television networks and local stations received the following footage on these major launches:

	Average
Previous manned launches	15,000 ft.
Apollo 7	18,000 ft.
Apollo 8	21,238 ft.
Apollo 9	18,198 ft.
Apollo 10	22,186 ft.
Apollo 11	34,081 ft.
Apollo 12	28,117 ft.

*Still photos:

Print distribution agencywide

1969:	
News photos released	7,575
Prints distributed	1,167,559

NASA also provides four major feature services. These services were developed as the result of requests from media asking for feature material as opposed to news material—and are clearly labeled as such. The requestor receives a service and is periodically taken off the list unless he tells NASA he desires to continue.

In calendar year 1969, approximately 55 percent of the feature material related to Apollo, and the rest reported on other aspects of the space program.

It is important to note that the subscriber is told that these materials are not news, but comprise a selection of subjects NASA feels important to disseminate.

*Television:

Total U.S. stations on-the-air	840
Total subscribers to NASA's Aeronautics and Space report (monthly, 4½ minutes)	734

This monthly report, a TV newsreel, is seen in one or more of the top 50 U.S.-TV markets (by number of TV households) covering all 50 states.

Television stations showed (in CY 69) a total of 7,710 28-minute NASA films covering all aspects of the program. Audience report estimates, 347 million.

*Radio:

Total U.S. stations on-the-air	6,600
Total subscribers to one or more NASA periodic programs	3,200

"The Space Story"—Weekly, 4½ min.

"NASA Special Reports"—Monthly, 14½ min.

"NASA Space Notes"—Qtr. 10 one-min. spots.

"Audio News Features"—Pre-manned launch interviews.

NASA subscribers include at least one station in each of the top 50 radio markets, all 50-states, Puerto Rico, Virgin Islands, Armed Forces Network, Voice of America and Radio Free Europe.

*Newspapers:

Total U.S. English Language dailies	1,972
Combined circulation (million)	61
"Space Sheet" subscribers	954
"Space Sheet" circulation (million)	41.6

"Space Sheet" is a feature page published every other week.

The PRESIDING OFFICER. The question is on agreeing to the committee amendment in the nature of a substitute.

Several Senators addressed the Chair.

The PRESIDING OFFICER. The Senator from Minnesota is recognized.

Mr. MONDALE. Mr. President, I ask unanimous consent that I be permitted to observe the absence of a quorum without losing my right to the floor.

The PRESIDING OFFICER. Without objection, it is so ordered. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. MONDALE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. HART. Mr. President, will the Senator yield?

Mr. MONDALE. I am happy to yield to the Senator from Michigan.

Mr. HART. Mr. President, in the event that we are still under the Pastore rule, I ask unanimous consent to proceed for 3 minutes on another matter.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDER FOR PRINTING ANTITRUST AND MONOPOLY SUBCOMMITTEE ACTIVITIES REPORT FOR 1969—REPORT OF A COMMITTEE—INDIVIDUAL VIEWS (S. REPT. NO. 91-841)

Mr. HART. Mr. President, pursuant to Senate Resolution 40, 91st Congress, first session, from the Committee on the Judiciary, I submit a report entitled "Antitrust and Monopoly Activities, 1969," made by the Subcommittee on Antitrust and Monopoly. I ask unanimous consent that the report be printed, together with the individual views of the Senator from Nebraska (Mr. HRUSKA).

The PRESIDING OFFICER (Mr. EAGLETON). The report will be received and printed, as requested by the Senator from Michigan.

THE GAMBLE HAS FAILED

Mr. HART. Mr. President, the Cambodian gamble, which I have opposed, has failed to this most important extent:

Our Nation is more divided than before.

Four Kent State students are dead.

The first was certainly predictable, and while we could not have guessed the place, we might have predicted the second.

Any possible military gains from the invasion of Cambodia, tentative at best when considered in isolation, are meaningless when measured against these clear, predictable and present losses.

Congress should act to make certain the President winds down our involvement in Southeast Asia. The first step is to get out of Cambodia now, and then speed up withdrawal of troops from Vietnam.

At stake is not the success or failure of a military plan, but the success or failure of the experiment called the United States.

Regardless of its military might, a free nation cannot long exist so deeply divided.

Regardless of its military might, a free government cannot govern without the consent of the governed.

That was the basis for the start of the experiment, and to alter that basis would be to drastically alter the nature of the experiment.

I thank the Senator from Minnesota very much.

Mr. MONDALE. I thank the Senator from Michigan, and wish to express my support for the views he has just so eloquently stated.

NASA AUTHORIZATIONS, 1971

The Senate continued with the consideration of the bill (H.R. 16516) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

AMENDMENT NO. 612

Mr. MONDALE. Mr. President, I call up my amendment No. 612, and ask unanimous consent that its reading be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. MONDALE's amendment is as follows:

On page 11, line 11, insert the following: "Strike '$515,200,000' and insert in lieu thereof '$405,200,000'."

Mr. MONDALE. This amendment would strike $110 million of authority from the pending authorization bill for

the space program, deleting such funds from the amount designated for the design and definition of the space shuttle station. It would reduce the line item described as "Space Flight Operations" from $515,200,000 to $405,200,000.

Mr. President, this item appears to be a fairly innocent one, but it really involves a fundamental and profound decision about the future direction of the manned space flight program in the post-Apollo era. This is, in fact, the next moon-type program. It could cost the same as the flights to the moon. It could cost more; it might cost less. No one knows. The Space Agency estimates that it would cost $14 billion to complete the planned shuttle and space station program, which will be begun by this innocent $110 million authorization.

There is no question but that this is a fundamental, basic decision which is now being made by Congress and the administration. It is so fundamental that, for the first time in the history of the House of Representatives Space Committee, there was a basic fight within the committee—led by my distinguished colleague from Minnesota, Representative KARTH—to strike $190 million for this program out of the House authorization on this same proposal.

That amendment to strike those funds was rejected by a tie vote of 53 to 53. I think this vote expresses the deep concern found in the House of Representatives and in the House Space Committee—and which I hope is also present in the Senate—and expressed widely throughout this country about the future of the space program and the relevance of these gigantic spending programs to the health of the American economy.

If the Space Agency is able to proceed as planned with this space shuttle system, they will spend at least $14 billion, and I expect far more; and they would expect, by the year 1979, to build the space program from an annual spending level of about $3.5 billion to a spending level of $6.8 billion, thus nearly doubling the size of this Nation's space program.

Furthermore, instead of increasing the proportion of the space budget in the area of unmanned instrumented flight, which is safer and less expensive and which many scientists believe to have the highest scientific yield, the ratio of space budget applied to manned flight as distinguished from unmanned instrument flight would shift dramatically; and some believe that by 1979, 75 percent of the space budget would be in the manned space program—the very area where the scientists of this country feel the biggest waste and the greatest risks exist.

There are two basic aspects of this space shuttle/station project. The first is to develop a chemically fueled two-stage reusable shuttle, which will operate between the surface of the earth and low earth orbit. The second is to develop a space station module as a permanent structure in orbit designed initially for the support of six to 12 occupants; ultimately, NASA hopes to erect a space base by joining together these space station modules, and this base will be capable of supporting between 50 and 100 men in earth orbit.

The $110 million proposed for this project in the Senate bill—and the $190 million already approved by the House—is for preliminary design of both the shuttle and the station. This hardware development phase thus constitutes the first major step toward the development of the shuttle and station. Indeed, the fiscal year 1971 NASA authorization marks the emergence of the space shuttle/station as a clearly defined project for congressional approval.

In leading the fight against the space shuttle/station in the House, Congressman JOSEPH KARTH of Minnesota—chairman of the Subcommittee on Space Science and Applications and a strong supporter of our space program—pointed out that the decision to approve or disapprove this project constitutes a crucial turning point in the U.S. space program. For the space shuttle/station is the beginning of a new phase of the manned space program, a phase much larger in scope than the Apollo moon-landing program.

The significance of this project for the future of the space program is best described by the House committee report which states:

> During the last half of this decade, this country will commence a new epoch in manned space flight.

The report makes other statements along the same line.

The basic issue before us, then, is whether or not we are ready and willing to fund a new epoch in manned space flight. I do not believe that a majority of our citizens are willing to support a massive new effort in space at this time. Furthermore, I do not believe that there is sufficient justification for proceeding with the development of the space shuttle station in fiscal year 1971.

Such justification is imperative in light of the high cost of this project. The $110 million recommended by the Senate committee—and the $190 million approved by the House—may not seem to be a great deal of money to a nation long accustomed to multi-billion-dollar military and space programs. But this money is only a small part of the project's ultimate cost.

NASA's preliminary cost estimates for development of the space shuttle/station total almost $14 billion. However, NASA officials readily concede that these preliminary estimates are unreliable. Indeed, as Congressman KARTH notes, preliminary cost estimates in the space field are uniformly low, often only a fraction of ultimate cost. It is quite likely, therefore, that the ultimate cost of this project will greatly exceed $14 billion.

For this reason alone, I believe it would be unconscionable to embark on a project of such staggering cost when many of our citizens are malnourished, when our rivers and lakes are polluted, and when our cities and rural areas are decaying.

Mr. President, what does $110 million mean? Some say it does not mean much, not enough to stop inflation or to balance the budget or to reduce taxes. But what else could we do with $110 million?

Congress has been rapidly increasing funds for cleaning up our polluted waters, but it is generally agreed that air pollution is a real threat to the health and survival of our citizenry. Yet, the administration has budgeted only $104 million in fiscal 1971 to clean up the air on which our lives depend.

Can it really be argued that it is worth more to spend $110 million to start a $14 billion minimum cost program for a space shuttle than to try to do something about the air that is choking us in this Nation? But that is what the two budget allocations involve.

In fiscal year 1970, we appropriated $84 million for the special milk program. That is to provide nutritious half-pints of milk to the schoolchildren of this country to contribute to their health and their nutrition. The President has proposed that we terminate this program, eliminate it, in order to save the $84 million. On the other hand, he supports $110 million for a space shuttle station.

What are our values? What do we think is more important? The administration tells us that we can afford only $380 million for the Nation's Headstart program. This figure will not provide us in 1971 with the same program that was provided in 1970.

One of the most effective programs in our country is the OEO legal services program, for which we can only spend $55 million—half of what we propose to spend for designing the space shuttle station program.

We have had to turn hundreds of thousands of our brightest young people away from college and away from vocational schools because we cannot afford the student assistance programs, the educational opportunity grants, and the rest. We have had to slow down on Headstart programs. We have had to say "no" to early childhood programs. We have had to say "no" to health programs, health research, and the National Science Foundation.

Running all through these human programs, we have been saving $50 million here and $100 million here because we say we cannot afford it. Yet, we come up with a program for $110 million which, in my opinion, does not approach the importance to the health and quality of American society of the other efforts that many are opposing.

NASA attempts to minimize this enormous cost by arguing that the space shuttle could reduce the cost per pound of payload in orbit by a factor of 10. According to a House supporter of this project:

> Instead of paying between $500 and $1,500 a pound to get an object in space, we will hopefully be paying less than $50 a pound by use of this Space Shuttle.

But this reasoning overlooks the facts that it will cost billions of dollars to develop the space shuttle. Once developed, it has been estimated that the shuttle will cost hundreds of millions to procure, whereas the launch vehicles to be replaced by the space shuttle—Delta Titan—cost from $3.5 million to $20 million for each vehicle. Given these extremely high development and procurement costs, the alleged "savings" by the use of this shuttle will occur only if the scope of U.S. space activities is greatly expanded in future years.

Thus, NASA officials have testified that they anticipate a minimum of 30 flights per year by NASA and an equivalent number in support of DOD programs.

Representative KARTH, in the House debate, set forth very clearly the misleading characteristics of the argument that there are savings built into the construction of the space shuttle program, and I ask unanimous consent that his remarks be printed at this point in the RECORD.

There being no objection, the remarks were ordered to be printed in the RECORD, as follows:

During the entire decade of the sixties, NASA exceeded 30 launches per year only once—36 in 1966—including Scouts and Saturn V's which are not to be replaced by the space shuttle. Assuming the space shuttle's payload capacity (of placing 50,000 pounds in orbit) would be fully utilized on each of the projected 60 yearly flights, this adds up to 3 million pounds of payload launched into orbit each year.

How do 3 million pounds of payload in orbit compare with the space program of the past? In terms of cumulative payload launched, 1969 was NASA's biggest year with 442,358 pounds, over 97 percent of which was attributed to the four Apollo flights.

Mr. MONDALE. Like Representative KARTH, I question whether the United States can afford such an ambitious program and whether the American taxpayer would be willing to support it. Rather than testing the taxpayer's endurance, we should follow the course recommended by seven members of the House Committee on Science and Astronautics—that is, cost effectiveness—studies should be conducted comparing the operation of the space shuttle with the continued use of existing expendable launch vehicles before sizable amounts of money are applied to the shuttle development project.

Aside from the potential cost of both the shuttle and station, there are other reasons for opposing this project.

To begin with, the feasibility of a space shuttle/station has not been demonstrated. NASA acknowledges that design and development of the space shuttle represents a new and formidable technical challenge, which will require maximum innovation on the part of the aerospace industry. Congressman KARTH pointed out that before the space shuttle can become a reality, many difficult technological advances must occur in such areas as configuration and aerodynamics, heat protection, guidance and control, and propulsion. As a result of these technical complexities, a recent issue of Aviation Week and Space Technology notes that—

There has developed within NASA a schism in approach to design—in size, configuration and operational requirements.

The argument that these technological problems should be resolved prior to design and development of the space shuttle/station is a persuasive one.

There is another reason for questioning the development of this project in fiscal year 1971. At this point, we simply do not know the feasibility of long-termed manned operations in a space environment. Yet, the development of the space station is based on the assumption that man will be able to function effectively in such an environment for long periods of time.

The Apollo applications missions, which will begin in 1972, constitute an effort to determine man's effectiveness in space. Under this program, a Saturn workshop—or "Sky Lab"—will be placed into earth orbit, and each of three manned missions will rendezvous and dock with the workshop. The first of these missions will last for 28 days, and the second and third will each last for 56 days. According to the report of the House committee, these missions "are a prelude to the operation of a space station and space shuttle" and their "greatest importance will be to demonstrate during long duration manned flights the interassociation of man and his experiments."

I wish to emphasize at this point that we do not yet know whether man can safely stay in space for long, extended periods of time. We know that there have been serious problems. For example, the Biosatellite 3 mission is instructive as to the effect of weightlessness on the cardiovascular system. That mission resulted in the death of a primate after 8½ days of a scheduled 30-day flight, and the monkey died as a result of weightlessness and a condition known as the Gower-Henry reflex.

Mr. President, at this time I ask unanimous consent to have the statement on this subject printed in the RECORD.

There being no objection, the statement was ordered to be printed in the RECORD, as follows:

To date, astronauts have flown for periods up to 14 days with no irreversible deleterious effects. Medical authorities have testified, however, that they do not yet understand the biological or physiological effects of extended manned space flight.

There are many unknowns regarding the possible effects of prolonged weightlessness on major physiological systems of the human body, e.g., gastrointestinal, nervous, urinary, inner ear (balance), biological clock, etc.

But the most severe effect of weightlessness appears to be on the cardiovascular system. Prolonged weightlessness results in what is called the Gauer Henry reflex. Briefly, this is described as follows: In a state of weightlessness a person's blood tends to concentrate around the heart, in the area of the chest cavity, and away from the body's extremities. Nervous sensors in the vicinity of the heart respond to the pooling of this excessive volume of blood around the heart by actuating a reflex mechanism which, in order to reestablish an appropriate level of fluid in that area causes large-scale losses of body fluid, primarily through perspiration. A new equilibrium is thereby established in which the total blood supply of the individual is substantially reduced.

A potentially dangerous situation occurs when the individual is brought back to Earth and subjected to one or more "g"s. The reason it is dangerous is that the reduced blood supply tends to be drawn away from the heart and to the lower extremities when the body is subjected to "g" forces. The heart may be so starved for blood at this point that it may cease to function.

It is not known whether or how the body will adjust to these changes from weightlessness to a "g" environment, or what procedures or techniques may be needed to overcome the problem, and the Skylab project is designed to resolve this and similar questions. Skylab is specifically designed to test man's ability to survive and work in space first for 28 days and then 56 days. Essentially, Skylab will produce sufficient physiological data to determine whether extended manned space flight is feasible.

The Biosatellite III mission is instructive on the effects of weightlessness on the cardiovascular system. That mission resulted in the death of a highly instrumented primate after eight-and-one-half days of a scheduled 30-day flight. Medical experts associated with Biosatellite III believe that the monkey died as a result of weightlessness and the Gauer Henry reflex.

Mr. MONDALE. Mr. President, thus, there is a severe and serious question existing as to whether, even if the technology existed, man would be capable of surviving long duration flights as contemplated by the space station shuttle program.

Mr. President, we have what is known as the Sky Lab experiment coming up next year—where a Saturn workshop will be launched in space—an experiment to see how long man can safetly stay in space.

If that is true, why do we not wait and find out whether the objectives we have in mind are physiologically possible, before we start to spend this kind of money for a project that may prove to be unfeasible in terms of the health of our astronauts?

In short, until this experiment with a small orbiting station is completed in 1973, we will not know whether or not man will be able to use the shuttle/station. If the Sky Lab missions demonstrate that man cannot operate effectively in space for long periods of time, then the enormous funds allocated for development of the space shuttle/station will have been wasted. As one Congressman noted, it is strange, indeed, to authorize development of a giant space station before we have even flown the small one which is supposed to test the concept of space station flight.

It should be emphasized at this point that the decision to delete funds for development of a space shuttle/station will not kill the project. NASA officials have testified that approximately $80 million will be spent during fiscal year 1971 in direct support of this project by NASA's Office of Advance Research and Technology. This research is aimed at solving the difficult technical problems presented by the space shuttle/station.

Before undertaking the development of this project, we should first determine whether OART can resolve some of these technical difficulties. In addition, we should also know the results of the Sky Lab missions.

Because of these problems of feasibility and because of the ultimate cost of this project, there is little justification for proceeding with the development of the space shuttle/station in this fiscal year. But there is a more basic reason for opposing this authorization.

As Congressman KARTH argued during the House debate on this issue, there is every reason to believe that NASA proposes to embark this year upon a new space program based upon new hardware almost entirely in support of manned

missions, with a manned Mars landing as the ultimate objective. The space shuttle/station is the first step toward this objective.

Mr. President, the proponents of this authority in the House argued very strenuously that it was not being built with the Mars flight in mind. But, according to Congressman KARTH, without the space shuttle and without the 100-man space station to assemble the various spacecraft and other paraphernalia to get men to Mars, no Mars program is possible. NASA has testified that as soon as the space shuttle and space station have been developed, it plans to spend for a manned Mars exploration program $100 million in fiscal 1977, $300 million in fiscal year 1978, and $1 billion in fiscal year 1979.

We take notice of the fact that the Vice President of the United States, a few months ago, spoke approvingly of a national commitment to send a man to Mars.

Thus, approval of a space shuttle/station will be the initial phase of a program with an estimated cost of $50 to $100 billion over the next 15 years. Thus, while we have yet to establish a national policy calling for a manned landing on Mars, we may well be backing into such a policy by authorizing funds for a space shuttle/station.

Proponents of this project strongly deny that this is the case. But they do concede that the space shuttle/station is the basis of a "new epoch in manned space flight."

Even if this project is not intimately related to manned exploration of Mars it is clearly the beginning of a new and expanded manned space program. Thus, the decision to develop a space shuttle/station must be considered as congressional approval of this "new epoch in manned space flight."

If we grant such approval without careful and deliberate debate, we will have missed a golden opportunity to reassess the entire space program. For there are many persons, both defenders and critics of the space program, who argue that this program must achieve a better balance between manned and unmanned flights.

For example, in remarks before the House Committee on Science and Astronautics, the eminent space scientist, Dr. James A. Van Allen, stated:

> If, on a purely pragmatic basis, one or more men in the spacecraft is the cost effective technique for conducting any one of these missions, let it be done in that mode.
>
> But if, as I anticipate, this is not the case, let us *not* grieve nor devote ourselves to the invention of specious and inane reasons to the contrary. Rather let us get on with our . . . objectives in the most sensible and rational framework that we can devise.

Brian O'Leary, a former scientist-astronaut and now an astronomy professor at Cornell, recently wrote that:

> We should encourage science looking for a mission rather than a mission looking for science; we should ask how we can best perform a mission manned or unmanned, not what we can do with the man.
>
> In these times of conflicting, uncertain goals both inside and outside NASA, I think the unmanned planetary program provides a good example of what can be done. The Mariner 6 and 7 flyby missions gave us remarkable pictures and valuable scientific information, yet each cost less than 15 percent of the price of sending two test pilots to the moon.

Mr. President, Dr. Van Allen spoke of Explorer 35, an unmanned vehicle, as:

> a heroic little fellow, which has been orbiting the moon since 22 July 1967. . . . It does not sleep, it requires no oxygen, no food, no toothpaste and no sanitary facilities.

This is Dr. Van Allen's way of pointing out the importance of looking to the possibility of unmanned instrumental flights.

Finally, Max Born, a distinguished physicist and Nobel Prize winner, has commented that the manned space program was a "triumph of intellect but a failure of reason." To him, the manned missions are senseless, because their cost so far outweighs their scientific value and the money is so badly needed elsewhere.

Mr. President, I ask unanimous consent at this time that an article entitled "Topics: Science—or Stunts—On the Moon?" written by Brian O'Leary and published in the New York Times and Saturday, April 25, 1970, and an article entitled "Scientists Cite Social Needs—Cut in Space Program Urged," written by Victor Cohn and published in the Washington Post of December 28, be printed at this point in the RECORD.

There being no objections the articles were ordered to be printed in the RECORD, as follows:

[From the New York Times, Apr. 25, 1970]

TOPIC: SCIENCE—OR STUNTS—ON THE MOON?

(By Brian O'Leary)

The near-disaster of Apollo 13 has shown that lunar landings are risky as well as expensive. Still I think it can be argued that carefully planned scientific exploration of the moon justifies the outlay. Unfortunately, this is not happening.

Two years ago, I resigned from the scientist-astronaut program primarily because of NASA's indifference to science in its manned space efforts. Since then an impressive array of scientists associated with the Apollo program have also resigned for similar reasons. They include the chief scientist, the director of the Lunar Receiving Laboratory, the principal investigator of Apollo lunar surface geology, the curator of the lunar samples, and another scientist-astronaut.

INCREDIBLE TIMING

It seems utterly incredible that so many well-respected scientists could resign at a time one would suppose to be their finest hour—the return of the first rocks and detailed pictures from the lunar surface.

Eugene Shoemaker, now the chairman of Caltech's Division of Geological Sciences, quit his Apollo work "out of deep concern for the direction of the nation's space goal." He described Apollo as a "poor system for exploring the moon. . . . The same job could have been done with unmanned systems at one-fifth the cost three or four years ago."

While the scientist-astronauts are waiting a decade or more for a space flight, only test pilots are being flown. For example, Apollo 14 includes test-pilot astronauts who joined the program more recently than several of the scientist-astronauts. Seniority used to be the main criterion for crew selection.

SCIENTISTS IN THE SKY

The official reason for leaving the scientists out of the picture is that the Apollo mission will continue to be "operational" rather than "scientific"—yet the scientist-astronauts are also high-performance jet pilots with years of astronaut training. I am certain that a scientist-astronaut aboard Apollo 13 would have performed as well during the crisis.

If given the chance, the scientist-astronauts would add a new dimension to space exploration. Though the professional test pilot is better qualified to *command* an Apollo spacecraft on its treacherous journey to the moon, he cannot be expected to be a skilled, meticulous observer in space. There have been numerous examples of astronaut error in Apollo experiments.

Certainly the public would like optimal return from the half-billion dollars spent on each lunar landing effort. As Ralph Lapp puts it, "That's more money than Congress grudingly bestows on the National Science Foundation each year for the support of all basic research in the United States." Yet it appears that the lunar landings have become one technical stunt after another, with only minor increments in scientific return.

The reason behind NASA's "operational overkill" goes back to 1961, when a crash program was launched to fulfill John F. Kennedy's goal of a manned lunar landing by 1970. After the magnificent achievement of Apollo 11, it is pretty hard to deflate the balloon overnight.

Yet, I feel deflation must be done, and done soon. The space agency is now under Congressional and public scrutiny and the lunar landings are lacking both the luster and scientific return to justify the cost and risk. In my opinion, if NASA wants to continue a viable space program, it must for once listen to the scientists—for example, to space out the lunar landings to one per year.

We should encourage science looking for a mission rather than a mission looking for science, we should ask how we can best perform a mission, manned or unmanned, not what we can do with the man. And we should start thinking of collaboration with the Soviet Union now that the big race is over.

UNMANNED MISSIONS

In these times of conflicting, uncertain goals both inside and outside NASA, I think the unmanned planetary program provides a good example of what *can* be done. The Mariner 6 and 7 flyby missions gave us remarkable pictures and valuable scientific information, yet each cost less than 15 per cent of the price of sending two test pilots to the moon.

In the future, probes will be sent to the Martian surface and to the outer planets, these relatively inexpensive projects should go far in satisfying our most fundamental reason for going into space: to understand nature and ourselves better by exploring the universe.

[From the Washington Post, Dec. 28, 1969]

CUT IN SPACE PROGRAM URGED

(By Victor Cohn)

BOSTON, December 28.—Some of the country's leading scientists are calling here for a thorough re-examination and downgrading of the multi-billion-dollar U.S. space program.

They are pointing to money-starved research in science and medicine—the victim of recent federal budget cuts—as well as the nation's social needs and the need for research into pollution.

They are looking in particular at costly manned space proposals like space stations, Mars landings and lunar bases beyond the present Apollo program. Some are even talking about "phasing out" manned flight after the present Apollo program in favor of less

expensive—but scientifically fruitful—exploration of space and the planets by robots.

These suggestions are by no means unanimous among leading speakers at the 136th meeting of the large American Association for the Advancement of Science. But the theme has been running through major speeches.

Today they were stated in blunt words at a space flight symposium by Dr. Walter Orr Roberts, noted geophysicist and the association's president, and by two scientific advisers to President Nixon and the National Aeronautics and Space Administration itself.

These were Drs. Lewis M. Branscomb, new director of the National Bureau of Standards, and Gordon J. F. MacDonald, vice chancellor of the University of California at Santa Barbara. Branscomb is chairman of the space panel of the President's Science Advisory Committee. MacDonald also is on the committee, as well as being a member of the National Academy of Science's Space Science Board and other high-level space agency advisory groups.

They not only called for a hard, new look at most spending on manned flights, but also urged a moratorium on pressure now for any early man-on-mars program. MacDonald called it "the utmost folly" and a program that might cost $100 billion. (NASA officials estimate of the cost of a Mars program range from $25 billion to $40 billion.)

Branscomb and MacDonald ran into disagreement from Dr. S. Fred Singer, a physicist and deputy assistant secretary of the Interior, and Dr. Carl Sagan, director of Cornell University's Laboratory for Planetary Studies.

Singer said "if we downgrade the manned space program"—the part the public is most interested in—"we may find we don't have any space program." Sagan argued that the $3.7 billion space budget is "not the appropriate target" because it is "only a few per cent of the military budget."

The argument also prompted Dr. John Naugle, NASA associate administrator, to report that after the next trip to the moon—Apollo 13 in March—Apollo landings will "very probably" be made only every six months.

This has been a prime goal of lunar scientists, who have been asking for more time to study lunar samples and plan new explorations.

But the current argument goes far beyond the recent demands of lunar scientists for more attention to scientific goals.

In a much broader way, said MacDonald, "Congress is now asking the scientific community to establish its priorities."

For example, he said, the annual budget of the National Science Foundation—a federal basic research and training agency—is less than $500 million. Unmanned planetary probes now authorized will cost $300 million to $400 million a year. The manned space program costs $2 billion each year.

"I strongly believe the needs of total science have to be more widely discussed," MacDonald continued, "and discussed outside the NASA-industrial-science complex."

A greater sense of priority, he argued, is needed to solve social and environmental problems and "this sense of priority has not been reflected in NASA's plans. Indeed, I've been surprised at its lack of emphasis on applications."

A Mars landing, MacDonald maintained, "would completely dominate the space program" and—by merely using extended Apollo technology, in his view—"would not strengthen the country's technological base" as much as unmanned planetary probes. These, he said, would require "important advances in equipment lifetimes, reliability and compactness."

Association President Roberts, who is head of the University Corporation for Atmospheric Research at Boulder, Colo., agreed.

"I feel we should not make it an objective to put a man on Mars now or ever," he said. "We should send men to Mars only in the improbable event that it someday proves more economical than sending instruments."

Mr. MONDALE. Mr. President, there are deep and sharp feelings in the scientific community about the present directions of the manned space flight program. In the space program itself, not only did Mr. O'Leary resign but the chief scientist resigned, the director of the lunar receiving laboratory resigned, the principal investigator of Apollo lunar surface geology resigned, the curator of the lunar samples resigned, and another scientist-astronaut resigned.

Mr. Shoemaker, now the chairman of Cal Tech's Division of Geological Sciences, quit his Apollo work out of deep concern for the direction of the Nation's space program. He described Apollo as a poor system for exploring the moon. He said the same job could have been done with unmanned systems at one-fifth the cost 3 or 4 years ago.

My point in quoting that material is not to challenge the moon program. I served on the Space Committee and supported the moon program. I think it is an achievement of which we are all proud.

The question now is whether we want to undertake another effort of that same magnitude in the manned space flight field or whether we do not want to take cognizance of the scientists with respect to unmanned instrument efforts.

Mr. PROXMIRE. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. PROXMIRE. Mr. President, I congratulate the Senator from Minnesota on his amendment and on a superlative presentation. I think it is the most comprehensive and convincing presentation we have had in the years we have been considering the space program amendments.

The Senator from Minnesota is specially qualified because he did serve on the Space Committee and, as he said, he has supported the space program throughout the years. He understands the value of the space program and is proud of the Apollo achievements and manned lunar landings.

As I understand it, his amendment is similar to the amendment offered in the House of Representatives by Representative KARTH, of Minnesota.

Mr. MONDALE. The Senator is correct, except that the House would authorize $180 million, whereas the Senate authorizes $110 million for the design of the space shuttle station.

Mr. PROXMIRE. Mr. President, as I understand it, Representative KARTH in the debate in the House pointed out that even if his amendment—now the Mondale amendment—should prevail, there would still be sufficient funds remaining in the bill to permit the research to go on in the program.

Representative KARTH in the debate pointed to the hearings, at page 324 of the House hearings, where the question was raised as to how much money is in other parts of the budget for the program that the Mondale amendment would strike in the space shuttle station.

The answer was:

ANSWER. In addition to the $110 million identified in Space Flight Operations in the FY 1971 budget for Space Station and Shuttle, a significant portion of the Office of Advanced Research and Technology effort is applicable to these same two programs. In each program between $30 to $40 million will be applied.

This means that there is already $60 million or $80 million in the bill for research in the program.

Mr. MONDALE. The Senator is correct. There are two key ways in which this program will receive——

Mr. ANDERSON. Mr. President, will the Senator point out where that $60 million is?

Mr. MONDALE. The Office of Advanced Research and Technology.

Mr. President, I should like to respond to the question of the chairman of the committee after I have responded to the question of the Senator from Wisconsin.

There are two ways in which the research on this project is going forward.

I think the Skylab project almost settles the argument about whether we need to spend another $110 million this year.

The key question about the whole space station and shuttle program is largely whether man can sustain himself for 40 or 50 or 60 days or longer in space. We do not know the answer to that question.

There is good scientific reason to be very concerned about whether man can last that long in space. The Biosatellite experiment was designed to see what would happen in long duration flight. The first effort was abandoned after 8½ days when the monkey died because of long duration flight. I have had printed in the RECORD the kinds of problems which concern doctors and others, the kinds of deep concern which has led the space program to undertake this Skylab experiment.

Early next year, they will launch the skylab, and men will stay there for up to 56 days. This will be a relatively inexpensive experiment. But that is designed as a prelude to the space shuttle program. It does not seem to make any sense to me to spend $110 million on this kind of project, when next year may demonstrate that it is not even feasible. Why do we not find out first?

In answer to the question propounded by the distinguished Senator from Wisconsin and the chairman of the committee, the Senator from New Mexico, on page 12852 of the CONGRESSIONAL RECORD, NASA was asked the following question:

Aside from the requested $110 million identified specifically for the Space Shuttle Station in FY 71 Space Flight Operations line item, how much is included elsewhere in the FY 71 request for the Space Shuttle Station, and what is the tentatively planned use of these funds?

The answer was:

In addition to the $110 million identified in Space Fight Operations in the FY 1971 budget for Space Station and Shuttle, a significant portion of the Office of Advanced Re-

search and Technology effort is applicable to these same two programs. In each program between $30 to $40 million will be applied.

That is the basis on which I made my statement.

Mr. PROXMIRE. Mr. President, the Senator discussed not only the immediate, but also the ultimate, cost of the program. As I understand it, the Senator argued that the space shuttle station could ultimately, according to present estimates, exceed $14 billion. On the basis of past experience, the $14 billion is probably an underestimate. It probably will be much more than that.

Mr. MONDALE. Mr. President, this is NASA's own budget estimate. They say they cannot tell. However, I think in view of the past experience in this uncertain technological field, I would not be surprised if it would cost $40 billion. I do not know.

Mr. PROXMIRE. Mr. President, is this not a part and a very important part of the program? Should some view it as a commitment toward our exploring Mars with a manned exploration?

Mr. MONDALE. The proponents of this proposal on the floor of the House argued vigorously that it was not.

The point I make is, first, if you want to go to Mars, this space shuttle program is an essential ingredient.

Mr. PROXMIRE. The Senator is correct.

Mr. MONDALE. It is the first step, whether or not the later steps come.

Second, NASA, in its future budget, allocates $100 million, then $300 million the following year, and then $1 billion after that for the manned Mars flight. We know the Vice President has said, "On to Mars." Whether they say it is for Mars or not, I am somewhat inclined to believe they have this in the back of their minds.

Mr. PROXMIRE. Does it not seem logical to the Senator that this would seem to be the point at which the Senate is making a serious decision that could involve a commitment to go ahead and spend billions of dollars in the future? Does it not seem to the Senator that we should have an extensive debate and that the people of this country should have an opportunity to know what is at stake? If we do go to Mars it could cost $50 to $100 billion and it would mean there would be many things we could not do on earth. We are all aware of the priorities involved. We cannot do everything and, therefore, we could not meet urgent priorities here if we go ahead with the space program.

Mr. MONDALE. I would like to respond to the Senator from Wisconsin by saying whether we go to Mars or not in a manned flight, it is entirely possible that the policy judgment on this $110 million could lead to space stations around the earth which would equal the cost of the trip to the moon. This is the next major manned flight effort to bring us through the next decade, which is planned for NASA. It is, by the terminology of House proponents, introducing a new epoch in manned space flight. We are not talking about just one phase but the fundamental manned flight commitment for the next decade, which will cost at least $14 billion. I suspect it will be far more. It is a decision which will increasingly shift the ratio of the space budget in favor of manned flights.

Mr. ANDERSON. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. ANDERSON. This is the purpose of the $110 million. We must proceed cautiously. I do hope that the Senator recognizes that this money is not for a first step in development, but only for studies to determine whether we should proceed further.

Mr. MONDALE. I thank the Senator from New Mexico. I well recall when I served as a member of the committee with him that he was the most alert man on the committee. NASA would try to sneak money in the budget for post-Apollo efforts without sufficient justification. One year they wanted $50 million for Apollo without explanation. The distinguished Senator said:

> No, we are not going to go into post-Apollo efforts until we know what we are doing and have a clear explanation.

I know the position of the chairman.

The thing that concerns me is that there are expenditures now that, in my opinion, would adequately do the research we now need done. First of all, the Skylab that is going to be completed in a year or two will cost us, I suppose, $50 million or $100 million to find out if it is physiologically possible to have extended manned space flight. The other is the $80 million which would remain in the budget, even if my amendment succeeded, for research on this project. It seems to me there would be considerable funds for research. It seems to me this proposal talks about design definition. That is the next stage beyond research. This is where you harden the design and configuration and other elements preparatory to buying the equipment and hardware. At least, that is my understanding.

Mr. ANDERSON. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. ANDERSON. I want to make sure the Senator is not talking about a manned landing. There is no support for a manned landing.

Mr. MONDALE. On Mars.

Mr. ANDERSON. Yes.

Mr. MONDALE. I was careful not to say that.

Mr. ANDERSON. I appreciate that, because it does have a bearing on the situation.

Mr. MONDALE. I thank the distinguished chairman of the committee.

One of the reasons I was reluctant to call up the amendment was that I know how hard the Senator has tried to keep the space program in some kind of reasonable proportion. The space program has dropped about $1.5 billion in annual authorizations over the past 3 or 4 years. There are few programs which go down.

Mr. ANDERSON. It is down over $2.5 billion.

Mr. MONDALE. I know the chairman has been instrumental in that achievement, and I do not wish in any way, by what I have said, to diminish the profound respect I have for the chairman.

Mr. ANDERSON. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. ANDERSON. Mr. President, I ask unanimous consent to have printed in the RECORD a table showing the estimates for the cost of the Apollo program made in the years 1961, 1964, 1966, and 1968, and the actual cost through July 31, 1969.

There being no objection, the table was ordered to be printed in the RECORD, as follows:

COST OF APOLLO PROGRAM, ESTIMATES AND ACTUAL

[In millions of dollars]

	April 1961, estimate	March 1964, estimate [1]	March 1966, estimate [2]	April 1969, estimate [2]	Actual cost, through July 31,1969
Apollo spacecraft		5,053	6,642	7,945	6,939
Saturn launch vehicles		7,702	8,941	8,770	7,940
Engine development		1,190	1,053	854	854
Operations support		863	1,077	1,393	1,137
Total, MSF R. & D.		14,808	17,713	18,962	16,870
Tracking and data acquisition		776	730	664	541
Facilities		1,664	1,773	1,830	1,810
MSF center operations		2,253	2,502	2,421	2,128
Total	20,000-40,000	19,501	22,718	23,877	21,349
Flight hardware available					−2,000
Net total					19,349

[1] Based on assumption of timely initiation of follow-on program.
[2] Based on assumption that there would not be timely initiation of a follow-on program; also reflects the effects of program stretchout.

Mr. PROXMIRE. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. PROXMIRE. For this enormous amount of $14 billion what are the benefits? Has any cost-benefit analysis been made? We usually present details or studies for $2 million or $3 million in any project which affects people on earth. A cost-benefit analysis is made. If benefits do not exceed the costs, and usually they have to exceed the cost by a fair amount, we do not go ahead. Has there been a benefit-cost study in any of these space investments? If there has been it escaped me. I have tried to find one. I notice in the committee report it is stated on page 16:

> The station will primarily serve as the supporting platform for a very diversified group of scientific applications, and technology experiments encompassing nearly all scientific discipline.

That is the kind of bland generalized rhetoric that is used when they do not have a reason to proceed and because

they want to keep a bureaucracy operating. Why should we spend $14 billion and end up with that kind of description? We should know just how science can benefit. What is the most we can expect for the $14 billion?

Mr. MONDALE. I thank the Senator. I could not agree more. I think those who pushed hard for this cost-effectiveness study are exactly on target. The argument made by NASA is that they can reduce the cost of lifting 1 pound of something into space from between $500 a pound and $1,500 a pound down to $50 a pound.

Mr. PROXMIRE. If they can find a purpose to lift something into space.

Mr. MONDALE. The Senator is correct. Their projections are based on lifting 3 million pounds of something into space annually. Most of that was attributable to the Apollo program. It would just take weight into space for some reason. If things continue in air and water pollution, we may all want to leave. I do not know.

However, that is the basis on which their cost analysis is predicated and I think it is entirely without justification.

Mr. PROXMIRE. Mr. President, will the Senator yield for another point?

Mr. MONDALE. I yield.

Mr. PROXMIRE. Last year I wrote to the head of the Space Agency, Dr. Paine, and I asked him to give me the benefits of manned space exploration. This was in connection with the lunar flight. All he could come up with were two reasons: First, that it would provide human fulfillment; we could enjoy it on television, and we knew Americans were up there in space. The other reason was that we would get a better understanding of the origin of the earth, the moon, and the sun. How about that for $1.7 billion a year?

Those who support this program cannot come up with even that justification. It could be argued we received a great lift because we landed men on the moon, but no one could argue because we put this platform in orbit we will receive commensurate prestige.

We are not going to find out anything about the origin of the planets? What will we discover? They cannot give us the concrete benefits that any man, woman, or child, taxpayer, sick person, or hungry person would get from this kind of investment.

Mr. MONDALE. May I say it is not only a cost-benefit study into the scientific yield from this kind of investment that we should have; we know that many scientists, like Dr. Van Allen, and many others, are getting concerned because we seem to be increasingly preoccupied more with manned shows and less with scientifically oriented, unmanned space projects which would yield far greater benefits and returns in scientific knowledge.

Second. I think the Senator from Wisconsin is dead right when he says he thinks it is time that we have cost-benefit studies for this program and other programs in this country. We are in a period of inflation. The amount of money involved here could almost double the school milk program. It could double the 235 to 236 housing programs at a time when people cannot afford housing. It could double the Nation's air pollution money, and all other manner of programs. With $14 billion, we could fundamentally affect our economy over the next few years.

Mr. PROXMIRE. The Senator from Minnesota and the Senator from Wisconsin have been critical of the Defense Departemnt for some of the waste it has been responsible for. I think it has done a better job this year in cutting down waste, but I think there are still areas where it could make some cuts.

Is it not a fact that the Defense Department felt that the manned orbiting laboratory was of such secondary or marginal benefit that it decided it would not go ahead with it?

Mr. MONDALE. I thank the Senator for making that observation, because the space shuttle and station program was a program on which the Defense Department spent $3 billion and then rejected it. It had spent half of that on the manned orbital laboratory and turned down that program last year. Before that, it had spent $1.5 billion on Dynasoar. That was a total of $3 billion for a kind of space station, and Defense turned it down.

This year, while the Defense Department says it is interested in this program, and we have given the Department $75 billion, it will not spend a plugged nickel of its own money on it. Of course, anybody is interested in something that is free, but the Defense Department is not sufficiently interested in it to allocate any of its own money to it, and, in fact, has rejected the initial project costing $3 billion.

Mr. PROXMIRE. With more than $70 billion to spend, the Defense Department still cannot justify a very similar program.

Mr. MONDALE. Other than moral support, there is no other support at all.

Mr. GOLDWATER. Mr. President, will the Senator yield?

Mr. MONDALE. I yield.

Mr. GOLDWATER. The question of cost effectiveness interests me, because I have never heard it raised with respect to appropriations for the National Institutes of Health. I do not know how we can make a cost-benefit analysis on a purely scientific project. What is it worth at NIH to arrive at a cure for cancer? What is it worth, as I asked earlier on the floor today, to prevent midair collisions? What is it worth now to have a liquid, that will soon be available to any housewife or any painter or to anyone who wants to do it himself, to make that person's clothing fireproof or to have complete house fireproofing? What is that worth? What is the cost effectiveness of that?

These benefits were fall-outs. I am trying to answer the question raised by the Senator from Wisconsin. I do not think we can get into cost effectiveness or cost analysis on a purely scientific project, because, in the first place, what are we going to find when we do it? I do not think any scientist could give us a complete list. I maintain what I have maintained all along, that this will be—and I think in 5 years we can categorically prove it—the best investment of the public's money that the Congress has ever made.

Getting back to cost analysis, how effective has it been when it is applied to housing? We still do not have adequate housing. How effective has the money that we have applied to the cities been? We still have not gotten rid of the mess in our cities. We have spent billions of dollars, and we are appropriating more and more billions of dollars, in the whole field of health, education, and welfare. How effective has the money that has been spent on education been?

I do not question the value of a cost effectiveness study when we get into hardware—something we know something about—but I do not think we can talk about cost effectiveness when we are talking about explorations into space from which we hope to gain basic knowledge.

Mr. PROXMIRE. The committee has asked the Federal agencies whether they use cost effectiveness studies to plan their budgeting and to what extent. We found that the two agencies that completely disregarded it were the space agency and the highway agency. Of course, there is a trust fund for highways, so they do not have to worry whether the money they spend is spent in worthwhile ways. This is something we should study, and we can later on, but certainly if we are going to invest money in the space agency, we ought to at least have as much information as that provided by NIH. There are very effective cost analyses in the very field the Senator mentioned, in the cancer research field. They have found some fields of study which are far more lucrative, with more results at lower cost, and they have saved more lives at lower cost. That is not done with funds that go into NASA.

I think the Senator from Arizona makes a good point when he says that we cannot make a final decision based on statistics and that one has to make a value judgment. That is true. Nevertheless, we should have some evidence from the space agency to tell us as specifically as it can what is the benefit. What are we going to get out of this? If they cannot do so, then it seems to me they should not have the money.

Mr. MONDALE. First of all, the space agency argues cost effectiveness on the grounds of a calculation that it will cost less per pound to lift weight into space with this space truck than it does now. The calculation, however, disregards—at least in the view of many people—the cost of producing and developing it, which could go into billions of dollars; and, secondly, it assumes a space manned flight involvement by this country in the next few years far exceeding anything that we have ever had, including 1969, the peak space year, so that by projecting it the argument is made that the unit cost will be reduced.

Before we accept the argument that the unit cost is going to drop, we ought to have a cost analysis to see whether that makes sense or not. I have looked at the figures. I am no expert, but they do not appeal to me.

The second point is this: The key question—and if there is an answer to this I

would like to have it—is that we do not know if man can physiologically stand long-duration flights. We do not know. We know that in the biosatellite, which was supposed to last some time, the monkey in the satellite died in eight and a half days because of the well-known syndrome called the Gower Henry reflex.

This is a case where, in a state of weightlessness, a person's blood tends to concentrate around the heart, in the area of the chest cavity, and away from the body's extremities. Nervous sensors in the vicinity of the heart respond to the pooling of this excessive volume of blood around the heart by actuating a reflex mechanism which, in order to reestablish an appropriate level of fluid in that area causes large-scale losses of body fluid, primarily through perspiration. A new equilibrium is thereby established in which the total blood supply of the individual is substantially reduced.

This develops a potentially very dangerous situation, which deeply concerns the scientists and doctors looking at the feasibility of this program.

We have already programed a Skylab experiment next year, which we can undertake fairly inexpensively by permitting the astronauts to float in space, and watching them carefully to see whether it is going to work or not.

But if we find that it is not going to work this hundred million dollars for design and the rest will be based on a project that will not work. Surely we ought to have this kind of experiment conducted before we go further.

Mr. GOLDWATER. Mr. President, will the Senator yield?

Mr. MONDALE. I am happy to yield to the Senator from Arizona.

Mr. GOLDWATER. Getting back to cost effectiveness, I remember when we sat over in the House of Representatives and listened, in joint session, to President Kennedy talk about putting a man on the moon during the decade just finished. We did not talk about cost effectiveness then, because we did not know what we were going to find. We did not even have an idea of the tremendous fallout or spinoff we would get from this exploration.

I think personally the spinoff is the way we are going to have to judge future explorations in space, and we can only go by what we have found in the past.

I put in the RECORD, I think it was last week, a list of several thousand patents that had been issued because of discoveries made in the space program. As I say, I do not think I could get their value to total $42 billion to date, but I think within 5 years we will find a real profit has been made on this program, without having had a cost effectiveness study.

I should like to put something else to rest, if I can. Dr. von Braun appeared before the Space Committee one day last year, and I remember his opening statement was something like this:

> Now, the next question you are going to be asked is, can we put a man on Mars? I am not here advocating that we put a man on Mars, but if you are asked that question, the answer is yes, and here is how we could do it, but we cannot do it until 1981 or 1982, when Mars gets closer to the earth.

So we are really talking about the possibility of a giant expenditure so far in the future that we have ample time to control anything that might develop.

Personally, with my limited scientific knowledge, I see no value in putting a man on Mars. I think we can do a better job with the money. I think most of the men in NASA feel the same way. But Dr. Von Braun was illustrating to us how we could write to our constituents or appear on a platform and seem rather brilliant by saying, "Yes, we can put a man on Mars, and here is how we can do it." I do not think he cared whether we put one there or not. So I think this is something we do not have to worry about in this particular debate.

I wish there were a way we could make a cost effectiveness study on everything we get into. My friend from Wisconsin is a distinguished economist, and I think he would be first to agree that when we get into the field of sophisticated weaponry, we can only make an educated guess about cost effectiveness; we can never really know until the weapon is tested in a war.

If we could get a weapon tomorrow that would end the war in Vietnam, would people object to the expenditure of $14 billion? I do not think so.

But this is like asking a man going down a dark hall for a report, before he starts down the hall, on what he is going to run into. About all you can say is that you are going to run into the end of the hall.

Mr. CANNON. Mr. President, will the Senator yield?

Mr. GOLDWATER. I do not have the floor.

Mr. MONDALE. I shall yield in a moment, if I may make one comment.

I think one of the greatest criticisms of the space program, which I happen to share, is in the area of which the Senator speaks. There is an increasing feeling in this country that scientists and scientific values are taking a secondary role in the manned flight program. We have had criticism by Dr. James Van Allen and many of the top scientists in this field. Many of the top scientists have quit the Apollo program because they feel there is no regard, or not enough regard, being shown for the scientific aspects of the space program. One of their key complaints has been that we are pursuing the far more expensive, far more dangerous, and far lower scientific yield process of manned space flight, rather than the much less expensive, perfectly safe, and higher scientific yield unmanned instrumented flight series. Increasingly we hear this criticism.

But if the space station shuttle system goes through at the budgeted level NASA wants, that distorted approach will be even more distorted, and the amount, by 1979, applied to manned flights—the area where the scientists are making their most severe criticism, and where the biggest cost in dollars and the lowest scientific yield are involved—will have been increased to 68 percent, or possibly 75 percent, of the space budget, compared to 60 percent of the space budget today.

So increasingly the recommendations of NASA are pushing the space program in the very area where the scientists have been most critical.

Mr. CURTIS. Mr. President, will the Senator yield?

Mr. MONDALE. I yield to the Senator from Nebraska.

Mr. CURTIS. I thank my distinguished friend.

Is it the contention of the Senator from Minnesota that if the Senate rejects his amendment, it would commit us to an expenditure of $14 billion?

Mr. MONDALE. It is my opinion that the program should not be started, probably, at all; but if it is started, not until we know whether it is worthwhile, based on a cost study and based on this Skylab, whereby we decide whether it is even feasible. The idea of spending $110 million for the hard design of something that may be a complete waste seems to me to be without justification.

Mr. CURTIS. I understand that is the Senator's contention, but is it also his contention that if we fail to adopt his amendment, the Senate has made a commitment for a $14 billion expenditure?

Mr. MONDALE. No, but we have seen this happen many times, how we back into programs such as this.

My point is that we spend $110 million or $200 million on some kind of program, then we come back and say we do not like the program, but one of the arguments raised against us is, "We have already spent all this money."

So I see no reason to begin spending the money. There are plenty of things we need to know before we proceed, and I think we are going to find, when we have analyzed it thoroughly, that there are better ways of spending the money.

Mr. CURTIS. I should like to point out, in that connection, that we did spend money on preliminary efforts in connection with the Voyager. Later on, the committee and the Senate concurred in abandoning the whole project; and it is because of actions like this, under the leadership of our distinguished chairman (Mr. ANDERSON), that NASA has been enabled continually to reduce its expenditures.

The contention that if we spend this money, which is limited to studies and definitions, we will back into something, is not supported by the previous record of NASA.

Mr. MONDALE. Let me say that there is still probably more than $80 million in the bill for study of the space shuttle station program, even if my amendment passes. So there is plenty of money—I would guess more money than is necessary—now. To go into the hard design phase, which is what this $110 million is about, until we even know whether it is feasible, is a waste of money.

Mr. MAGNUSON. Mr. President, will the Senator yield?

Mr. MONDALE. I yield to the Senator from Washington.

Mr. MAGNUSON. I have been listening with great interest to this debate. I am sure that the Senator from Minnesota has made as strong a case as could be made. But one thing we should remember

is this: We are talking about an authorization bill, not an appropriation. As the Senator from Minnesota knows, I have for many years handled the space appropriation in the Senate. I also am a member of the committee of the distinguished Senator from New Mexico, the Committee on Aeronautical and Space Sciences.

We have had no hesitancy, in that space appropriation subcommittee that I chaired until last year, to probe a program to examine it very closely, and then if it did not hold promise, to cut it or slow it up or say, "You use some other funds." I do not think Mr. Webb liked it too well, but we have frequently sent him back downtown and said, "You come back here with your priorities better arranged," so that we could make some overall cuts that were necessary for economy. As the Senator from Arizona has said so eloquently, we review this space program very thoroughly every year.

The space station is the next logical step in outer space, and the space shuttle is the only logical step in cutting space costs. I think it was the opinion of the authorizing committee that this program holds promise of reducing space exploration costs in the future.

The Senator from Minnesota, the Senator from Wisconsin, and I have some doubts about what this Nation's space program should be in the future. I have been greatly involved in this matter. I have just come, incidentally, from a luncheon downtown at which the Collier Trophy was presented to the three Apollo astronauts. The Apollo program, despite the Apollo 13 mishap, has been a great success. That program is not in question. But on other programs, we have appropriated some money for research—such as the Voyager program— and later cut that program out when it looked dubious.

I think this country has to look around the world in considering future programs. I hope that in the next space effort, after we reach what we consider a logical conclusion of our present programs, we will join with every nation in the world, so that what scientific value we obtained from further exploring of the universe would belong to everybody. It would save us money, and promote international cooperation.

I do not know what the political situation would be with respect to Russia, which is one of the two major countries in the world involved in the space effort. I know that the space scientists in Russia would like to cooperate with us, but I do not know what happens to them when they go to the Kremlin to discuss the idea.

We could do in this field what we have been doing in the field of oceanography. We have not done as much as we should, as the Senator from Minnesota knows. But it has become a joint effort to a limited extent.

We could do what we did in the International Geophysical Year, when all nations of the world joined to produce a vast array of scientific knowledge.

I am looking forward to the slowing up of the U.S. space program to that extent. But this current program, the space station concept, seems to me to belong in the current era, and I think the committee felt that way when it made the present recommendation. I think the Senator from New Mexico will agree with me on that. My impression is that this program may help us cut space costs, and that is why I am supporting it.

Mr. MONDALE. If I might respond to the Senator from Washington, permit me to say that I enthusiastically endorse his statement about international space cooperation.

Mr. MAGNUSON. It would be one great factor in bringing the world together.

Mr. MONDALE. I deeply regret, however, that although we have done something, in my opinion we have not done as much as we could have. With the interest there is, I would hope that we could see far more progress in this area than we have seen.

Mr. MAGNUSON. I have attended a few international space meetings, as chairman of the appropriations subcommittee handling NASA. At the proper time—I do not know now what time will be proper—I intend to introduce a resolution, and I hope the Senator from Arkansas will entertain it, recommending that we try to cooperate with all nations of the world, after the Apollo program, to have a joint space effort. I have long advocated this. There may be some arguments against it, but I think it is time now that we began to consider it.

But let me turn now to the question of the space station/space shuttle.

Mr. President, the terrifying adventure of Apollo 13 last month forced us to think about outer space and man's place in it with an intensity reminiscent of the launch of sputnik, the first manned flight, or the first landing on the lunar surface. The Apollo 13 mission also emphasized how oriented we are in our thinking to particular missions, particular successes and crises, and how little public discussion we have devoted to the long-term questions of our space program and its purposes. That the space program has a future beyond the moon—and that man will benefit from that future—has largely been obscured or forgotten.

The pending committee amendment provides us with an opportunity and a responsibility to consider man's future in outer space. For many years we have heard cries for economy in outer space, cries that have been answered by a continual reduction in the budget of NASA, and cries that have been answered in the reduction in number of planned space missions. As the immediate past chairman of the appropriations subcommittee responsible for NASA's budget, I know that these calls for economy have also been answered by intense scrutiny of NASA's programs.

The current controversy over the space station/space shuttle programs comes at a time when many millions of Americans are questioning our role in space, the cost of that role, and the importance of that role relative to other pressing domestic needs. Unfortunately, too, the controversy arises during the aftermath of the Apollo 13 mission—a major failure that has added immensely to the number of critics of the space program. It would be tragic, however, if the Apollo 13 mission were used by critics of the space program to transform reasonable calls for economy into unreasonable demands for a fundamental retrenchment in outer space.

I think it is healthy and important to consider and to discuss fully the issues of priorities and of man's role in outer space. But I think it would be most harmful to the quality of that discussion to permit ourselves to be swayed by the emotion that the Apollo 13 mission has created. The space station/space shuttle issue can and should be looked at in the light of hard facts, not emotion, and I would like to present some of those facts today in connection with the pending committee amendment.

First, we must realize that the funds we appropriate this year for the space station/space shuttle project do not constitute a commitment to a multibillion-dollar new program. Rather, they are simply funds for advanced research and development of the space station/space shuttle concept—research and development that must be undertaken before we can make an intelligent and rational decision on whether to go ahead with production of these vehicles and outer space facilities. We are not, with these funds, abdicating responsibility for that production decision—indeed, we cannot avoid having to make that decision in future years. Congressional control over spending lies in continual review, annual decisions, and the retention of control over ultimate production decisions. Such control does not lie in giving a "green light" to such an expensive program, once and for all, at such an early stage in the program's development.

The funds we provide this year should bring the space station/space shuttle program to the point where we can make an intelligent decision in the future. By providing these funds, let me emphasize again, we are not making a final production decision. By not providing these funds, however, we would be making a premature decision not to go ahead with this program. Let us permit the research and development to continue until we reach that production decision point; let us not cancel this program in our haste to come to a premature decision about the program's merits.

Second, to cancel the space station/space shuttle program at this point would not be economical—rather, it would be false economy in the purest sense of the phrase. The program—particularly the space shuttle aspect—is an economy effort, an effort to lower the cost of space exploration by developing reusable space vehicles. Today it costs us almost $1,000 per pound for every object we loft into space; tomorrow, with the aid of the reusable space shuttle, we may cut these costs by 90 percent. In other words, for the same dollar expenditure the space shuttle will allow us to put almost 10 times as many mis-

sions into space; the scientific benefits of more missions, explorations, and manned flights will be achieved with dramatically lower costs. Imagine how much more we would know about the moon and the origins of our own planet, for example, if for the price of our past four Apollo missions we could have provided dozens or even scores of such missions.

I would emphasize, additionally, that the Senate has already taken a major economy step by reducing the House authorization for these programs by nearly $140 million. The $110 million remaining for the space station/space shuttle is, in the judgment of the Aeronautical and Space Sciences Committee, a sufficient amount to proceed with the research and development of this program.

Finally, in our justified haste to divert funds to meet our growing domestic needs, we should not lose sight of where Federal money is really being spent. The NASA budget is conspicuous, but it amounts to roughly 5 percent of the amount we devote to military spending. The real "domestic surplus" will come from making needed cuts in our military budget, and through the elimination of costly and unnecessary new weapons systems. The $110 million for the space station/space shuttle program this year is less than 1 percent of what we will have to pay for an unproven and potentially obsolete ABM, for example. It represents a small fraction of the money we have wasted in our unsuccessful attempt to develop a new main battle tank. It is less than 20 percent of what we have been spending every year to develop murderous and unnecessary chemical and biological warfare agents.

My point is simply this. Just because the military budget has proven difficult to cut does not mean we should diminish our efforts to cut it; just because NASA is vulnerable and its budget easy to cut does not mean we should eliminate vital NASA programs whose cost is almost insignificant in comparison to the billions that go annually to the Defense Department.

Let us realize that man is in space to stay. The benefits of space exploration are largely unknown, but they may prove to be incalcuable. The space program not only provides peaceful employment, peaceful applications of scientific knowledge, and peaceful commercial spinoffs to the entire Nation—it also represents, in further contract to our military spending, a peaceful and healthy form of competition and national mission in the United States and in the world as a whole. Someday, we all hope, it will provide the basis for peaceful cooperation between this Nation and the Soviet Union, and undoubtedly it will aid us in our efforts to save the ecology of this planet.

The space station is the next logical step in outer space and the space shuttle is the only logical step in cutting space costs. These programs may never be completed, if the research and development prove them to be unwarranted. But we can and we must give the space station/space shuttle concept a chance. It holds the promise, not only of cutting the cost of space exploration, but of dramatically increasing our knowledge of our planet, our solar system, and our universe. We cannot and we must not ignore the opportunity to obtain that knowledge.

I ask unanimous consent to have printed in the RECORD an excerpt from Report No. 91–833, "NASA Authorization for Fiscal Year 1971," a report of the Committee on Aeronautical and Space Sciences on H.R. 16516, and an excellent commentary on the space shuttle by Mr. Bob Considine.

There being no objection the material was ordered to be printed in the RECORD, as follows:

EXCERPT FROM REPORT NO. 91–833

Space shuttle and station

The space shuttle is a reusable space vehicle system which will provide an economical method for meeting a variety of launch and orbital requirements, and represents the basic space transportation system for the remainder of this century. It will be designed to meet the President's Space Task Group criteria of economy, reusability, and commonality. As currently conceived, the shuttle will be able to carry at least 12 passengers to and from a space station or space base with a cabin environment similar to that found in today's commercial airliners, and with gravitational forces of no more than 3 G's being exerted during the launch and reentry phases. Passengers without special training could be carried to and from space safely and efficiently.

The space shuttle is expected to have a payload capability of up to 50,000 pounds in low-earth orbit with a payload compartment 15 feet in diameter and 60 feet long and having a volume of 10,000 cubic feet. As presently conceived, the space shuttle is composed of two stages—the booster and the orbiter, both utilizing the same engine but in varying numbers, to satisfy the different thrust requirements. Both are reusable, and will be designed to perform 100 missions with a minimum of maintenance. It is expected that both stages will be manned, although the booster may have the capability of making an automated return and landing. It has been assigned a preliminary design weight ceiling of 3.5 million pounds including propellant, and the projected height of the system is between 200 and 250 feet. Both booster and orbiter will use high-pressure liquid oxygen/liquid hydrogen fueled rocket engines for propulsion. Each engine will have a design thrust of 400,000 pounds, will be throttleable and capable of continued reuse and multiple restarts. In addition, both orbiter and booster will use a set of jet engines which will be fueled by hydrogen and will provide power during the cruise return to the landing area.

In operation the space shuttle mission payload, contained in modularized cargo containers, would be loaded into the payload compartment of the orbiter at the launch area. After a vertical launch the booster stage would propel the shuttle to a suborbital altitude of 40 to 50 miles before separating for a return to earth. The orbiter engines would ignite and burn until the stage gains the velocity needed for insertion into a low elliptical orbit. The engines could later be restarted to circularize the orbiter at 100 miles and restarts could be made to execute transfers to other desired orbits. At the conclusion of its mission the engines would be refired to brake the orbiter back into the atmosphere. Upon reaching a speed where it can perform a transition to the cruise configuration of an airplane, it would use its jet engines for power and return to the launch area for another mission. Both booster and orbiter stages would be designed to land on runways approximately 10,000 feet in length. Having landed, the booster and orbiter could be checked out, refueled, and provided with new payloads for another launch 2 or 3 weeks later. This ability to achieve short turnaround time between flights will reduce the number of vehicles required for the planned missions.

Initially the shuttle will be used in transporting flight crews, scientists, experiments, and supplies to space stations and space bases in earth orbit. Later it can be used for transporting supplies and equipment into an earth parking orbit for transfer by a nuclear stage to such distant destinations as lunar and planetary bases. Other projected uses include flying missions in a polar orbit, carrying from one to several automated satellites and positioning them in their selected earth orbits, serving as an orbiter staging platform for automated planetary probes and spacecraft, and transporting liquid hydrogen to earth orbit for use by nuclear propulsion stages capable of traveling to neighboring planets. The shuttle will be designed so that it can be maintained in a state of launch readiness for lengthy periods and yet capable of being launched within several hours notice. It is believed that the space shuttle through reuse, minimum postmission maintenance and refurbishment and aircraft-type checkout operations, could reduce the cost per pound of payload in orbit by a factor of 10.

An essential element in the continuing exploration and utilization of space in future decades is the space station. Such a station and the base which will develop from it will be the central carrier through which man can increasingly progress toward a fuller understanding of his world and the universe. The space station will have an initial crew complement of six to 12 people. A subsequent base could be a multipurpose facility in earth orbit housing a crew of 50 to 100 men. The station will primarily serve as the supporting platform for a very diversified group of scientific applications, and technology experiments encompassing nearly all scientific disciplines. The space station is being designed as a long-life, maintainable system for men working and living in space. Initially it is expected to operate in a zero gravity condition. The station and base will be quite autonomous, having on-board command and control centers and life support systems that are capable of regenerating the environment, and operating for extended periods. Flight crews using the station and base will be ferried to and from orbit by the space shuttle which will also provide the logistics support of the station and base and will be able to carry many of the experiment modules. Conceptual studies on these modules emphasize commonality so that four or five basic module types will be able to support the wide variety of experiments to be conducted at the space base.

Experiment Definition.—The early and accurate definition of the experiments and supporting systems in the space shuttle/station program is vital to eventual mission success and the achievement of program objectives. The major portion of the space station operation will be the conduct of manned observations and experimentation. These will impose major requirements on the space station and experiment module design and operation, and dictate an early definition effort. Experimentation definition funding provides the early impetus for acquiring the technical and scientific effort needed in identifying and verifying, through ground experimentation and analyses, those worthwhile experiments for conduct by man in space to assure an effective use of the space

station and the space environment. Fiscal year 1970 and 1971 funding will be used primarily to clarify and define candidate experiments and to determine the experiment groupings and the equipment that will most effectively use the space station.

Shuttle Engine Definition and Design.—Fiscal years 1970 and 1971 funding will provide for competitive engine definition contracts which will be of 11 months' duration. The studies will provide preliminary engine designs and specifications, define detail engine requirements, and provide program plans for future development. Fiscal year 1971 funding will also provide for the start of detailed design of the most promising engine candidates resulting from the engine definition studies. Design of the engines will begin in the last quarter of fiscal year 1971.

Shuttle Air Frame Definition.—As with the shuttle engine activities, the definition effort will be conducted through competitive contracts and will be of 11 months' duration. Definition studies are scheduled to begin in the latter part of fiscal year 1970. Fiscal year 1971 funding supports continuation of the studies initiated in fiscal year 1970 and will focus on specific point designs and supporting technology.

Station Definition.—The objective of this effort is to obtain the technical and program information needed for selecting a single design approach of a space station from alternate approaches available. The first phase of the two parallel definition studies is scheduled for completion at the beginning of fiscal year 1971. Funds are requested in fiscal year 1971 to exercise up to six 1-month extensions of definition studies with each contractor. In fiscal year 1971, definition studies of candidate experiment modules which have long leadtime requirements and those whose operations will impact the station design and operating mode will be undertaken.

Shuttle/Station Preliminary Design Verification.—While the definition studies of shuttle air frame and space station will identify systems, concepts, and techniques critical to their final design, additional trade-off analyses are required to verify contractor system selection before the final design criteria are established. In addition preliminary engineering designs will be initiated and advanced prototype testing conducted on selected long-lead systems to assure their timely availability. Fiscal year 1971 funding supports these activities and as the studies progress, those other areas that will be identified as requiring additional verification prior to initiation of detailed design. Systems common to both the shuttle and station that are potential candidates for this effort are: integration of the electronics systems, attitude control systems, and thermal protection systems. Proof-of-concept testing of the thermal protection systems will be conducted on subsections to provide verification of materials selection, fabrication and installation techniques, characteristic weight, and inspection and refurbishment needs. These tests and studies will greatly increase the assurance that the later detailed designing effort will be successful, and result in a more efficient and economical development program for the shuttle and station.

COMMITTEE COMMENT

Your committee recommends that the Administration request of $515,200,000 for the Space Flight Operations Program be approved. The House approval a total of $654,700,000, which is $139,500,000 more than the budget request. Some of these additional funds would be applied to the Apollo Applications project to augment the development and qualification effort on spacecraft, to provide increased assurance of mission success, to initiate experiments that were excluded due to previous funding limitations, and to initiate the design for a second mission. Your committee believes that the budget request for this project is adequate and that additional funding is not necessary at this time.

Additional funds provided by the House would also be applied to the space shuttle and space station project to provide for more extensive and inclusive anaylsis and to support the technological development of this project. Neither the space shuttle nor the space station are approved for development, and your committee believes the budget request contains sufficient funds for NASA to carry out phase B studies which will provide the technical information needed to determine whether or not to proceed. Therefore, the committee does not agree with the additional funds provided for this project by the House.

ON THE LINE

(By Bob Considine)

NEW YORK, April 27.—The hambone Congressional nonsense about cutting back on the Apollo program and its even more adventurous spinoffs should be dismissed before the public is led to suspect that the investment in Space is prohibitively high. It isn't. It just sounds high.

We reach positively for the moon and the planets at an annual cost of what we pay to fight inconclusively in Vietnam for two months. In the Space quest we have hardly dunked a toe in the cold and endless reaches of the cosmos. But some would say that's enough. The parochial cop-out is: "Well, we beat the Russians to the moon, didn't we? Isn't that enough?" The answer, of course, is no—we've barely begun. A resident of the next nearest heavenly body beyond the moon, looking down or up on the earth and its lunar satellite, would marvel at how we could live with a pimple like that attached to our nose. In other words, we would appear to be one. What's a quarter of a million miles in Space?

We're going to send men and probably women to planets millions of miles away, once we perfect nuclear propulsion to replace the lethargic pull of gravity and devise ways of surviving en route. And we're going to do it at what amounts to bargain rates.

At the end of last month, Lockheed and Boeing, working together, submitted to NASA their formal proposal for a Space shuttle vehicle. This would be the reusable space vehicle, the dream of every inventor since the Chinese who ignited the first sky rocket.

Briefly, this Lockheed-Boeing combine, joined by TWA, would produce a manned vehicle about the size of a 747 which would take off from Cape Kennedy or elsewhere with a smaller manned spacecraft riding piggy-back. When the first vehicle ran out of juice, it would break itself loose from its hitch-hiker and return to the nearest available airfield, landing like any large conventional plane. The parasite would have gone on into earth orbit on its own power, tending to a variety of jobs.

For example, it could deliver a new scientific crew and life-supporting supplies to an earth orbiting station, put up there to locate unprobed earthly ore deposits, agricultural opportunities, fishing treasures, gestating hurricanes and blizzards. Indeed, it could retrieve multi-million-dollar satellites that have exhausted their energies and return them to earth for a recharge, for use again. It could be the mailman, tending to his appointed rounds in Space, or the cosmic grocery store.

Most of all, it could come back and land like a 707 or DC–8 or something even smaller, and soon fly again. It is inevitable that this kind of shuttle will be developed. Not to do so would, in the long run, be like junking each $22,000,000 Boeing 747 at the conclusion of a routine flight across the ocean or the continent.

We have hardly scratched the surface of Space. Our cutting edge must be the shuttle. It will mean as much to Space as Henry Ford's Model T meant to the automobile industry.

It costs about $1,000 to put a pound of payload into earth orbit with the Saturn 5 booster. The reusable Space shuttle should cut that to less than $100 per pound. And increase the safety of the passengers. The best estimates in the aerospace business are that within 15 years normally healthy men and women will fly into earth orbit and back again with greater ease and frequency than do today's highly trained and superbly conditioned astronauts.

The shuttle isn't a new idea. It's as old as, say, Flash Gordon. Boeing has spent $24,000,000 of its funds, with no government assistance, on research and development of a use-it-again Space transportation system, Lockheed, builder of the C–5A, the supersonic all-titanium SR–71 jet, hundreds of Agenas and Polaris and Poseidon sea-based missiles, has been around for a time, too. The top men involved in the unusual cooperative effort, Lockheed's Dr. F. C. E. Oder and Boeing's George H. Hage, have a combined experience of half a century in flight research. As for TWA, it has a bit of experience, let's say, in matters concerning ground equipment, maintenance, manpower, and turnaround.

Turnaround is the name of this new game, and, in short, its salvation.

Mr. MONDALE. I yield to the Senator from Mississippi, and then I yield to the Senator from Arkansas.

Mr. STENNIS. Mr. President, I direct the Senator's attention to the figures here, because I believe there is error somewhere. The Senator's amendment applies only to the $110 million that is in the bill for this space shuttle and space station. Is that correct?

Mr. MONDALE. The Senator is correct.

Mr. STENNIS. And that has to do with definitions and studies of these particular items, just as in the case of a weapons system, when we get down to the definition of studies regarding a particular plane. So the Senator's amendment would take out the $110 million. Is that correct? And that is all it would take out.

Mr. MONDALE. It is my understanding that this $110 million is for what they call definition and design. This is where they take the research, and so forth, and sort of harden it into a configuration, and the other details preparatory to buying the hardware. I do not know whether I have stated it correctly.

Mr. STENNIS. I think that is correct. I want to distinguish it from the $80 million.

But back to the $110 million for a moment: That amount does not include any money for the development of the system.

Mr. MONDALE. Research and development. I think that is correct.

Mr. STENNIS. It does not reach that stage of development.

Mr. MONDALE. I think that is correct.

Mr. STENNIS. The $80 million that the Senator has mentioned—which his amendment does not touch—as I understand, is for basic advance research and technology in the broad field, and that will be undertaken whether or not we have this space shuttle and space station in the bill.

Mr. MONDALE. Might I respond to

that on the basis of a question which was put to NASA by the House committee. This was the question they asked:

Aside from the requested $110 million identified specifically for the space shuttle station in FY 1971 in the Space Flight Operations line item—

That is what we are talking about—

How much is included elsewhere in FY 1971 request for the space shuttle station and what is the tentatively planned use of these funds?

In other words, where else will money be spent on this program? This is the answer:

In addition to the $110 million identified in the Space Flight Operations in FY 1971 budget for space station and shuttle, a significant proportion of the Office of Advanced Research and Technology effort is applicable to these same two programs. In each program, between 30 and 40 million dollars will be applied.

That is the answer from NASA.

In addition to that, of course, this Skylab is part of the same research effort. But this will be an actual flight experiment in space.

Mr. STENNIS. As I understand, and as it was explained to us by our staff, this $80 million for the basic advanced research and technology—even though the special program we are debating would benefit from it somewhat, as many other programs would—is for basic research across the board, so to speak, and does not specifically relate to the design of the space shuttle or space station. Is that correct?

Mr. MONDALE. I would have trouble, for this reason. All I know about is their answer. They said that there will be $30 to $40 million for each of two programs, or over $60 to $80 million, which will be applied in space station and shuttle program and spent through the Office of Research and Technology. In other words, that money, even with the adoption of my amendment, must be spent on research in the program. But that may be different from the hard design program. I think it is, but my argument is that until we have been satisfied in the research field, until we have seen whether it is feasible as a system which assumes man's capacity to survive long duration flights, we should withhold this kind of starter costs which we may not have to make if we find it to be infeasible.

Mr. STENNIS. Mr. President, the Senator has made my point. The basic research will go on anyway, but it cannot be applied to the space shuttle, which cannot get the benefit of it, unless we have this program for the $110 million. We will not get the benefit or the fruits of it. If we are to have this space system, we will have to move first into the field of definition studies.

Mr. MONDALE. I thank the Senator.

Mr. STENNIS. I would say, is that not correct?

Mr. MONDALE. I would look at it somewhat differently. First, I do not see any point in spending $110 million for starting up costs on a system which a year from now we may find is completely unfeasible; in other words, that could prove to be a waste.

Second, I do not see any point in entering into a program which NASA estimates will cost $14 billion. We know how estimates tend to be below the mark.

I think that my amendment goes beyond that to the whole question of the ratio of unmanned instrumented flight, with the emphasis on scientific oriented research as against the tremendously expensive and dangerous and, I think, most unscientific and impractical manned-flight program.

Mr. STENNIS. Let me make this one comment. With all due deference to the Senator, I believe that we are talking about two different things, in that the $80 million is for basic research generally, and the $110 million is the first money that goes toward preliminary design and planning for the vehicle. To that extent, it kills the vehicle for the time being.

Several Senators addressed the Chair.

Mr. MONDALE. Mr. President, the Senator from Arkansas has been waiting. I am glad to yield to him now, and then to the Senator from Florida (Mr. GURNEY).

Mr. FULBRIGHT. Mr. President, let me say to the Senator from Minnesota that, listening to the debate today, and contrasting it to what I have been hearing and reading in the past few days, beginning with the war and the expansion of the war into Cambodia, the renewal of the bombing of North Vietnam, and now the shooting of our own students—unarmed, I may say—at Kent State University, and then last night 2 hours at the White House listening to the President and General Vogt and the Secretary of State describing in more detail how we are conducting the war in Vietnam and Cambodia, and now all morning spending 3 hours listening to the Secretary of the Treasury, and especially to the Senator from Delaware (Mr. WILLIAMS), who was, among others, closely examining and questioning the Secretary of the Treasury, I must confess that I feel very much as though I were Alice in Wonderland. There seems to be absolutely no relationship whatever to the world they were discussing and the real world in which I think we live.

I suppose, perhaps, that is one of the great virtues of the space program. It certainly is one real virtue. The only thing in cost effectiveness that is real is that it diverts our attention from the insane policies and activities the human race is conducting in this country and the world at the present time.

Mr. President (Mr. SCHWEIKER), the real value of these spectacular flights is to divert our attention from the real questions here at home. Of course, it also generates support for the program here at the Capitol.

The Senator from Minnesota stated that some scientists deplore the diversion of the program from real science to spectaculars.

Of course, the obvious application is that this all gets votes in both Houses. It gets the support of the people who watch television and so we provide a television show for them.

Had it not been for the failure of the last space flight, I think it would have gone off with little notice, and probably there would not have been nearly so much attention to it as there is now. As a matter of fact, the only application I can see, as to why the House insisted on increasing the budget, was that the last one failed. It aroused great sympathy. The President was greatly upset about it. There was even the threat of the death of three valiant and brave young men. That upset him and the country so much that we increased the budget. The killing of four young students did not seem to affect him. He remarked that—after all, violence breeds trouble, not appearing to be particularly concerned about those who were shot.

But, in any case, this program has nothing to do with the real life we live. The cost effectiveness we have been talking about, apparently, is only a cost effectiveness within the program. It has nothing to do with the cost effectiveness of this versus a program of decent education, or of any other of our domestic programs.

Whether this is worth more than the other kind of flight seems to be of very little importance.

Mr. MONDALE. I could not agree more with the Senator. As a part of my remarks, I included examples of what we could do with the $110 million. We could double the school milk program. We could double the clean air program and all sorts of other things.

Mr. FULBRIGHT. It is hard for me to think of anything that would not be more useful, as a matter of fact, in all the activities with which we are concerned.

The last time I heard cost effectiveness really harped upon was when Mr. McNamara referred to cost effectiveness for the TFX, and he demonstrated beyond a peradventure of a doubt that that was the most useful and most profitable waste of our money. I am not sure whether the Senator from Arizona supported that program, but my colleague from Arkansas did not. I never heard of cost effectiveness until Mr. McNamara came on the scene with his computers and his whiz kids. Then we were confronted with cost effectiveness in the Department of Defense. Every time he made a cost effectiveness study, the budget went up $10 billion. That was the way we saved money.

When he came in, it was around $50 billion, and when he went out, I believe it was $80 billion or $81 billion. That was because his cost effectiveness was so effective. It completely blinded and confused the Senate and the country.

That is what this is doing, of course.

But this morning it was impressive when we heard the Secretary of the Treasury. After all, he is a very able man and knows his field. He does not want to accept directly, at least, the responsibility for making these decisions on priorities which the Senate is specifically charged to do. It is all right for Mr. Spaceman to be cost effective within his department. But what is involved here is whether we can afford these wildly extravagant programs of over $3.3 billion.

They were talking this morning about the relatively small amounts that the Secretary was requesting and the Senator from Delaware, who we all know

cannot be charged with being a waster of the public's money, was raising most serious—as did others, of course—questions as to whether we could afford the small amounts. In one case, $25 million this year, $35 million next year, and $45 million the next for the International Bank. This sort of money is chickenfeed compared to this bill. The Secretary is seriously concerned over whether we can afford it.

These are the old programs. They do not have to speculate about whether it is profitable. The International Bank has made money. They have made well over $1 billion in profit. It does not involve guesswork.

I ask the Senator, Is not this debate about cost effectiveness utterly without real relationship to the other obligations of the Government? This program was started, was it not, at a time when we had no war? We certainly had no war going on of any consequence. The war did not break out seriously until 1965 under the administration of President Johnson. It was of minimal requirements before that.

A moment ago reference was made to the time when President Kennedy recommended this. I am surprised to hear some people recommending President Kennedy as a good authority for the space program. I was a little surprised that some would use him as an authority for their support of it.

Was that not before we engaged in the war in Vietnam?

Mr. MONDALE. The Senator is correct.

Mr. FULBRIGHT. Was it not shortly before the debacle of the Bay of Pigs? Was he not looking for an opportunity to draw attention away from his own mistake at the same time that he put troops in Germany and in South Vietnam?

I am not casting aspersions upon his judgment.

The point is that these decisions were made under circumstances which have long since passed. I do not think that today President Kennedy or anyone else would put two divisions in Berlin. However, under those circumstances he thought that he should. After he had met with Khrushchev, he was spoken of very harshly. I sympathized with him. I was not critical of him. I do not think he would do it today.

There were less than 800 or 900 troops in Vietnam when Kennedy came into office at the end of the Eisenhower regime. However, he did put approximately 15,000 troops there.

We come now to the space program. It seems to me to be absolutely absurd in view of the other demands made upon us. Does not the Senator agree that we ought to be concerned with these other matters?

This morning we discussed inflation. There is no real assurance whatever inflation can be controlled. It is not being controlled.

We asked the Secretary about the stock market. He agreed that the stock market reflected a collective judgment of leading economists and financial corporation executives in this country. That reflects their collective judgment.

We asked a witness before our committee why he did not get up and say that the war affected the economy in his judgment. He said:

> We are not accustomed to make political speeches. We speak through the market.

That is the way they express their confidence in the economy of the country. That does not mean that the economy will collapse. But in their judgment until the war in Vietnam is over, we are in for some very bad times.

We had the chairman of the largest private bank in the country, the Bank of America, appear before our committee. He said that without any question the war in Vietnam is a prime contributor to inflation, which in turn distorts the whole economy. This testimony was very thorough and was without any reservation.

Unfortunately, since the media has been so cowed by the President of the Senate, they did not report this since they thought they would be charged with casting reflection upon the administration.

I did not see anything about it in the papers. Perhaps it was carried in the papers in his hometown. But it was not carried in any prominent place that I saw because they thought that it might disturb matters, I suppose.

The Senator is so modest in his request. He ought to be providing that we cut the budget amount by $3 billion and provide $500 million.

I will support the amendment. Perhaps I will offer an amendment to give the Senate an opportunity to cut the amount further. I would not do it without his approval because he has done so much work on this subject.

I have observed in the last few days enough to indicate that there is a deepening lack of confidence in the economic community of this Nation in the soundness of our economy in the immediate future.

I do not say that some of our economic policymakers feel that way in the long run. The war will be over someday. In the meantime, however, we may have gone through a political and economic revolution. It is a big country and a rich country.

I do not know what they think other than that they think the economy for the immediate future is in for an extremely dangerous period and everything indicates that to be true.

I ask the Senator if he does not believe that the argument about cost effectiveness here, as related only to items within the budget of NASA, is beside the point. That is not really what we are arguing for.

The Senator would like to slow down the program.

Mr. MONDALE. The Senator is correct.

Mr. FULBRIGHT. The Senator would like to slow down the overall size of the budget for the program. This is one that bids fair to enlarge in size with respect to both of these programs.

Mr. MONDALE. The Senator is correct. I think that the Senator was not present in the Chamber when I made the first point that the Senator is now making, that I did not think cost effectiveness within an agency is the sole basis upon which we should make our judgment.

We have to ask whether the same dollars spent here could not be far more wisely spent in meeting human needs elsewhere or in reducing the pressure on the budget.

The reason I decided on $110 million is that it is not just an innocent $110 million. This item has the same potentially disastrous impact in terms of cost as the moon program.

NASA itself estimates $14 billion. This is the proposal made by NASA and by the industries that work with NASA for the program of manned space flight following the moon shots.

If NASA has its way, by the end of this decade, this will build up to a space budget of $7 billion a year compared to $3.5 billion today.

This is the project that I think we are starting to back into by the design commitment to be authorized in this bill.

This is now the time to make the decision. As the Senator from Arkansas knows, time and time again, we get into a program by appropriating $150 million 1 year and $150 million the next year, and then we find out what we are getting into and they say, "Wait a minute. You have spent this money now."

I think we ought to do it before it gets off the ground.

Mr. FULBRIGHT. Mr. President, I agree with the Senator. We have seen it happen time and time again.

I think this would be a good way to do it. Has the Senator already placed in the RECORD how much overall has been spent for the NASA program as well as the Apollo program?

Mr. MONDALE. I have not.

Mr. FULBRIGHT. Does the Senator's aide have the figure for the total space program? I am told now by the distinguished Senator from New Mexico (Mr. ANDERSON) that it is $42 billion.

Mr. MONDALE. Does that include the Defense part?

Mr. FULBRIGHT. That is just NASA. It does not include anything else. Does the Senator have an estimate of how much the Defense Department has spent?

I have been told by an aide that the Defense Department has spent $20 billion. So we have an amount of about $62 billion that has been spent.

But even if there are unknown benefits from the space effort, I think there are a lot of other things that could rank above them. I do not wish to delay the Senator. I may have a rew remarks of my own later.

However, does not the Senator think this kind of extravagance has something to do with the attitude of the very perceptive young people of this country who observe how their country is being run? They have this perception in a way we never did when I was that young.

I think it is not the war alone. The war is the primary reason for their dis-

illusion. But when they look about themselves and see the unmet needs in their communities, and then observe the massive spending for outer space, does not the Senator think this contributes to their disillusionment and they do not know what to do?

Mr. MONDALE. There is no doubt that that is true. I spend a great deal of time among young people. I believe they think we have lost all sense of proportion.

In the space program, we spend 3 times as much as we spend on title I to give schoolchildren a chance to catch up in elementary and secondary schools throughout the country. In this program, we are spending more to design a space shuttle than we are spending nationally to deal with air pollution.

The Senator knows how the young people feel about dealing with the environmental crisis. They think, and with good justification, that our priorities are completely out of focus in terms of the needs of the American people.

Mr. FULBRIGHT. It is because of this continued misjudgment with respect to what is needed in this country that causes them to question the establishment. They feel it is incapable of making decisions responsive to the real needs of the country.

Mr. MONDALE. I assume the Cambodian invasion is costing the country far more than the President saved with his veto of the HEW bill, far more. That money was for health, air pollution, and hospital construction. This money went to uncover some yet unfounded military headquarters in Cambodia.

I think many young people and others wonder about our sanity.

Mr. FULBRIGHT. I think they do, too. As have other Senators, I have received a great many letters about this matter and I have met with several groups who visited here. This afternoon I am due to meet one group visiting here from a Midwestern city. All they want is reassurance that there is still hope to preserve this system.

Mr. MONDALE. The Senator is absolutely correct.

Mr. FULBRIGHT. I have been making some speeches. I made one at the University of Massachusetts the other day, and I have made speeches to a number of smaller groups. I base all of my remarks on the fact that they must not give up hope for our institutions. They are the best we have. I cannot defend the policies of this Government, and I am not speaking about just this administration. I am trying not to be partisan. I did not feel any more friendly to the preceding administration, the Democratic administration.

My complaint is that the administration is following too closely the preceding administration when we thought there would be change. We are entitled to change, and we even thought there would be a change, especially in the war. There has not been enough change to justify their hopes. I think it is important to reconcile people to the hope that we can make the system work, that it can be made responsive to the needs of the people, but we have to change some of the programs, such as this program.

This program arose at a time when we could afford it. Then there were the dollar programs in the 1950's, which I supported, designed to siphon off dollars. I voted against the foreign aid bill last year, and I will vote against it again this year. But the dollar gap is no longer in existence.

Mr. MONDALE. Mr. President, will the Senator yield?

Mr. FULBRIGHT. I yield.

Mr. MONDALE. I spoke at about six of these Earth Day events all over my State. I was surprised at the number of young people who showed up. There were 1,000, 2,000, 3,000 at small schools. When we could come to questions and answers, almost inevitably the key question was not, "What shall we do about air and water?" but the key question was, "Is there any chance we will do anything?"

Mr. FULBRIGHT. The Senator is correct.

Mr. MONDALE. Does this Nation and its institutions possess the capacity and the will to deal with real problems as perceived by decent Americans?

Mr. FULBRIGHT. The Senator is correct.

Mr. MONDALE. That is what bothers the young people. It goes to a questioning of the processes of democracy.

Mr. FULBRIGHT. The Senator is correct. I have done my best to point out to them that violence is counterproductive and defeats their own ends. I said, "If you engage in violence and unlawful acts, you are helping those who are inimical to your interests." I tell them, "If you destroy this system you will not get what you want, but rather an authoritarian system." I have an understanding of the reasons why they are disillusioned. I see the reasons all around. We cannot change the old programs that got started under different conditions when we could afford it in the early days. When this started, I cannot remember anyone talking about pollution. It was there, but it had not gotten to the critical point of our being aware of it or trying to do anything about it.

It is not only the young people who are concerned. Many adults are sensitive to this situation. They feel we are off the track and that we have to get back on the track and that we have to deal with things that are important, things we can afford, and that we will have to put off these luxuries until a later date.

There may be a time when we can afford this program, but in the meantime, if we do not start to change this program and a few others, the situation will not get better. The same thing could be said of the SST and the ABM. That is a mindless continuation of an arms race for which we have no need. The SALT talks may have been placed in grave jeopardy by developments in Cambodia. I hope they have not been placed in jeopardy. The President said "no," but the statements by Kosygin were not encouraging. He raised a doubt at his press conference that they may be compromised by this expansion of the war. Nobody knows, but there is a possibility.

If we cannot turn this around and begin to cut off programs of this size which are spending our efforts and money in this area, I do not see anything I can say to young people. I do not wish to leave it as only the young people. The only difference between the young and the old is that the young are more unrestrained in the way they are feeling. In the many letters and thousands of telegrams that I received after Cambodia, they were not just from young people, but from all kinds of people of all ages and from all parts of the country.

The whole country senses this. The Secretary of the Treasury sensed it this morning, I think. Being a member of the administration he is a little restrained but he is not very happy about his problem of trying to finance this war, trying to finance this economy. Here we started out with a very optimistic projection of a surplus of $1.3 billion in the budget. Now, he is getting ready to come up and ask for an increase in the debt limit. The Senator from Delaware pushed him hard on this.

The Senator from Delaware said that would be $10 billion. The interest rate being paid by the Federal Government is 8 percent. If we borrow $10 billion, it means an interest cost of $800 million every year. That is the kind of cumulative costs being piled up.

Unless the war can be brought to a close and we can get back on the track, I think we are headed for a serious kind of depression. I do not like to use the word "bankruptcy," because this overstates it. Big countries like this nation do not go bankrupt. We just cancel the outstanding currency and start over again. That is not bankruptcy. That is called revaluation. We have new words for an old-fashioned concept. That is what we would be faced with. In fact, we are revaluating right now at the rate of 6 percent a year. We are revaluating everybody's pension, retirement payment, savings, and other securities at the rate of 6 percent a year as a result of the inflation we have.

So to come in and talk about this program as if it were the most important matter makes me think I am Alice in Wonderland and makes me think I am in a different world than I was in when I heard the President last night and the Secretary of the Treasury today.

Mr. MONDALE. I thank the Senator. I yield now to the Senator from Florida.

Mr. GURNEY. I thank the Senator for yielding.

I must say, after the general prophecy of doom by the Senator from Arkansas that it is hard to come back, to use the words of the Senator from Arkansas, to the mundane aspects of space, but I would like to return to the colloquy that the Senator from Minnesota had with the Senator from Mississippi. I understand from the Senator from Minnesota that he wants to strike out $110 million, but there was a statement by the Senator from Minnesota during the colloquy with the Senator from Mississippi, that there are other funds in the bill for the space shuttle and station. I wanted to add something to that. There are additional funds in the Office of Advanced Research and Technology. That is true. In the House hearings, on pages 1238 and 1239, there is a colloquy and there is some evidence of this money and how much actually goes into the new shuttle

effort. I am reading from the House hearings, on page 1239:

The major portion of the effort—

And that refers to the additional moneys that the Senator from Minnesota said were in the bill that might apply to the space shuttle program—

The major portion of the effort represents work which was already under way in OART before the space shuttle technology program was formulated. Although many program elements have been accelerated or amplified in support of the shuttle.

And here is the key testimony—

Only about $8 million of the $40 million is associated with the new shuttle effort.

That is the point I wanted to make in buttressing the colloquy with the Senator from Mississippi.

Any other money in this bill pertaining to the space shuttle—that is, the new effort—involves only $8 million. So if $110 million is stricken out of the bill, the space shuttle program goes down the drain.

Mr. MONDALE. Mr. President, if I may interrupt, I have to disagree with the Senator from Florida on a matter of fact. I do not think that is the situation. Once again I refer the Senator to the question put to NASA and the answer received from them on this very issue, appearing on page 12852 of the CONGRESSIONAL RECORD.

The question was:

Aside from the requested $110 million identified specifically for the Space Shuttle/Station in the FY 1971 Space Flight Operations line item, how much is included elsewhere in the FY 1971 request for the Space Shuttle/Station, and what is the tentatively planned use of these funds?

In other words, NASA was asked how much would be spent by NASA for this space shuttle station if the $110 million were deleted. This is the answer:

In addition to the $110 million identified in space Flight Operations in the FY 1971 budget for Space Station and Shuttle, a significant portion of the Office of Advanced Research and Technology effort is applicable to these same two programs. In each program between $30 to $40 million will be applied.

That refers to the space station and shuttle program.

That was the figure used in the House debate, and it was not challenged by NASA or in the debate. In addition, NASA will be testing the physiological possibilities or feasibilities of long-duration flights.

So there will be $80 million in research and another undetermined number of millions of dollars spent on this program which, in my opinion, is more than enough—because we do not even know it is going to work.

Mr. GURNEY. Mr. President, if the Senator will yield further, his observation and my observation are not in conflict at all, and the portion of the House hearings I referred to pertained to the $30 million to $40 million they were talking about. As the evidence shows, these were programs that were going on before the space shuttle. True, it can be utilized in the space shuttle work, but as far as a new shuttle program is concerned, only $8 million of that $40 million is associated with that work.

I think that is a very important point that must be understood; otherwise the Senate will get the impression that there is a whole lot of money in the space shuttle work, and that is not true.

Mr. MONDALE. I think that the misunderstanding arises from the fact that $80 million is being spent on research on the space shuttle program under the present project, even if my amendment passes. The difference is that the committee says that $8 million of that will be for new shuttle research. In other words, the greater portion of that research money will be used to continue ongoing shuttle research work, but it is still spent on the space shuttle program and a smaller proportion of the work will be applied to new kinds of research on the same program.

I yield now to the Senator from New Mexico.

Mr. ANDERSON. Mr. President, I hope we will always agree as we have during this debate. It is unfortunate that there was a difference in wording, but the Senate hearings show the wording was a little different. A question was asked by the Senator from Arizona (Mr. GOLDWATER):

What portion of the 1971 budget for OART do you estimate will be used to support technology directly related to the space shuttle and space station?

Mr. Nicks answered:

About $30 to $40 million in each area is related.

Mr. MONDALE. Does the Senator have the page reference?

Mr. ANDERSON. That is at the bottom of page 365 and the top of page 366 of the Senate hearings. All the research in these areas is applicable. Of course, it is all related.

We agree that it is different wording, which was not very fortunate.

Mr. MONDALE. I cannot go beyond this language, because I do not know what was meant, but in some way it is being spent on the program either directly or in a related way. I thank the Senator for pointing that out.

Mr. PROXMIRE. Mr. President, will the Senator yield? This will be the last interruption.

Mr. MONDALE. I yield.

Mr. PROXMIRE. In the first place, I would like to ask the Senator from Minnesota, What is the hurry? What is the hurry? What is the difference whether we fund this space station this year or next year? The important thing is that when we do it, we know whether it can work, whether the money will be well invested. So the worst effect of adopting the Mondale amendment will be perhaps a postponement of a year, and perhaps not even that.

We are not in any competition, as I understand it. This is not a military weapon. This is not a matter of our getting a weapon before the Russians get a weapon. It is not a matter of our funding school programs because children going to school next year have to have these funds.

So what is the reason we have to rush? I ask the Senator from Minnesota, is it not true that if we do not go ahead, whatever we lose will be only the matter of a year, and that year has no apparent value with regard to the space program?

Mr. MONDALE. May I say I think there is every reason not to go ahead, because—and I have heard no answer to this—there are many scientists and doctors close to this program who are concerned that long duration human space flight is not physiologically possible. We do not know the answer to that.

The $110 million is intended to develop a hard design—this is not for pure research; it is hard design, as the first step toward buying hardware for a space shuttle station—to achieve an objective that we may find out a year from now is physiologically impossible.

So, as the Senator points out, why not wait until we find out whether it is possible, and then pass on the broader question of whether we should do it? Frankly, I do not think we should be doing it, period. We have other areas in which money is much more needed. For example, unmanned instrument flight has prospects of much greater return at far less risk.

Mr. PROXMIRE. It is argued that if we decide later we do not want to go all the way to a space station, or all the way to Mars, we can stop.

Well, if we stop, what happens? We lose the money. We will be losing the $110 million we are putting into it. It will be gone, wasted. So the time to stop is now. If the Mondale amendment is defeated and we stop the space shuttle next year, we lose $110 million.

Mr. MONDALE. I do not think it will end there, because time and time again, we have backed into programs——

Mr. PROXMIRE. That is right; I accept that argument.

Mr. MONDALE. By buying long-lead items, and then suddenly the contractors involved become a pressure group.

For example, in Space Daily, which goes to all the space industries, they have an article critical of Representative KARTH and me. One of the points they make is that perhaps the space program has been unwise in not distributing its benefits more carefully to our State, because we do not have enough political resources to deliver the goodies to our own State.

They say "The record must also note that the ranking congressional opponents of the space program"—I am not an opponent of the space program, but I am an opponent of this program—"come from States whose economy gains very little from the space program." We in Minnesota got only 1.5 percent from NASA's budget in 1969, and Senator PROXMIRE's State got only 1.1 percent. That is their explanation for our motivation. Senator FULBRIGHT's State did not even get one-half of 1 percent, and Representative GROSS' State did not get one-half of 1 percent, either.

They did say this about Minnesotans:

These people are a hardy individualist stock, which perhaps indicates they have greater than average initiative and instinct for survival.

Mr. President, we are grateful to Space Daily for those observations about Minnesotans, but I think this underscores the fact that if we back into these programs, we get interests involved, investments involved, jobs involved, and corporate expectations involved, and it is 10 times as hard to stop them.

Mr. PROXMIRE. I remind the Senator from Minnesota that we have heard a lot of talk, in the 13 years I have been in the Senate, about wasteful spending. I think the term "squandermania" was coined, many years ago, for those who throw money away. This space shuttle is squandermania in its purest sense.

It seems to me that the vote on the Mondale amendment will be a clear test for the spenders. Those who vote for the Mondale amendment, on the basis of the arguments we have heard so far—though it is true others may speak further against the Mondale amendment—will be voting for a spending program for which they concede there is no benefit they can demonstrate. They want us to take it on faith. The best they can say is: "If we go ahead with this program, you cannot tell what is going to happen."

It seems to me that if there was ever an argument against spending, it is the argument that "We do not know what the benefits are." We may get none.

So the fundamental reason why I support the amendment of the Senator from Minnesota is that I will not vote for any spending program for any purpose, whether it is for space, health, education, welfare, or defense, until they can show me where the country is going to benefit from it. I have not heard a single argument to demonstrate any benefit. They simply say, "We cannot tell you that. Let us spend $14 billion, and we are sure something good is going to happen."

Mr. MONDALE. As Professor Brian O'Leary, professor of astronomy at Cornell University and a former astronaut, said—and many share his objection to the present orientation of the space program:

> We should encourage science looking for a mission, rather than a mission looking for a science.

I think that is what we have here, a manned flight industry which has pretty much completed its work on the manned moon program, and is now looking for another program. It becomes a case, then, of coming up with a mission, which they call the space station shuttle program, which will cost $14 billion to $24 billion—no one knows—and it is a mission now looking for scientific justification.

I think it should be the other way around. Dr. Van Allen and many others who are so able in this field are increasingly objecting to the nonscientific nature of the commitments and the expenditures which we make. In a recent article in the New York Times, it was pointed out that a host of scientists have quit the space program, objecting to this nonscientific oriented nature of the spending. Dr. O'Leary quit, the chief scientist of the whole program quit, the director of the lunar observing laboratory resigned, the principal investigator of the Apollo lunar geology department resigned, the curator of lunar samples resigned—over just this very reason of the failure to place science first in the planning of the programs. And particularly, as Dr. Van Allen and others have strongly objected to this preoccupation with manned space flight, which has the highest cost, the lowest scientific yield, and the highest risk to life, over and above the things which the scientists wish to do most.

They were trying to push this program into a series of rapid moon flights, over the objections of the scientists. The scientists said they did not have time to prepare the analysis from the previous flight, they did not have time to design scientific objectives for the next flight and how to achieve them, and yet the manned space flight program wanted to push on.

Each flight costs about a half million dollars—more than the total annual appropriation for the National Science Foundation. But yet they pushed on. I think there has been some slowdown recently, but this shows the tremendous influence of the nonscientists in the space program.

I think it is costing us an awful lot of money, and I do not want us to get into another program which has strong support from the space industries—industries which are now running out of business, or some of their business, because of the end of the moon flights—simply to have a new way of spending money in the name of manned flight, and thinking about something we can gain from it later.

I think the time has come to restrict that kind of effort.

Mr. HARRIS. Mr. President, will the Senator yield?

Mr. MONDALE. I am happy to yield to the Senator from Oklahoma.

Mr. HARRIS. Mr. President, I commend the distinguished Senator from Minnesota for the very timely fight which he is waging here.

Yesterday, the Federal Reserve Board lowered the margin requirements for the purchase of stock on the stock exchanges in an effort to shore up the stock market, which, as Senators know, dropped by some 19 points yesterday.

The ticker reports now that, while this move by the Federal Reserve Board caused the market to rally somewhat this morning, it seems to be dropping back down, indicating probably a realization on the part of investors in the stock market that there are serious problems with the economy which a little bit of cosmetics will not correct.

As a matter of fact, I think the Federal Reserve Board made a mistake in the action it took yesterday, because that action would tend to cause money, which is in such short supply for such essential needs in our country as homebuilding, to flow into investment in the stock market, a decision about the use of scarce credit which cannot really be justified, overall.

The point is that our economy is in very serious trouble. The budget which President Nixon sent to Congress reflected some decisions which have not really been borne out by subsequent facts. That budget overestimated expected revenue, particularly in regard to corporate taxes, and, of course, it also involved unjustified judgments about delaying personnel pay increases and enacting postal rate increases, and was based in part on a one-time sale of stockpile materials. There never was a surplus in that budget, and there certainly will not be a surplus in it unless the President of the United States and the Congress, wherever they can, agree to cut out nonessential expenditures. That is what is involved in this amendment.

Our economy is in desperate trouble. I believe we cannot continue the kind of confused and halfhearted measures we have seen on the part of this administration, wherein, as one columnist recently put it, we seem to be fighting recession in the morning and inflation in the afternoon, with no clear plan for combatting rising unemployment and the increase, simultaneously, in prices or for bringing down these outrageously high interest rates.

Unless there is a change on the part of the administration in its handling of the economy, I do not think we are going to see unemployment go down, but we are going to see it go up. It is already up now to the degree that more than 1 million people are out of work who were working when this administration took office; and I think we can expect to see it go to 5 percent or more, which is a tragic thing for the men and women and families that are affected by unemployment.

I think we are not going to see inflation brought under control through present administration policies; but, rather, while the rate may not be at 6 percent, as this year closes the indications are that inflation will be continuing at a rate of about 5 percent, which is intolerable.

Second, I think we are not going to see the Federal Reserve Board bring down interest rates, as from time to time they seem to have promised. I believe that we will see these interest rates continue at this level—at least, that is the indication we have seen up to now from the Federal Reserve Board—and I think that, too, is intolerable. Interest rates are at the highest level since the Civil War, and bank profits are the fattest in the history of this Nation, at a time when the demands for credit for pressing social ends are tremendously high and continue to be unsatisfied.

Congress must be responsible in fiscal matters, and I think that is the principal question before the Senate today with respect to the amendment offered by the distinguished Senator from Minnesota. The amount initially here is rather small, but the principal is rather large. The amount of money that ultimately could be involved unless this amendment is adopted is large, indeed.

So, I commend the Senator from Minnesota. I hope that Senators will support this amendment, so that, as the economy continues to worsen—as I am afraid it will, without some very strong and determined action by this administration—we will at least be able to say that we have done our part for the people of this country to try to reverse the aw-

ful inflationary recession in which the country now finds itself.

Mr. MONDALE. This $110 million, of course, does not affect the economy. Yet, what it stands for does.

First, if the project embodied in this $110 million is carried to completion, it will take a large chunk out of the hoped for economic growth in the future—from health, education, housing, dealing with environment problems, and social security. All the things we need most will be starved in part because we will have more than doubled the space budget because of the program we are now trying to start or could start on the basis of this $110 million. Thus, it is terribly important.

Second, let us look at our value systems here. This is $110 million for what they call a hard design for a space system which next year we might prove to be physiologically impossible. But we say we must go ahead. I do not know who wants space shuttles. I have been all over my State, and I have heard people ask about housing and about farm price support and sewer and water lines and student assistance and clean water and clean air, but I have never heard anybody demand a space shuttle—not once. But the space agency says we need $14 billion so that the people of this country can have available to them, through their Government, a space shuttle.

At the same time that the administration demands $110 million for this program, they are trying to cut out $80 million for school milk for 19 million children in this country. They are spending $5 million less than that for the entire national program for air pollution. What has happened to our sense of values?

Mr. HARRIS. The Senator is correct, because values are involved in this amendment, in addition to the state of the economy itself.

I alluded earlier to the fact that the budget proposed by this administration, unless there is drastic action by Congress or a fundamental change in the administration's position, will, as the first budget over which Mr. Nixon had control, be a deficit budget and not a surplus budget. One reason why that will be so, as I have said, is the shortfall in revenue as compared with the original estimates by the administration in its proposed budget. But if the economy continues to fall, if we continue to see an increase in unemployment, if we continue to see an increase in the idling of plant capacity and in production generally, that itself will produce less revenue than even could have been rightly estimated at the beginning of this year.

Then, what will be the response of the administration, if we have less to spend?

Mr. ALLOTT. I ask for the regular order, Mr. President.

Mr. HARRIS. May I close by asking this question, Mr. President?

Mr. MONDALE. I would be glad to yield for a question.

The PRESIDING OFFICER. The Senator from Minnesota has the floor.

Mr. HARRIS. Does the Senator feel that if there is going to be less money to spend by Congress, this is the way we ought to spend it—approving these millions in the space field, as opposed to the great social needs that exist in this country?

The PRESIDING OFFICER. Does the Senator from Minnesota yield for a question?

Mr. MONDALE. Yes, I have.

I appreciate the question propounded to me by the Senator from Oklahoma. I agree with him entirely, and I am very grateful to him for his support of my amendment.

I yield to the Senator from Illinois.

Mr. PERCY. Mr. President, I served for 2 years as a member of the Committee on Aeronautical and Space Sciences. I commend the committee and those members with whom I worked closely on the Republican side—the distinguished Senator from Maine, the distinguished Senator from Nebraska, and others—for the commendable job that was done over a period of several years in reducing the level of expenditures, which was at the on-going rate of approximately $6 billion annually, down to a level today of $3.3 billion. The committee, under the distinguished leadership of the Senator from New Mexico (Mr. ANDERSON) should be commended for this. The distinguished Senator from Minnesota (Mr. MONDALE) played a very important role in selectively paring down this level of expense. I commend him today for pointing out a program that could be considered for reduction.

I feel that the Senate, in addition, should be commended for opposing the increase passed by the House, of $268 million. The Senate committee has even cut the President's budget by $17 million.

I am concerned about many other needs that are not being met in the scientific community for basic research as well as in the fields which have been mentioned in the area of human needs. But, Mr. President, I feel that elimination of this particular program would endanger another program which I believe most of us in the Senate wish to move forward. That is the program of international cooperation in space. I feel that the resolution which I introduced in this area, cosponsored by the majority and minority leaders, and cosponsored by the distinguished Senator from Minnesota (Mr. MONDALE), indicates the desire to see this country move forward in cooperation with all the nations of the world who wish this cooperation in space programs. We should seek to find ways to reduce the duplication and expense of personnel and money, and see whether we cannot find a basis for cooperation in the exploration of outer space to share with all mankind the knowledge we have gained.

The recent hearings of the Senate Committee on Aeronautical and Space Sciences on the subject of international cooperation in space provided a wealth of data in our efforts on international cooperation in space to date and highlighted some of the new opportunities we have at this time. One of the most promising opportunities is for international participation in the development of the space shuttle and the space station. I am convinced that it would be harmful to the future of international cooperation in space if the design studies and other preliminary work on the space shuttle and space station were to be cut off.

After the successful Apollo 11 mission, which clearly demonstrated to all nations the ability of the United States in the development and operation of large space systems, the President instructed the Administrator of NASA, Dr. Thomas O. Paine, to meet with the space authorities of all the principal nations which might be interested in entering into expanded cooperation arrangements with the United States on future major space programs. Dr. Paine has now visited the principal nations of Western Europe, Canada, Australia, and Japan.

The representatives of other nations have recognized the logic and importance of the integrated long-range plan developed by the President's Space Task Group and endorsed in his statement of March 7, 1970. They recognize the key role in this plan of the reusable space systems based on the space shuttle and the space station. My understanding is that the factor of saving would be a factor of 10 to 1 in shots using reusable rockets. They see in the development of these systems an unparalleled opportunity to share in the benefits as well as the costs of exploiting space for the benefit of peoples everywhere.

Many nations have sent representatives to key NASA meetings on the space shuttle and space station. Cabinet ministers in Germany, France, and the United Kingdom, responsible for science and technology, have begun a series of meetings on the prospects and have expressed positive interest in substantial financial and technical contributions through participation in the development of these key space facilities of the future. The two regional space organizations in Europe, the European Space Research Organization and the European Launcher Development Organization, have now taken early concrete steps at their own expense toward establishing a basis for substantial future participation. Both have already authorized funding for studies of important elements of the shuttle system and station which might then be developed in Europe.

Thus, prospects appear to be good that one or more other nations or groups of nations will be willing to participate in these programs to the extent they can. But they must look to the United States, however, for leadership and for providing for detailed studies of alternatives and for assuming a major role and responsibility for carrying them out. If the United States should decide at this point not to proceed with the next steps in the study and design of the space shuttle and space station, we will stand to lose the finest opportunity we are likely to have for many years to pull the talents, resources, and support of many nations together in a truly international effort.

I believe, Mr. President, that this consideration should weigh heavily in the decision the Senate makes today on the funds recommended by the committee for study, design, and experimentation

related to the space shuttle and space station programs. Taken together with the other strong reasons for moving ahead with these projects, the possibilities of meaningful international cooperation are a convincing reason for rejecting the proposed amendment.

This does not mean that I give unqualified support to the space shuttle-space station program in the future. My support will be contingent on actual budget sharing by other countries, not just scientific cooperation.

International cooperation must mean international sharing of costs.

Mr. President, I would be remiss at this time if I did not express my great admiration for the Administrator of NASA, Dr. Thomas O. Paine. He is a dedicated and competent executive, highly respected throughout the governmental, scientific and business communities. He has performed brilliantly in the face of great difficulties, not the least of which is the problem of maintaining high morale in an organization whose budget has been reduced from a peak annual expenditure of $6 billion to $3.3 billion and whose total personnel has been reduced from a peak of 440,000 to 190,000 now and a projected 144,000 as of June 30, 1971.

It was essential that we make these reductions and I worked as a member of the committee to bring some of this about. But it is also essential that we maintain a space program that can be leveled off and sustained over a period of years. We are fortunate to have Dr. Paine administer this program. I hope that he will continue to look for ways to eliminate programs on his own initiative within NASA that should not have as high a priority as other urgent national needs.

Mr. President, I should like to conclude, if I may have an additional moment to indicate that by opposing the amendment of the Senator from Minnesota, I do not mean to say that I would give unqualified support to the space shuttle station program in the future. My support will be contingent on actual budget sharing by other countries, not just scientific cooperation by them.

They have evidenced their interest in this. It is therefore time for them to say what portion of the cost they will be willing to share, inasmuch as they will be sharing the glory and the honor as well as the information that would be developed.

International cooperation must mean the international sharing of costs as well.

I thank my distinguished colleague for yielding to me.

Mr. FULBRIGHT. Mr. President, in that connection, I wonder whether the Senator from Minnesota or the Senator from Illinois could give me any assurance that any of the countries have pledged any tangible amounts of money to pay the bill. I am quite sure that they would be glad to share in whatever publicity arises from this, but I have not heard any of them putting down any money of any consequence whatever.

I also believe that the Russians, having tried this out, have decided to deemphasize it. I have not noticed any of their men landing on the moon lately. In fact, I have not heard that Russia wants to send a man to the moon lately.

Mr. MONDALE. As a matter of fact, we would wish to cooperate in space, it is they are the major power with whom fair to say there has been virtually none of it from the beginning. There is none now. There have been some preliminary talks from time to time, but there has been virtually no cooperation.

Mr. FULBRIGHT. Have they not downgraded their own program? They have not tried to go to the moon recently that I have heard of, have they?

Mr. MONDALE. I am not in a position to know——

Mr. FULBRIGHT. Has the Senator heard of it lately?

Mr. MONDALE. No, I have not heard.

Mr. FULBRIGHT. That is all I mean. They did put up sputnik, of course. The original sputnik shocked this country. We had such a view of our apparent inferiority when we saw sputnik go up. It was just a small ball, was quite primitive, but still it shocked the country. That period was called the missile gap, I believe, which proved to be unfounded; but, anyway, it gave the impetus to this and we have never gotten over it.

The Russians, in the meantime, have discovered that this is a poor investment. Therefore, and in fact, they have downgraded their efforts. They do not seem to want to go to the moon. So far as the Senator knows, that is a fact, is it not?

Mr. MONDALE. I believe that to be true.

Mr. FULBRIGHT. If they had put a man on the moon, we would have heard about it. They would not want to keep that a secret, would they? I have not heard of any Russian program to send a man to Mars. I do not know where we can pick up any substantial amounts of money for this kind of extravagance.

Mr. MONDALE. Mr. President, it seems to me that if we want space cooperation, we should begin with projects that would attract cooperation, that would be meaningful to them in their lives, as well as ours. I do not know why they would want to put up any substantial proportion of what could be a $20 billion or $25 billion expenditure for space shuttle station.

Mr. FULBRIGHT. Has the Senator heard of any of them coming forward offering even $1 million, or $1 billion?

Mr. MONDALE. There is a requirement in the International Space Cooperation Program that we cooperate with other countries. I do not think that amounts have been——

Mr. FULBRIGHT. Who pays most of the bills on this?

Mr. MONDALE. We undoubtedly do.

Mr. FULBRIGHT. This talk about cooperation, if we are talking about cooperation, what portion of the money is involved there? If this did not cost anything, I would not be disturbed about it, but we cannot afford it. That is the plain fact of the matter, because of the state of the economy and the state of our budget.

Mr. MONDALE. Mr. President, the Senator from Illinois (Mr. PERCY) points out, I think with some justification, that the Space Committee, under the chairman's leadership, has actually clipped the space budget by $2½ billion; but we know how it builds up, and the fact is that the space agency wants to build, so that by 1979 we will be back up to the $7 billion—nearly double what we are doing today.

Mr. FULBRIGHT. We have already spent $55 to $60 billion on the program. I do not see it. I believe that cooperation is fine. I believe in cooperation, if it is real, but I do not think we are interested in paying the cost of this bill entirely, while they enjoy all the publicity.

Mr. MONDALE. Mr. President, I would be delighted to yield the floor now. I have been on my feet for over 2 hours.

Mr. GOLDWATER. Mr. President, if the Senator from Minnesota will yield, although if the Senator feels like that, perhaps I had better not ask my question, under the circumstances; however, has he had a chance to see Newsweek magazine's Periscope, under the short article, "Soviet Space: Down to Earth"? Let me read it:

> The Soviet Union is pushing hard to orbit the first manned earth-resources satellite within the next two years. The vehicle would carry infra-red cameras, microwave radar and high-resolution film to collect data on crops, mineral deposits, ocean currents and fishing grounds. The Russians also have a long-range project for orbiting an "institute in space" that would dwarf the three-man U.S. skylab planned for 1973: their "institue" would be manned by 24 pilots, scientists and technicians at a time. They would shuttle back and forth on six-month tours of duty.

Has the Senator from Minnesota seen that?

Mr. MONDALE. I have not seen that.

Mr. President, I yield the floor.

Mr. HOLLAND. Mr. President, I am very sorry that some of my distinguished friends are so pessimistic about this Nation and the world, and about everything else they have discussed this afternoon. I hope they will get a little more optimistic before we get through with this debate.

In case they do not desire to do so, I suggest then that our good friend Dr. Pearson downstairs might have a little pill that might be helpful to their feelings in this matter.

The fact is, Mr. President, that there has been nothing that has happened that has raised the spirits of this whole country and the prestige of this country in the world more in recent decades than the Apollo 11 landing and the Apollo 12 landing. And that was followed by the rescue from what looked like a loss in outer space, at a distance of nearly a quarter of a million miles, of three fine men who, intrepidly, had undertaken something that they knew was terribly dangerous. They were brought back safe and unhurt to earth.

If anything, that prestige was raised because it showed that not only were we able to succeed, but we were also able to build a great degree of success out of what looked like an abject failure.

I hope our friends will not be so pessimistic as they look at the space pro-

gram. Only a few days ago Dr. Paine, the head of the space program, appeared before our committee to give—it took about 2 hours to read, and he did not read it all—a résumé of the contributions made by the space program to our Nation and to the earth's totality of knowledge.

He mentioned, of course, the communications program which is such a tremendous success. He mentioned the weather program. And anyone living in those areas that have been threatened and have soon been overcome by hurricanes, who had a chance because of the early warning given through the satellite and the Weather Bureau to save themselves and their children and some of their most precious possessions; those people would be hard put to say that the space program had not given us great values.

He mentioned, but did not elaborate upon it, the planes which used to look down upon all of the earth, including that part occupied by a nation that is not friendly to us. We have not had to have any U–2's in recent years. Everyone who knows about the situation knows why that is true.

It is because we are now constantly receiving information from any part of the globe where anything of any consequence that might be harmful to us might be developing.

He told us about the matter mentioned by the Senator from Arizona, about the making of completely fireproof clothing, furniture, and homes which will mean, of course, a great deal to the life and the health and the continued existence of men, women, and children.

Mr. President, anyone who tries to evaluate the space program without reading that treatise by Dr. Paine would make a grave mistake.

I want to tell my distinguished friends who are so pessimistic this afternoon that this volume is expected to be published soon and made available through the Space Committee.

I have had so many requests already for information along this line that I have placed a sizable request for copies of the hearing which will soon be published. I will send them out to citizens of my State or to others who may request such information, as long as my allotted supply lasts.

The blessings that have been brought to humanity through the American space program have been practically innumerable and have been of immense value.

And now to another point, Mr. President. The next thing I would like to mention is the economy of the pending bill. I appreciate the fact that the distinguished Senator from Illinois made some reference to that a while ago. While the other House in its wisdom—and sometimes it may be wiser than we—reported and passed a bill that authorized $284,925,000 more than the amount reported in the Senate bill, and while the Senate bill not only is that far below the House bill, but also is $17,050,000 below the budget reported by the President, which was stated by him to be a sparse budget and reflected a great reduction in the size of the program as originally requested by NASA, I think it is appropriate to mention with some pride the economies effected by this committee.

Our distinguished friends, the Senators from Wisconsin, Minnesota, Arkansas, and perhaps others, seem to reflect an opinion that this bill, as they say, is an expensive bill, when to the contrary it is, as I have just stated, more than a quarter of a billion dollars below the House measure already passed and $17 million below the President's budget.

Mr. CANNON. Mr. President, will the Senator yield?

Mr. HOLLAND. I yield.

Mr. CANNON. Mr. President, is it not also fair to point out that the NASA budget is also $1.164 billion below NASA's request in the budget request? Is it not $1.164 billion less than the amount they thought they ought to have to carry out the program?

Mr. HOLLAND. The Senator is not only correct in his statement, but that also reflects some credit on the budget and on the President. Also it shows that the NASA people have cheerfully accepted this action. They are willing to recognize the state of the economy of the country and to go along as best they can.

My distinguished friend, the Senator from Minnesota, mentioned several of the scientists in the NASA department who had resigned because of their disagreement with the scientific objectives.

I want to say for the record that the small number who have done that is exceeded by the hundreds and perhaps thousands of people who have lost their means of livelihood because of the reductions in the space programs.

Only this morning, my distinguished colleague, the junior Senator from Florida (Mr. GURNEY) and I in a conference with a Representative from the State of Florida, who represents directly the space center area, were told by him that after a survey he was able to say that there had already been 32,000 people adversely affected by the fact that they had lost their jobs in that area.

We do not come here with hat in hand asking those people be reemployed. We will try to help them in every way that we can. But we know something about the state of the economy of the Nation. And we realize that there has to be a reduction every place possible.

I see that my distinguished friend, the Senator from Mississippi (Mr. STENNIS), is present in the Chamber. He not only voted for this program, but he also contributed greatly to the bill worked out in the committee.

I think the Senator from Mississippi would not object to my saying on the floor that he did so although he knew and was told—and this was discussed by the committee with regret—that the great facility in his own State which has contributed so much to this program, particularly to the Saturn V part of the program, will have to be put on a mothball basis late this year because its function will have been completed as of that date.

The Senator from Mississippi is not complaining and he is not getting sour because his own State is badly affected. But he is going ahead to try to support and is doing much to support this worthwhile effort which is contributing so much to the knowledge of this Nation and to the service of our people and to the giving of greater prestige to our Nation throughout the earth. It is giving the people of the Nation a sense of the attainment and accomplishment which we have enjoyed and which has made us very expansive about the success of our astronauts.

The third point that I make is the fact that right in our own State we have grave needs which, incidentally, were so well shown before our committee by my distinguished colleague, the junior Senator from Florida (Mr. GURNEY). The visitor's center at Kennedy Space Center was visited by 1.1 million visitors last year, and the number is increasing every month.

They need added facilities. They do not have enough facilities to take care of the people going down there now.

In committee, and other members of the committee can bear me out on this, when the markup was made we did not attempt to put in anything to help meet that need so ably shown by my distinguished colleague, because we realize this is a time when we must practice economy. My distinguished colleague showed a need for an additional $2 million, as I recall, for the increase in size and capacity of that great visitor's center, and undoubtedly it will have to be increased at some time.

We know something about the state of the economy of the Nation and we are not asking for things which are not absolutely necessary; but we are asking for things which, in our judgment, are extremely necessary. One of the things is the very matter covered by the amendment proposed by the distinguished Senator from Minnesota, who would strike from the bill something that at least the Senator from Florida thinks would be very hurtful to the program, although it will not affect him or his State at all because the work would be done elsewhere and not in his State.

Mr. President, I think our good friend from Minnesota made real contributions to this program when he was a member of the committee. I am only sorry he did not remain on the committee. My seat at committee hearings was next to him and I frequently profited by that proximity. If he had been there he would be on the floor fighting for the very thing he is trying to strike from the bill by his amendment. I regret he is not still on the committee.

What is he trying to strike out? He is trying to strike the whole program of planning for the program of the space station and the space shuttle, which has so much to do with determining whether we are going to operate more economically in space.

One of the things that has distressed this committee and the NASA people in general, has been the fact that these expensive missiles are not recoverable and cannot be used again; that there is no

possibility of shuttle service under which they can be recovered and reused.

The entire program has to do with the question of whether or not such boosters can be developed which would be much cheaper in the beginning and would then be recoverable and reusable. That program is of importance to this Nation and to the world because we are not through with the space program.

No one suggests that Columbus would have been satisfied if, when he reached Santa Domingo he had gone back to Spain and just told them about it. That would have been the end of the whole thing. We are certainly not through with space—we are going to continue this program through many different fields of endeavor. One of those fields of enormous importance is the question of whether we can operate much more economically than has been possible up to this time.

The $110 million would be to plan, experiment, and to look carefully to see whether a shuttle service and a space platform in low earth orbit is possible of development.

Mr. LONG. Mr. President, will the Senator yield?

Mr. HOLLAND. I shall yield to the Senator from Louisiana but first I wish to add one thought.

The question of trying to get much cheaper programs that will give us the same or improved capability is very vital and it does not seem to have been touched on at all by the Senator from Minnesota. That is the essence of the space shuttle and the space platform program.

I yield to the Senator from Louisiana.

Mr. LONG. Mr. President, as I understand it, each time we go into space it costs us about $300 million. Most of the expenditure is spent on the craft that is going to go out there and hopefully come back. As I understand it, when the space shuttle is developed, it would mean that after the first trip, which might cost $300 million, subsequent trips would cost less than 10 percent of that figure. So on every subsequent trip there would be a savings of at least $270 million. Therefore, if we are going to make, let us say, maybe 40 or 50 trips in the future, it would be a savings of many billions of dollars because we would spend $110 million to find out a way to develop something which would save us more than twice the expense of the development in the first year. Then, on the third, fourth, fifth, sixth, seventh, eighth, and ninth trips and on down the line, there would be a savings each time a trip was made.

Mr. HOLLAND. The President's task force thinks it may be possible to recover and reuse these vehicles 100 times. That is very much in the future.

The point is that unless we get started on it we will never attain that degree of economy which we think should be attained. We agree with our friend that the program has been expensive up to now and we do not want it to continue to be so expensive and we are supporting an effort which we think will make it more economical and less fragmented.

Mr. LONG. Mr. President, will the Senator yield?

Mr. HOLLAND. I yield.

Mr. LONG. To put it another way, one might say that the potential savings might be about 100 to 1 and now, looking at what the potential savings are and the chances of success, any solid person looking at that program would conclude that there should be developed a space vehicle capable of returning and being used again.

Mr. HOLLAND. That is the objective. We do not know how great the savings would be. We do not know whether it would be a savings of 90 percent of the cost as some have suggested or a greater percentage as the Senator has suggested. Those are some of the facts we want to obtain. We want to know how to do this and how much we can save.

The President's task force thinks it is possible to do and they recommended we start. That is what the $110 million is for. I do not believe anyone stated here today that the inception of this matter comes from the President's task force which embraced some of the leading scientists of the country.

Mr. LONG. It seems to me if this Nation had no more confidence in its ability to develop something than the Senator from Minnesota does, we would not be in space to begin with. We would not have developed atomic energy. There are a great many things we would not have done. There are other feats we have achieved such as finding a cure for polio which virtually eliminated that disease; conquering space to the extent we have; and harnessing atomic power.

Would the Senator think the capability to develop a vehicle to go into space and come back, would be an impossible feat, compared with other things our scientists have done?

Mr. HOLLAND. To my finite mind—and it is a very finite mind in this field—it would seem to me to be not as extravagant a hope and ambition as some of the other things which we have developed and which have meant so much to this Nation and to the world.

Mr. STENNIS. Mr. President——

Mr. HOLLAND. I shall be glad to yield to the Senator temporarily.

Mr. STENNIS. I thought that the Senator had finished.

Mr. FULBRIGHT. Mr. President, will the Senator yield?

Mr. HOLLAND. I am glad to yield.

Mr. FULBRIGHT. The remarks of the Senator intrigued me very much when he suggested that those of us who looked at the world as we do ought to go see Dr. Pearson. Did he imply that we ought to get some LSD?

Mr. HOLLAND. No; I was thinking of the old-fashioned days of calomel, or perhaps something else that would have equally beneficial results.

Mr. FULBRIGHT. I think LSD might do the work. The only other thing that might reconcile me would be if I had Cape Kennedy in my State. That might reconcile me a little to it. I am not sure.

Mr. HOLLAND. I am glad the Senator said that, because some of us felt that might be one of the reasons for his obdurate position on this particular subject.

Mr. FULBRIGHT. If the Senator will allow me——

Mr. HOLLAND. I am glad to yield to the Senator.

Mr. FULBRIGHT. It is true I do not have Cape Kennedy. I think that is exactly the reason why I have no undue influences upon my judgment. I can look at it objectively. I recognize that we are all elected by our constituents, and if $1 or $2 billion were being spent in my State, I would be embarrassed by the fact that as a result of my action there would be thousands of voters on the payroll. This is a fact of life that affects every one of us. It is why it is almost impossible to cut out Defense Department projects and why the space program has such strong advocates and defenders. This is a fact of life. It is no reflection on those who are from those States. It is a different question from whether they had anything to do with getting it there. There are many people with high salaries who vote in their States, and if it were in my State, I might be embarrassed. I am not so sure, in times like these I would be willing to jeopardize the safety of the country for a cause like that.

Mr. HOLLAND. I thank the Senator. I want to remind him that we have no water power projects in Florida, but both in the Public Works Committee and the Appropriations Committee I have voted, not just for millions of dollars, but for billions of dollars, for development of water power projects in his State. It never occurred to me to put it on a local basis.

I am sure the Senator is indulging in a pleasantry in what he says. After all, we are thinking about the development of our Nation. It has not hurt my feelings at all to have voted for great dams that created beautiful and scenic lakes in the Ozarks and in the State of Arkansas. I have been there, and long to go there to catch the finny tribe that are found therein.

I have not had to explain to my people why I voted for them, because my people think nationally, and I think the Senator from Arkansas thinks nationally. I am not going to be uncharitable to him, but I hope he will get a more optimistic view about this program, which has meant so vastly much to our Nation and to science and to every living man, woman, and child in this Nation, including those fine people in Arkansas, which he so ably represents.

Mr. FULBRIGHT. May I say that my pessimism was not just to this program. My pessimism is about programs such as this one which create conditions which this Nation cannot afford. If we had no other use for our money, I would not object.

My pessimism does not relate just to this program, but to the state of the country. I had the authority of the Secretary of the Treasury this morning, which I hope the Senator will read, as well as Mr. Lundborg, chairman of the board of the largest bank in the world, and a lot of other people. I am not alone in this pessimism. I do not think the Secretary of the Treasury or Mr. Lundborg is in need of calomel. What they need are the resources and the money with which to pay the bills of this country.

Mr. HOLLAND. I shall, of course, read the hearings, but I would rather the Senator tell it, with his mellifluous words heard by my ears, because it is more interesting than to read it in black and white. So, as far I am concerned, I appreciate very much what the Senator has said.

Mr. FULBRIGHT. I thank the Senator.

Mr. HOLLAND. To conclude rather quickly, where are we now? Well, we have seven Saturn V's bought and paid for and ready to use. Most of them are going to be used for missions that have already been cataloged and that will be completed, as I recall, in the early 1970's. The record will show how they will be completed.

We have seven Saturn 1–B's, also completed and ready to be used, and scheduled to be used in particular ways. And that is the end; there are no more Saturn launch vehicles being produced.

But I want to make it clear that Congress is not approving a space shuttle program now, and the committee said so very clearly in its report. I refer every Senator to page 18 of the report:

Additional funds provided by the House would also be applied to the space shuttle and space station project to provide for more extensive and inclusive analysis and to support the technological development of this project. Neither the space shuttle nor the space station are approved for development . . .

We are simply approving the research and the effort to find ways to do the job. We are not going as far as the House has gone. Apparently our distinguished friends do not seem to realize that. We have cut the bill more than a quarter of a billion dollars below the one passed by the House a few days ago. I repeat that language from the report:

Neither the space shuttle nor the space station are approved for development . . .

It is only research and study that this bill takes care of. I want to make that completely clear.

My distinguished friend from Minnesota seems to think that we are commiting ourselves to a course that we would have to follow. We are not doing any more than providing for the exploratory work.

To the credit of the Senator from New Mexico (Mr. ANDERSON) and every other member of our committee, when the distinguished Vice President—and I am sorry he is not here—in his optimism after the landing of Apollo 11 said, "Let us go to Mars tomorrow," or next week, or some time in the early future, every member of our committee turned thumbs down on that program and then refused to recommend to the Senate that it be committed to any manned interplanetary space program at this time.

Our committee has been a conservative committee and an economical committee, and this is a conservative bill and an economical bill. I just hope my distinguished friend from Minnesota, whose absence on our committee I have regretted these last few years, will realize that it is an economical bill. It is not committing us to anything more than to find an economical way of doing what has been costing too much and what the President's task force thinks will reduce the cost very much.

The reduction I have heard most about is to 10 percent of the cost. My distinguished friend from Louisiana suggested a greater reduction. I hope he is right, but if we can get a reduction to even 10 percent of the cost, what a vast saving that will be in the whole program. I believe it is worth examination by our engineers and scientists. Many of them are still with the program, ready to work on this particular problem which is challenging us now. I hope we let them do it.

One more point and I shall be through: That has to do with the interlocking nature between this program and the defense program. I am sorry that I cannot disclose some of the answers made to us at the hearing. I refer Senators to pages 880 and 881 of the printed record of the hearings, in which our distinguished ranking minority member of the committee, the Senator from Maine (Mrs. SMITH), who is also a ranking member of the Committee on Armed Services, and knew much more about the MOL effort, abandoned some months ago, as Senators will recall, was doing the questioning.

I refer to the questions that she asked our witness, Dr. Foster, who, as I recall it, is the head of research—let us see how he is described. He is described as the Director of Defense Research and Engineering for the Department of Defense. He was before our committee to tell us of the interlocking nature of this program with the defense program.

I ask that Senators look at both of those pages, 880 and 881, and they will see how closely related this is to the defense program in its original effort to have a manned orbiting laboratory, which was abandoned just a few months ago, and was costing $500 million a year. Dr. Foster tells us here how he feels this program is related to space exploration, space investigation and experimental work, and that he particularly supports this part of the program.

Senators will see the quotation. I am not going to read it all. Let us read the opening suggestion of Senator SMITH. I hope she has no objection:

Senator SMITH of Maine. Perhaps for the record, Dr. Foster, you might give us in a little more detail, keeping the security aspects of the subject in mind, as to just how the Defense Department can see a possible future military use, for the space shuttle.

Now, I could not quote everything that was said, because Senators will note how much was deleted in printing this record. I see five deletions on the next page, which would show the interlocking character of the MOL, which was supposed to have our observers going across territory that might be hostile to us periodically, and peering down to see what they could see, using both their good eyes and the various glasses that they would also be furnished with, of things that might be of interest to us.

Dr. Foster replied in a good many ways, but I am going to read just one of them, which is what comes immediately after that suggestion by Senator SMITH.

Dr. FOSTER. I would be very pleased to put that in the record.

Here is what he put in the record:

Once an economical and operationally effective STS—

That is a space transportation system, I am told by my distinguished friend from Nevada, who knows the military terminology.

Once an economical and operationally effective STS is developed, we would expect to use it to launch essentially all DOD payloads into earth orbit. We hope thereby to reduce DOD launch costs by an order of magnitude.

He does not say how much. I am sorry he does not give us the percentage, but perhaps that was a military secret also.

Not only will we economize from the point of view of reusable launch vehicle, but significant savings can accrue because repair and reuse of payloads will be possible and payload design criteria could become less stringent. In addition to all of this, we would expect to benefit from the STS technology resulting from NASA's development efforts.

That is how close this is to a very important strategic matter, affecting our national security, and of great interest to the Department of Defense.

I shall not read much more of it, but on page 881, I note this question by Senator SMITH:

Senator SMITH of Maine. The study is not aimed, as I understand it, so much as to facilities as it is to people—that NASA do for the Defense Department and the Defense Department do for NASA. Is that correct?

Dr. FOSTER. Yes, that is certainly true. It is a question of whether or not a management change would affect the funding. This, of course, is not simply a matter of NASA and the Department of Defense. It also deeply involves the contractors—whether there should be one prime contractor that handles the whole thing, as compared to the several contractors now involved.

Mr. President, I hope Senators will read that full exchange, insofar as they can—much of it is deleted, as I have already stated—because it shows this effort is not just related to greater economy in the space effort, in the event we want to adopt further programs in the future, but also is tied in with the effort of the Defense Department to have greater security. They had hoped to gain this through the launching of the MOL, but since it was canceled, they are now turning to NASA to do the necessary experimentation.

Mr. President, I just do not see how the Senate could think about killing this particular part of this authorization, particularly in a bill which is not only more than a quarter of a billion dollars under the House bill just passed a few days ago, but $17 million under the President's budget, and more than a billion dollars under the original request of the NASA people.

Mr. President, unless there are questions, I shall be happy to yield, but it seems to me that for us to strike this out of the bill would be, in effect, to say, "We do not want to look toward any hope of economy to the future. We are

perfectly willing to continue to pay the very heavy cost we have been paying in the past. We do not hope for any economy, do not want it, and are not going to study anything that will help us to attain it."

Several Senators addressed the Chair.

The PRESIDING OFFICER. The Senator from Mississippi is recognized.

Mr. CANNON. Mr. President, will the Senator yield so that I may ask for the yeas and nays?

Mr. STENNIS. Mr. President, I ask unanimous consent that I may yield to the Senator from Nevada, the manager of the bill, so that he may request the yeas and nays without my losing the floor.

The PRESIDING OFFICER (Mr. ALLEN). Without objection, it is so ordered.

Mr. CANNON. Mr. President, I ask for the yeas and nays on the pending amendment.

The yeas and nays were ordered.

Mr. STENNIS. Mr. President, I shall be quite brief. I have just a few points.

I am afraid the Senate has been left in some confusion here, through no fault of the Senator from Minnesota, about the $80 million that will be left in the bill, even if the Senator's amendment should pass.

Mr. President, I talked with Mr. Paine directly this morning, and with one of his chief assistants at the same time, on that very point, and asked them the specific question.

They said the $80 million that would be left in the bill was for a broad general research program in general laboratory work that would be going on anyway, regardless of whether this item in the Mondale amendment was in the bill.

They said further that this space shuttle would benefit somewhat from that general research, as any item is likely to benefit somewhat from general basic research.

But the real heart of this matter, if this program is going to start, is not in development, but in the research that is directed to this particular vehicle or this particular shuttle capsule, or whatever you call it. That is what is affected by the Mondale amendment—funds for the specific design and the specific fundamental research on it, as we have research for a weapons system, to be directed toward the ship that they are trying to conceive. That is what this $110 million is for.

This was the only item of this kind that survived these terrific reductions. And why did it survive, when all the rest were lost? Because it had a special potential, as I see it.

This involves a reusable rocket, as has already been stated, with the possibility of reducing the very heavy cost load. In orbit, this cost load is likely to be reduced to 10 percent of what it is now. That would mean a 90-percent reduction, but no one can be certain about that. The concept, though, of a reusable rocket—as the Senator from Florida has already pointed out, possibly they can use it 100 times—we think is fairly well proved, and will be developed along that very line.

With respect to the estimated benefits in terms of dollars or any other terms, I recall that with then Senator Lyndon Johnson, I held some of the first hearings as to the outline of the entire space program, including some of the preliminary parts of the moon shot. There was no way to estimate value. There was no accurate way to estimate cost. It took a great deal of failure, and that has always been true in any program, and it is still true. I do not think there is any doubt about the great possibilities of this item.

Furthermore, there is no way to estimate what has already been done in the space program. Who can estimate the value of the advance information received by those living in the area struck by Hurricane Camille? I know that one report was that people would not leave. That was a mistake. Countless thousands of people, as the helicopter photographs show, left that area and found safety. Automobiles were bumper to bumper on highways leading out of that area for hours and hours before the fury of that storm struck, because they had this information through the satellite system, which proved to be accurate.

There is no way to determine the value, in untold billions of dollars, that we have received in military programs because of the information we gained. I will not elaborate on that. It is generally known. Let us remember those things when we talk about trying to put a dollar price on these programs.

There is another phase: This vehicle is a very definite forward step in providing rescue capability for astronauts in the future.

It will make it possible to leave the earth and to go to a vehicle orbiting the earth and take off men and bring them back safely.

As an example, in the case of Apollo 13, damage to the support section of the command capsule made it necessary for the astronauts to go to the vehicle which would land on the moon but which could not reenter the earth. If this damage had been to the command capsule, the astronauts could have been directed toward the earth in the lunar lander, and put in orbit around the earth. If a space shuttle had been available, it could have gone to the orbiting astronauts in the lunar lander and brought them down safely.

These are the possibilities for the future with respect to this item, and the amount is relatively small.

Mr. President, the amendment offered by the Senator from Minnesota (Mr. MONDALE) would eliminate the $110 million carried in the committee bill for design studies and other preliminary work on the space shuttle and space station.

First, the Senate should understand clearly that the funds authorized in the committee bill do not commit this country to the development of the space shuttle or the space station, let alone a manned mission to Mars. A strong case has been made in the work of the President's Space Task Group and in detailed testimony before the Committee on Aeronautical and Space Sciences that the space shuttle and space station are two key elements of an integrated plan for the Nation's long-term future space capabilities. However, the administration has not requested, and the committee is not now recommending, a commitment to proceed with the development of these projects. What the administration has requested, and what the committee is recommending, is that NASA be given the funds required in fiscal year 1971 to study in depth the configurations, designs, and costs of the space shuttle and the space station. The question of a commitment to a multibillion-dollar project is not before us today. When the question of proceeding with development of the space shuttle, the space station, or any other major space project is presented to the Congress, the Committee on Aeronautical and Space Sciences will carefully review all the details and their estimated costs. The Senate can be sure that this committee will not recommend any multibillion-dollar commitment without a full presentation to the Senate of the facts and cost implications.

Concern has been expressed that the preliminary cost estimates for developing the space shuttle and space station will be exceeded. Statements have been made to the effect that this always happens. Let me remind the Senate that in the case of the Apollo program, our most ambitious space program to date, the final costs came very close to the original estimates and the Congress was well informed in advance of such changes as occurred. The Committee on Aeronautical and Space Sciences is deeply concerned that the same practice be followed on major new space programs and that the Congress have before it realistic cost estimates at the time commitments to such projects are made. It is precisely for this reason that the committee is so strongly in favor of including the $110 million, which the proposed amendment would delete. These funds are needed for the studies, design work, and experiments required to provide the technical design information on which firm estimates of costs can be made. Without this work, both NASA and the Congress will be in the dark on the technical feasibility and the best design of these projects and we will all be in the dark on the ultimate cost of the programs.

Therefore, I urge the Senate to reject the proposed amendment and to permit initial work on these projects to proceed so that at the appropriate times in the future the Congress will be able to make a proper decision on the question of whether and how fast to proceed with the development of the space shuttle and the space station.

Mr. President, the debate on this amendment should not be confused by statements that the space shuttle and space station projects commit us to sending men to Mars or other planets. The space shuttle is not a vehicle to fly men to Mars. It is a vehicle to operate in earth orbit. Its purpose is to bring to the Nation's space operations an economical mode of operation similar to today's airlines. If the space shuttle is successfully developed, it can replace all our current launch vehicles—launch vehicles that

are expensive to build and totally consumed on each launch—except for the very smallest and very largest, the Scout at one extreme and the Saturn V at the other. The space shuttle will be a manned vehicle but in the years to come it will be the most economical way of taking our unmanned as well as manned payloads to orbit.

The space shuttle and the space station projects are a part of a carefully thought out and integrated plan for the Nation's long term future in space. They are two of the principal "building block" systems to give us space capabilities we need. These systems are not tailored or limited to particular types of missions, like the Apollo system which was designed for the special purpose of landing men on the moon and bringing them back to earth. The vehicles in the integrated plan, taken together, will give this Nation the capability to do whatever it decides to do in space. It is true that sending men to Mars could be one of the possible future uses to which the vehicles in the integrated plan might be adapted at some future date. But it is not true that the reason for the space shuttle and space station is to send men to Mars. Even if we decide now never to send men to Mars, the space shuttle and the space station are two of the basic systems we need in the 1970's and beyond for effective and economical operations in space nearer to the earth.

The space shuttle and space station projects will indeed require some major new advances in technology. This fact is one of the strong considerations in favor of proceeding with these projects. It means that the space program can continue to provide the stimulus and drive to our industry and our total economy that can only come from advanced technological development. The whole Nation will benefit from the work that is necessary to bring into being the space shuttle and space station.

Mr. President, the successful development and operation of systems to take men and instruments out into space, to expand mankind's domain, and to unravel the secrets of the universe is a vast and complicated task. As we have seen in the Apollo program, it takes the efforts of a strong, dedicated team over many years. For the first time this year the committee has received from NASA and carefully reviewed a long-range plan for the 1970's and beyond. This plan does not commit the Nation to specific goals by specific dates. It does not commit the Nation in advance to an annual rate of expenditure beyond what the Congress may decide to provide each year. But it does lay out a clear direction: It identifies the types of systems we should develop and the types of missions we should prepare ourselves to undertake. The space shuttle and space station projects are essential elements of this plan. I believe that the Senate should approve the first steps of this plan by providing the full amount included in the committee bill for study, design, and experimentation to provide NASA, the administration, and Congress the basis for sound decisions in future years on when and how to proceed with the development of the tools the Nation needs in space in the decades ahead.

These first steps are provided in a recommended authorization for NASA for fiscal year 1971 of $3.315 billion—with estimated expenditures one-half billion dollars below fiscal year 1970, and more than $2.5 billion below the peak in 1966. Under this budget, employment on NASA work will be down from a peak of 420,000 to 145,000 by 1971. Yet in spite of these reductions we can—we must—provide a sound basis for our future in space—in exploration, in providing new scientific knowledge, and in providing us practical results here on earth.

For these reasons I oppose the amendment and think it should be rejected by a substantial vote.

Mr. CURTIS. Mr. President, I oppose the amendment offered by the Senator from Minnesota (Mr. MONDALE).

The authorization for NASA for fiscal year 1971 recommended by the Committee on Aeronautical and Space Sciences totals $3.315 billion, a decrease of $17 million from the administration's budget request. The estimated expenditures under this recommendation are roughly one-half billion dollars below the estimate for the current year—and more than $2.5 billion below the peak in 1966.

Under this budget total nationwide employment on NASA work—once 420,000—will decline to 145,000 by the end of fiscal year 1971.

In presenting this budget request, the administration faced the hard fact that a major reduction in the Nation's space program had to be made to achieve a fiscally responsible budget in this time of inflation and escalating costs in other parts of the Government.

In its actions in reducing the budget request by $17 million, the committee concurred in this view and in the overriding need for austerity.

And yet, even within these constraints, the administration has presented a forward-looking program based on a total plan for America's future in space—a plan that will make the use of space more economical, will bring us practical applications here on earth, and at the same time, keep us first among nations in the exploration of space.

The amendment under consideration would eliminate the key elements of the Nation's plan for our future in space—the shuttle and the station.

The Senator from Minnesota states, in support of his amendment, that "there is little justification for proceeding with the development of the space shuttle station in this fiscal year."

But the funds requested—$110 million—are not for development. They are for design and definition studies. They will not commit us to proceed with the development. The administration is not asking for such a commitment this year.

The work that will be done with the funds requested will answer all of the questions the Senator from Minnesota raises in his amendment; they will provide solutions to the technical problems that are not yet fully understood; and they will provide accurate cost estimates for the development of the station shuttle.

When the issue of proceeding with the development of the space shuttle station is presented to Congress—perhaps next year—the results of these studies will be available. The Committee on Aeronautical and Space Sciences will then thoroughly assess and present to the Senate what is involved, the extent of the commitment, and a firm range of cost estimates. It is precisely for these reasons that it is so important to proceed with the design and definition work before a commitment to proceed with the development is made. With this kind of an effort NASA has demonstrated that it can and will meet its commitments in terms of costs, schedule, and technical performance.

I do not know of any other agency that has established the same record of performance.

The amendment is also supported on the contention that approval of the $110 million for studies somehow commits the Nation to sending men to Mars or other planets. This is simply not the case.

The space shuttle is not a vehicle to fly men to Mars; it will operate in Earth orbit. Its purpose is to reduce significantly the cost of Earth operations for all kinds of spacecraft—manned and unmanned. Similarly, the space station, although intentionally designed to serve a variety of purposes, is the next step in the effective use of space for science and practical applications near the Earth.

Mr. President, I urge the Senate to reject the proposed amendment and to approve the recommendation of the Committee on Aeronautical and Space Sciences.

The program presented to Congress by the President and approved by the committee is a balanced program, one which, in the words of the President, "builds on the success of the past," but at the same time reaches out "for new achievements."

Mr. GURNEY. Mr. President, I strongly oppose the amendment of the distinguished Senator from Minnesota to eliminate the $110 million proposal for the design and definition of a space shuttle station system, the sum which was voted by the Senate Committee, and a part of the Senate version of the NASA authorization bill now before us.

The Senator from Minnesota has given reasons for his opposition to the space shuttle station which we ought to explore. I respect my distinguished colleague, of course, but on this score I think we have a fundamental disagreement.

The Senator has suggested that the decision to approve this project constitutes a crucial turning point in the U.S. space program. He urges that the space shuttle station is the beginning of a manned space program which will commit us to a major manned Mars exploration mission.

Mr. President, it is certainly true that without the space shuttle and station, a manned Mars exploration program in the long range would be impossible. But, the authorization for the $110 million for research and design before us today is in no way intended by NASA or the administration to be a forerunner to such a program. Nor does it commit us to a

Mars mission. It is intended solely for research and design of a shuttle station. This is not even hardware money: It is to be used solely to see if and how we can build a shuttle economically. Phase B, the item before us today, is the sequence to the now completed phase A feasibility study, and it does not even commit us to building a shuttle. NASA officials before the Senate Space Committee have testified that such a commitment would not or could not be made until phase B is completed. Phase B cannot be completed unless we authorize it today.

Concerning the ultimate cost of a shuttle station, I would like to point out that the prime purpose of the shuttle is precisely, to reduce, not increase, the cost of space exploration. It is the first element in the future integrated space program that will slash the cost of putting payloads into earth orbit.

With successful shuttle operations, our inventory of rocket and spacecraft models would be significantly reduced. That is to say, the need for most existing launch vehicles would be eliminated. According to Dr. George Mueller, former Administrator of the Office of Manned Space Flight—NASA—NASA studies already show that the shuttle could reduce total costs of space exploration extensively right at the outset, and with the maturity of the space shuttle, even more, perhaps as much as twice that amount.

Designed for 100 or more missions, the shuttle will be an integral part of other space programs. It is being designed to provide, and hopefully will provide, economies in every aspect of space operations.

The ability of the shuttle to return men, cargo, and equipment back to earth will significantly reduce the cost of all equipment. It will provide both logistic support for the space station and a viable space rescue system. It will be available on short notice for Department of Defense use, should the need ever arise. With the shuttle for support, technicians will be able to reach automated satellites and probes, to repair, maintain, refuel and refurbish them, or to reposition or retrieve them for return to earth. The shuttle will effectively bring together manned and unmanned programs on a rational basis.

My distinguished colleague, the Senator from Minnesota, has also suggested that a decision to delete funds for research on the shuttle station will not kill the project. He has indicated that there is $80 million included in the NASA authorization for the Office of Advanced Research and Technology which could carry out the purposes of this program. I would like to point out that this OART money is designed for use in the area of very broad and basic technological research. This $80 million will complement individual NASA contract studies including those for the shuttle, but will in no way substitute for these studies. Questions concerning payloads, cost efficiencies, overall cost estimates and design verification will not be answered by the Office of Advanced Research and Technology work alone. Moreover, NASA officials have testified that only a small portion of this $80 million fund, only 10 percent or $8 million, is specifically and directly applicable to research on the space shuttle.

I agree with the Senator from Minnesota when he says the decision to delete the research funds for a space shuttle station would constitute a crucial turning point for the U.S. space program. I suggest that it would constitute a decision to end our manned space flight capability after 1974. We must candidly admit this, and if we vote this amendment today that is exactly what we will be doing.

Based on our present manned space flight program, we face a gap from 1975 to 1977. If the shuttle money is taken out of this budget now, the gap will be stretched to 3 and to possibly 5 years.

NASA's original budget request for the space station shuttle was $268 million. The House Science and Aeronautics Committee lowered that amount to $190 million. The authorization now before us has cut this amount to $110 million. This lowered amount itself will cost the program valuable time.

When the $110 million is compared to the amount we stand to lose in plain operating costs for storage and mothballing of our present facilities—together with, and the inestimable loss in, human resources, teamwork, and technological know-how caused by the delay—there is no question in my mind which is more economical; this amendment, if adopted, would not save money—it would increase costs. It would be false economy in the extreme.

Right now, at Cape Kennedy we have already made severe cuts in manpower. We have $4.5 billion in facilities there. If we were to tread water for 5 years, it would mean that we would have only a skeleton crew at the space center. How can we calculate the loss of expertise, the loss of a skilled industry-Government team which it has taken years to build, and would take years to build again?

Mr. President, we Americans are prone to react rather than act. Sputnik jolted us into the space age and we scrambled to get the first man to the moon. But now is the time for advance planning if we are to insure that our space endeavors do not stagnate—and to make sure that we do not waste the investments already made.

The leadtime for carrying out the development and putting into operation a space shuttle program is 7 to 10 years. We know that the concept of a shuttle station has been under study in many countries for at least a decade. In my opinion, we cannot now afford to cut this program, to throw away our options by losing the leadtime necessary for launch capability. We cannot risk being confronted by an alien space shuttle which will give its developer effective control of space.

Now that the technology is available to build such a shuttle, we must take the initiative and carry out an orderly program. A stop-start operation would incur the risk at some future time, we would have to produce another crash program, at a much greater expense.

The present authorization offers us the opportunity for a viable balanced, moderate continuation of our space program. It permits us to keep intact our pool of technological talent and facilities, and gives us maximum returns on our past space investment.

Frankly, I favored a substantial increase for this program. I do not think that is in the cards because of budgetary pressures and other pressing domestic needs. I recognize those needs; I understand why some of my distinguished colleagues favor cutting NASA at this time. This is a meaningful economical compromise. If we cut it further, we will be shelving the manned space program and no amount of rhetoric can obscure that point. I strongly urge my colleagues to vote against this amendment.

One final point, Mr. President, and I think this is extremely important. Regardless of the pros and cons of the space program, or the fallout there is from it and what specifics there are as to the return on our investment—and there is a great deal of difference of opinion on that—there is no question about one thing; namely, that our competition, the Russians, are deeply involved in the space program and have been for many years. They devote a good deal more of their national budget to space proportionately than we do. They place much greater emphasis on it.

I think it is extremely interesting that in the last issue of Newsweek magazine, under the item called Periscope, there is this observation about the Soviet Union:

> The Soviet Union is pushing hard to orbit the first manned earth-resources satellite within the next two years. The vehicle would carry infra-red cameras, microwave radar and high-resolution film to collect data on crops, mineral deposits, ocean currents and fishing grounds. The Russians also have a long-range project for orbiting an "institute in space" that would dwarf the three-man U.S. skylab planned for 1973: their "institute" would be manned by 24 pilots, scientists and technicians at a time. They would shuttle back and forth on six-month tours of duty.

Mr. President, there is no question where the competition is going. I remind this body that when the original sputnik went up years ago, and Russia beat us first in space, it was the greatest propaganda defeat in the eyes of the world that this Nation ever suffered. It took us years to come back from the defeat which we suffered at that time. We regained our position, I think, in world opinion, only when we landed a man on the moon.

Mr. President, if the Russians orbit a space laboratory with some 24 men in it before we do, and they are up there taking observations of the earth and doing all the other things they planned to do in the space station, it seems to me that the esteem of the United States of America as a first-rate industrial Nation, as leader of the free world, will plummet right down to the cellar in the competition for world opinion and who is the foremost nation, because the free world countries will benefit and gain from what this Nation has done in the space program.

The most crucial part of the bill before us is the pending amendment. If

we adopt it, we will put the manned space flight out of business. That is exactly what we will be doing.

Mr. President, I hope, therefore, that the Senate will realize that and vote down the amendment.

Mr. CANNON. Mr. President, I believe it is absolutely essential to identify precisely what we are discussing with respect to the space shuttle activity recommended in this bill. The $110 million recommended is for preliminary definition and planning studies only. I emphasize studies—there is no money in this bill for the development of the space shuttle. In fact, no decision has been made to proceed with such development. Such a commitment will be based upon thorough studies that such a system can be developed and that its potential will be what the initial feasibility studies indicate it offers. But before such a commitment can be made, the program will have to be presented to and approved by the Congress. Mr. President, I believe the Nation should thoroughly study and fully consider these advancements in technology. It is only through such actions that the agency can develop the information necessary to make informed decisions on future commitments and that we can find out, in this technologically competitive age, the most efficient means of accomplishing objectives.

Being more specific on the status of the space shuttle project, NASA uses a Phase A, B, C, and D project approach—Phase A being the determination of feasibility of an undertaking and the identification of the most promising concepts for accomplishment and Phase D being final hardware design, development, and production. These are the extremes. NASA has just completed Phase A studies and is about to award 11-month contracts for Phase B studies involving detailed study, comparative analysis and preliminary design, all directed toward identifying the technical problems and the solutions which will facilitate a choice among the several Phase A concepts. These studies will be complete about May next year after which NASA must undertake an evaluation of the results. Obviously this is a complex undertaking which is why the committee is insistent that it be examined thoroughly before proceeding further.

Therefore, I believe it is abundantly clear that the issue today is not buying hardware for a space shuttle system but only that of supporting the necessary examination upon which to make an informed decision at a later date.

Mr. President, the committee has proceeded cautiously on this matter. It did so last year if one examines the record. It is still proceeding cautiously requiring that we know as best we can just what we would be getting into and what the benefits would be.

I repeat—the issue is for supporting studies of an extremely promising concept to reduce the cost of all space operations — manned and unmanned — no more, no less. The funding in this bill is not a commitment to build such a system—and as some have suggested—is not to support a manned mission to mars.

Now, Mr. President, the supporters of the pending amendment have made several representations that I think I should address myself to for the record, because they are incorrect.

One suggestion was made that no decision could be made at this time because it had not been completely studied to determine how long a man could live in the space environment such as is envisioned, and pointed out that in one experiment, the case of a monkey, that the monkey died after 8 days in space.

I would simply point out for the record that Captain Lovell has spent a total of 30 days in space—14 days in Gemini 7, 4 days in Gemini 12, 6 days in Apollo 8, and 6 days in Apollo 13.

This demonstrates, I think, quite conclusively, that man can live there.

The suggestion was made that there would be $80 million spent in space shuttle system study effort, even if the $110 million were denied.

That is simply not the fact. I think the record has been made abundantly clear in that regard.

The suggestion or the statement was made, in the form of a question, Why go into hard design at this point in time?

There is no money, no part of the $110 million for hard design. It is simply not contemplated, nor is there money in there for long leadtime items as was suggested.

The Senator from Wisconsin raised the question of cost effectiveness. He said, Why do we not check this out as we would a dam, for the purpose of determining cost effectiveness? One way to determine the cost effectiveness of a dam is to plan and study and determine how much it will cost and see what the benefits will be.

Mr. President, that is exactly what we are trying to do as a part of this program; namely, to find out what is the feasible approach, what type of development program we can undertake, and what the cost will be. Only at that time could those matters be related to a project so as to determine its cost effectiveness.

Thus, I submit, the Senator from Wisconsin is arguing against his own position by raising that question.

Now the suggestion was also made in the statement that a number of scientists had left the program and, for various reasons, did not support it.

I would say that there have been a number of scientists leaving the program, as well as many other people who are not scientists. The employment level in 1966, the high point, was 420,000 in the NASA program. By June 30, 1971, it will be down to 144,000. It is rapidly nearing that point at the present time. It is down within less than 50,000 of that point. So that is a reduction of 276,000 from the high point to the low point of the program.

Certainly, then, there would have been scientists, as well as many other people, leaving the program, going elsewhere to seek work, either on their own volition or because their work had been completed.

Mr. President, I ask unanimous consent to have printed in the RECORD a fact sheet which I have prepared regarding NASA's fiscal 1971 budget request.

There being no objection, the fact-sheet was ordered to be printed in the RECORD, as follows:

SOME FACTS REGARDING THE FISCAL YEAR 1971 NASA BUDGET REQUEST

The bill reported by the Committee recomments an FY 1971 authorization for NASA of $3,315,950,000. This is $17,050,000 less than the Administration's request. Moreover, the bill places a limitation on the funds that can be used for personnel and related costs of $500,108,000, thereby encouraging NASA to further reduce the size of the Agency and certainly to prevent it from growing during the next fiscal year.

The amount of $3,315,950,000 reported out by the Committee is the lowest amount recommended by the Committee since FY 1962.

It is $284,925,000 less than the amount provided in the NASA authorization bill already passed by the House.

It is $399,577,000 below the Committee's recommendation for FY 1970.

It is $399,577,000 less than the amount authorized for FY 1970.

It is $380,683,000 less than the amount appropriated to NASA for FY 1970.

It is $539,923,000 less than NASA's budget plan for FY 1970.

NASA's authorization has been reduced every year beginning with FY 1965 so that the amount of $3,315,950,000 recommended by the Committee for FY 1971 is $2.034 billion less than the amount of $5.35 billion authorized for NASA for FY 1965. This is a reduction, every year for six years, amounting to 36%. I know of no other major program in the federal budget which has been reduced so much for so many years in a row.

Expenditures in NASA during the past five fiscal years have been reduced from about $5.9 billion in FY 1966 to $3.4 billion estimated for FY 1971, a reduction of over $2.5 billion or 42% during a period of five years.

Mr. CANNON. Mr. President, our national security, our commerce, employment, the health of the Nation, the country's prestige, and indeed our standard of living are all dependent here in the United States on the quality of our science and technology. Yet the scientific and engineering community is in dire financial straits these days because scientific and technical programs all over the Federal Government are being cut back and nowhere have they been cut back more heavily than in NASA.

No one denies the importance of our aeronautical and space programs to the national security, but what about these other areas?

Let us take a look at commerce.

The importance of aeronautics and space to our commerce is evident when we note that the aerospace industry is our largest manufacturing industry doing an annual business of $27 billion. Our leadership in aeronautics and space is apparent at airports around the world where U.S. produced aircraft are seen bearing the insignia of almost every major national airline. All of these aircraft reflect the scientific and technical work of NASA. Even more dramatic—but perhaps less well known—is that virtually every online direct access commercial computer systems in the world today was made in the United States and reflects the space guidance and checkout requirements of some years ago.

What does this mean for United States exports?

Export sales of aircraft and parts in

1969 amounted to $2.9 billion; the sale of U.S. computers reached $728 million—a total of almost $3.7 billion for these two items alone. Total export sales of aerospace equipment have increased steadily, and the impact on the balance of trade has been substantial. While the balance of trade has been declining, total sales of aerospace products have been increasing. Aside from this kind of impact on our commerce, our aeronautical and space programs have been responsible for creating entire new industries. In every respect the aerospace industry is one of our great producers of our national wealth.

What about employment?

The aerospace industry is the nation's largest employer, employing 1.3 million people with a $14 billion annual payroll, and pays one of the highest average wages of any U.S. industry. A few years ago there were some 420,000 people employed in the space program. That employment has been reduced by 240,000, and by the end of 1971 it is expected that no more than 144,000 people will be working on the space program—only about one-third of the people that worked on the program at its peak.

Is the space program important to the Nation's health?

Yes, it is.

The applications of space science and technology to medicine are numerous. There is probably no area to which more space benefits have accrued. Let me cite only a single case. A few weeks ago, it was announced that a scientist, Mr. C. D. Cone, Jr., working at the Langley Research Center, in Virginia, made a major discovery which may lead to a far better understanding of cancer. Mr. Cone, in the course of studying radiation effects on cells in order to understand the effects of space radiation on astronauts, discovered that the electrical voltage across the surface membrane of a normal cell acts to exert precise control over cell division. In his research, he noticed that cells having large negative surface membrane voltage seldom, if ever, divide while cells with small negative electrical voltage divide at maximum rate. Mr. Cone's new theory proposes that the division of body cells is controlled precisely by the pattern of ion concentration on the surface tissue of the cell. This theory has provided for the first time an explanation of the functional connection between the two major pathological features of cancer—uncontrolled growth of the cells and the spread of the disease in the body. If Mr. Cone's theory proves to be generally valid and his experiments show that it is, this theory will provide a powerful new basis for research on cancer and many other biomedical problems such as human conception, birth defects, growth, and aging.

What about national prestige?

I know of no program that has done more for the prestige of this country during the past few years than NASA's space program. I think it is fair to say that without it, the Nation's prestige would be near an all-time low. With it, despite the many other problems we have, the prestige of our country remains high. As a single example, let me read what the Department of State has to say about the success of a single NASA mission—the manned landing on the moon. This is in response to a question asked by Senator SMITH of Maine during the hearings on the bill before the Senate. It can be found on page 1010 in the Hearings on the Senator's desks, and reads as follows:

> There is no question that the success of the Apollo 11 mission did more to bolster American prestige abroad than any single event since the termination of the Pacific War in 1945. Communications satellites made it possible for many hundreds of millions of people in nearly all parts of the world to watch, and to feel personal involvement in the moon walk. The chiefs of our missions throughout the world were nearly unanimous in reporting a massive and emotional response during that memorable July day.

Let me skip a part now and read another paragraph:

> No one could hope or expect that the euphoric burst of enthusiasm felt by most of the world toward our country last July could be long maintained—nor has it been. We are left, however, with a very substantial residue of admiration and prestige. While the benefits are impossible to measure in quantitative terms, these gains should be of very real value with respect to our posture in the world and our relations abroad for many years to come.

Finally, what can we say about NASA's aeronautical and space programs and our standard of living?

No people in the history of the world have enjoyed a standard of living as high as we enjoy today in the United States. The wealth of this country is unparalleled in the history of the world. And because of this wealth, which was created by the hopes and aspirations of our people, we have become deeply concerned with the welfare of those on the lower rungs of the economic ladder. The Congress has enacted enormous programs to meet the needs of these people. We have been able to do that because our people have been able to pay the necessary taxes. They are able to pay taxes because we have programs like the aeronautics and space programs which create wealth. If the Federal Government does not support programs which create new wealth, this country soon will not have the funds to establish programs for those without the economic means to enjoy the good life in this country.

Mr. President, if we asked the average man on the street to name that function of the Government on which the greatest amount of money is spent, he would probably tell you it was for national defense. For fiscal year 1971 this is $73.6 billion, or 37 percent of the total, and is, indeed, a large amount. But the answer would be wrong.

The correct answer is that the Federal Government will spend more for human resources programs than anything else. This amount is $81.9 billion, or 41 percent of the total budget. This is $8.3 billion more than for national defense. In sharp contrast is the outlay for space research and technology which is only $3.4 billion, or a scant 1.7 percent of the total.

Even more interesting is the direction in which these outlays are moving. The average annual rate of change, in percent, for the years 1969–71 shows that outlays for national defense have declined by 4.8 percent. Outlays for human resources have increased a whopping 13.5 percent, by far the largest increase of any of the major categories.

On the other hand, the space program has suffered an average annual decrease of 10.5 percent, the greatest decrease of any item in the entire Federal budget. I refer you to pages 74 to 78 of the President's fiscal year 1971 budget book as the source of the figures I have just quoted.

The point I wish to make is this: the amount that we are spending on space is really quite small when compared with other items in the budget. In terms of the returns to our society that we are getting, and will continue to get in the future, I think these small outlays for space may be the most cost-effective dollars that we spend.

To those who say we should cut back on our space program, the answer is: We already have. Sharply. More than any other program in the Federal budget.

To those who say we should spend less for space and more for other selected programs, the answer is: There is absolutely no assurance that a single dime would be added to any other program even if all of the space funds were deleted. Also, if you did delete all the space funds, and if you then spread them proportionally among the various human resources programs, as defined in the President's budget book, the additional amount for any single program would barely make a ripple.

And so, Mr. President, when we talk about the amount of money we are spending on space, let us be sure that we put it into the right perspective as compared with the rest of the Federal budget, both as to relative amounts of expenditures and to the direction that these outlays have been moving over the past few years.

Mr. President, the NASA program has been reduced substantially every year for a period of 6 years. The Committee on Aeronautical and Space Sciences has reviewed the NASA budget thoroughly and has reported a reduced authorization that will provide only for an austere NASA program.

Mr. President, I urge that the amendment be defeated and that the bill be passed as reported.

Mr. ALLOTT. Mr. President, after this very long discussion—and I have been here in the Chamber for 3½ hours waiting for an opportunity to speak—I shall not speak very long now, but I would like to cover at least two or three subjects raised this afternoon.

I think that the statements recently made by the distinguished Senators from Mississippi, Nevada, and Nebraska have adequately answered the statements made in support of the pending amendment.

Mr. President, I can remember very well, having been on the Independent Offices Subcommittee since the beginning of 1959, all of the thoughts that crossed our minds with respect to the space program.

If we accept the arguments advanced

in behalf of the pending amendment, there would have been no space program at all, because it took people with vision, faith, and confidence, plus the complete scientific and technical know-how that is part of the American arsenal of democracy, to accomplish what we have.

I recall when President Kennedy made his rather sudden—at least to me, and I think to most people—announcement that we would land a man on the moon within the decade—at that time I had a great many misgivings about such a proposal. They were not misgivings about whether we could do it or not, but misgivings as to whether that was the right emphasis on the way this country should spend this money.

I am very much interested this afternoon to see many Senators who embraced that program with wide open arms at that time, gladly voting billions and billions of dollars for the space program when it was announced by their own President, now suddenly become wary and fearful about what is going to happen in this world.

At the time that President Kennedy made his announcement, he declared that there were 25 percent of the people in America who were going to bed hungry every night.

This did not bother these people who are speaking in behalf of this amendment at that time. It did not bother them in the least to commit $24 billion to the Apollo project, not the entire space program but to the Apollo program alone. It did not bother them a bit. They ran in and voted "aye" at that time.

Suddenly they become wary and fearful and frustrated. In that respect, I feel sorry for them because I feel they have lost their faith in this country.

What has been missed by the gentlemen I have mentioned, and a few others, is that this $110 million is for a study of the space shuttle. It is not for design. It is not for the development of a space shuttle. This is something that everyone ought to understand.

The $110 million is for engineering and scientific studies, a conceptualization study, if you will, or, as the Senator from Nevada described it, a preliminary plan and definition.

The distinguished Senator from Florida a few minutes ago hit the nail right on the head. Are we so fearful and so afraid of the future that we are going to say now that we are going to shut off our manned space programs?

Is there anyone in the Senate Chamber who is so sure of what the future holds that he can say we do not need a manned space program?

Is there anyone in the Senate Chamber so sure in his own mind that the Russians are not developing military technical capability in this area that we may not have to cope with that capability in the next few years?

If they are saying such things, they are not paying attention to what is being said around them and in the scientific community. And they are not reading what is being said in the scientific papers.

As the Senator from Florida said, Apollo 19, scheduled for 1974, is the last manned space flight scheduled at this time.

After making a superhuman effort to catch up to where the Russians were in 1957 and finally surpassing them with three great space exploits, are we going to be so wary and fearful now that we will shut the program off? I do not think so.

After 1974, what are we going to do? Are we going to continue with what most scientists believe, and certainly I believe—is now becoming an outmoded method of vehicle recovery from outer space? Or are we going to meet the challenge of the future to recover men from space and deliver men and supplies to space vehicles orbiting the earth?

I want to make my own position very clear at this time. I would not support and I do not support a manned flight to Mars or to any other planet, outside of those scheduled for the moon.

At another time in the future, 4 years, 5 years, or 6 years from now, it may be that the fiscal situation of this country would allow us to look further than that. But there is no such plan here.

I want to read a portion of the committee's report from page 15:

> Initially the shuttle will be used in transporting flight crews, scientists, experiments, and supplies to space stations and space bases in earth orbit.

Then they go on to say:

> Other projected uses include flying missions in a polar orbit, carrying from one to several automated satellites and positioning them in their selected earth orbits, serving as an orbiter staging platform for automated planetary probes and spacecraft, and transporting liquid hydrogen to earth orbit for use by nuclear propulsion stages capable of traveling to neighborhood planets. The shuttle will be designed so that it can be maintained in a state of launch readiness for lengthy periods and yet capable of being launched within several hours notice.

I suggest that everyone read that paragraph starting at the bottom of page 15 of the committee report. It very adequately sets forth what we plan for this shuttle program.

I would like to turn for a moment to the implications that have been made that the space program is nothing. I hate to think, Mr. President, that Congress under the two former Presidents before President Nixon was so unwise that we did this for a great public relations program or as a stunt to put men on the moon. Nothing could be more foolhardy.

Apparently some of our colleagues do not read the RECORD. They do not pay any attention to what anyone else says unless they are on the floor themselves.

I have in my hand the volume of hearings on the independent office appropriations for the present fiscal year. It is for the 91st Congress, first session. I am not going to read all of this into the RECORD. I think it was in the RECORD last year.

Starting on page 661 of the independent office appropriations hearings for this present fiscal year, it goes on in very fine print and covers space radiation, the fallouts, and benefits from space.

It covers achievements in space geophysics, space biosciences, environmental biology, communications, and long-range weather broadcasting. The distinguished Senator from Mississippi covered that particularly. It covers oceanography.

Here is an interesting item. It states that a Gemini crew photographed 80 percent of Peru in 3 minutes. I have the pictures in my office that they made of a portion of the United States which have fantastic implications so far as mapping is concerned.

It states here that the resulting photographic mosiac is better than any available map of the region.

This is just one of the possibilities of the space program.

It mentions navigation and transportation, earth resources—actually identifying the resources and minerals from space.

It mentions that high-speed ground and ocean transportation is benefited from the use of materials and construction methods that stem from aerospace advances. It mentions geodesy mapping. It goes on to mention electric and electronic systems.

If anyone says that there has not been great benefit received from the space program, he has not read the periodicals that have come to everyone else's attention.

From our investments in the space program, we will receive benefits a thousand times over. Recognition of this fact is not confined only to members of the committee and Members of the Senate. I have before me the February 1970, issue of Air Force and Space Digest. At page 30 is an article entitled "The Giant Harvest From Space—Today and Tomorrow," written by James J. Hagerty, one of the country's leading authors and writers on aerospace. I shall not take time to read the applications that Mr. Hagerty enumerates in his article that have "fallen out" from the space program. However, he points out something that ought to be remembered. He says:

> Space benefits are grouped in two categories. "Derived" benefits are those, like new products and processes, derived from the general fund of technological knowledge. "Direct" benefits are those provided by orbiting spacecraft, or "applications" satellites, which do earth jobs better or perform tasks that cannot be accomplished by earth-based systems.

Mr. Hagerty writes in some detail concerning the communications satellite.

I think that very few people have realized the significance of the benefits that the space program has bought in that respect. For example, in 1963 only 500 circuits could be used for interocean communication. Today, the Intelsat system alone provides more than 3,000 simultaneously usable circuits. Because time will not permit discussing this subject in detail, I ask unanimous consent that the entire article by Mr. Hagerty be printed at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 1.)

Mr. ALLOTT. Mr. President, the argument has been used about the monkey who died on a flight of 8 days to the moon, because of some syndrome that a doctor thought he discovered.

Mr. CANNON. Mr. President, will the Senator from Colorado yield?

Mr. ALLOTT. I am glad to yield to the Senator from Nevada.

Mr. CANNON. Is there any way that a

monkey could have brought Apollo 13 back after what happened in this instance?

Mr. ALLOTT. I know of no way in which that could have been done. I was about to make perhaps a somewhat facetious remark: That maybe some people do not think, when they look around today, that there is much difference between a man and a monkey. At least in orbit or in space man has the ability to focus his mental efforts so that he can exercise or get rid of a syndrome, whatever its name is. The Senator from Nevada is exactly correct: A monkey could never have done what the crew of Apollo 13 did.

I am not concerned about the difference of opinion in NASA; but it seems to me that what the proponents of the amendment are saying, in effect, is that the Apollo shots were just great big public relations stunts to prove to the world that we could do them.

Mr. President, nothing could be a bigger fallacy. If anyone has that thought, he should vote for the amendment. But if Senators see the space program in its entire concept, what it has accomplished in direct and indirect benefits to mankind, and the future things it will accomplish in the way of scientific data and the actual processes that will be developed by man, they should vote against the amendment.

There are so many of these developments. I have just had called to my attention in the last few days that the newest and probably the most advanced heart replacement valve for medical science is a direct fallout from the space program. Maybe some people do not think it is important, but we save people's lives by putting valves in their hearts. I believe it is important, and I believe most people in this country also believe it is important.

It is true it can be said that we do not know whether this will work or not. I recall at the time of the pronouncement by President Kennedy that we were going to land a man on the moon in this decade, that we had many discussions, and I tried to point out whether this was really the goal the space program should make. I felt more emphasis should be placed, perhaps, on the development of our orbital laboratories and our orbital system.

Mr. President, this is what the space shuttle will make possible and perhaps later when the country is in a better fiscal condition we will talk about sending man on interplanetary explorations. In the meantime we have to use the scientific knowledge and expertise we now have. We have to have the courage and faith to take the next step beyond what now, despite our great scientific capability, is rapidly becoming a rather antique method of reentering the earth's atmosphere and coupling up with other vehicles of space. The concept of the shuttle is the vehicle to do this.

For these reasons I oppose the amendment of the Senator from Minnesota. If Senators believe our space program is a stunt, let them vote for the proposal; but if they believe in the space program and the great benefits we receive from it and the fact that we have advanced ourselves in the eyes of the world through the space program, Senators should vote against the amendment. I think the amendment should be rejected.

EXHIBIT 1

THE GIANT HARVEST FROM SPACE—TODAY AND TOMORROW

(By James J. Haggerty)

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"What is space research doing for me?" John Jones, average American citizen, shrugs. "I was awed and thrilled by the moon landings. I had a great feeling of national pride that we, and not the Russians, had done it. But as for benefits, all I can think of offhand is international television. Maybe the moon rocks are important, but I don't understand that part of it."

John Jones's attitude typifies that of many people, but it is a myopic viewpoint. The US space investment is already paying handsome dividends, "hard" benefits of practical value as well as the little-understood gains in scientific knowledge and national prestige. The benefits include new techniques, new processes, new services, new products, even new companies formed to exploit the wealth of technological know-how accumulated in twelve years of concentrated space effort. Collectively, these innovations contribute to an improved standard of living and produce a concrete boost to the general economy running to tens of millions of dollars.

Substantial as it is, the current flow from the wellspring of space technology is only a trickle compared with the flood to come. And it is coming not in some nebulous, distant future, but *now*—within the decade just starting.

The transfer of technology from the realm of space science to the civil economy is not an overnight process; it takes years, sometimes a decade or more. Because the primary space-research thrust came with Apollo, which reached its technological peak in 1965 and 1966, a rapid acceleration of technology transfer is expected in the next few years. Space systems that promise enormous practical benefit to mankind have progressed from the theoretical to the "feasible" stage, and the National Aeronautics and Space Administration has initiated their development for near-future civil use. That these programs will get the requisite backing is clear from stated Administration policy, supported by congressional leaders, that aims to "increase utilization of space capabilities for services to man through an expanded space applications program."

Thus, the real payoff is about to begin. The evident benefits are tremendous in potential. They span a broad spectrum ranging from new levels of convenience to direct applications in the most pressing areas of global concern—food shortages in an overpopulated world, public health, air and water pollution, education, transportation safety, law enforcement, and urban development. They promise new levels of business efficiency, improved resources management, accelerated discovery of oil and minerals, and reduction of life and property losses from natural disasters.

And they offer economic returns of a very significant order, Existing estimates, admittedly conservative, warrant the prediction that, by the end of the decade, the direct economic benefits stemming from space-originated technology will far exceed the anticipated annual funding for space research.

APPLICATIONS SATELLITES

Space benefits are grouped in two categories. "Derived" benefits are those like new products and processes, derived from the general fund of technological knowledge. "Direct" benefits are those provided by orbiting spacecraft, or "applications" satellites, which do earth jobs better or perform tasks that cannot be accomplished by earth-based systems.

A type of spacecraft that has special utility in practical applications is the "synchronous" satellite, whose movement in space is synchronized with the earth's rotation. The satellite is directed into an orbit 22,300 miles high; at that altitude, its requisite speed is such that it remains stationary with respect to a point on the earth surface. From its lofty perch, a single satellite can "see" approximately forty percent of the earth; three of them can cover the globe with considerable overlap.

The synchronous satellite is already in regular operational service in the global communication network operated by the sixty-nine-member International Telecommunications Satellite Consortium (Intelsat). It serves as a relay tower in the sky, picking up signals beamed from an earth station and transmitting them to another point on earth or to another satellite. Synchronous capability is now being extended to other applications satellites whose primary payloads will be a variety of earth-watching "remote sensors."

Sensor development was pioneered by the Air Force, as early as 1958, for use in surveillance and early-warning spacecraft. The technological foundation thus provided led to recent development of several types of highly sophisticated civil-use sensors, which can be used to monitor various conditions of the atmosphere, the surface, or the subsurface. Some sensors are detectors—for instance, instruments that take temperature readings of the atmosphere. Others are picture-taking devices, though not cameras in the ordinary sense; called "multispectral imagers," they photograph in both the visible and nonvisible bands of the light spectrum and show many features of the earth that the human eye cannot see. The combination of synchronous satellite and remote sensors opens up a fascinating new range of earth-surveillance capabilities, which promises concrete benefits of staggering dimensions.

THE COMMUNICATIONS SATELLITE

The communications satellite, or "comsat," owes its exceptional utility in long-distance message relay to the fact that, generally speaking, radio waves must travel in a straight "line-of-sight" path; they cannot bend with the curvature of the earth and, therefore, the distance that a radio signal can be transmitted through the atmosphere is sharply limited. Before the comsat came along, it was necessary to route long-distance radio signals either by cable or by means of tall relay towers, each in line-of-sight, or within about thirty miles of its neighbor. Either alternative is expensive, but the yearly cost of a satellite channel runs about one-sixth that of a circuit on a submarine cable.

The major benefit accruing from the comsat, of course, is international television. It is generally agreed that, without the comsat, overseas TV would still be a "someday" thing, because a single TV channel is equivalent to about 1,000 voice channels, and that imposes prohibitive cost and capacity considerations.

Television, however, constitutes only two percent of the Intelsat system's current workload. The broader benefit of the comsat has

been in direct economic gain to world commerce, due to increased business efficiency by virtue of cheaper and more reliable long-distance communications. The comsat has also greatly increased the availability of circuits for transoceanic phone conversations. In 1963, there were only 500 such circuits and once could count on a lengthy wait for a connection. Today, the Intelsat system alone provides more than 3,000 simultaneously usable circuits; a single satellite already operational—Intelsat III—has roughly ten times the channel capacity of an in-service submarine cable.

The comsat paid an extra dividend to the US economy in stimulating the formation of Communications Satellite Corp., Intelsat's American member, which develops the space hardware and manages the global network for the consortium. Comsat Corp., a privately owned company that did not exist six years ago, now has 132,000 shareholders, total assets approaching $300 million, and annual operating revenues of about $45 million.

Impressive as are the benefits to date, the comsat has barely scraped the surface of the lode. Already in hardware development are new types of satellites that offer exciting potential for the near future.

Channel capacity is the major key to further growth of the comsat network because higher capacity is directly translatable into lower costs, hence wider usage. The comsat is inherently a high-capacity system and advancing technology is widening the capacity gap between satellites and terrestrial cables. The most advanced cable, in development but not yet in service, has 720 channels. A new satellite called Intelsat IV initially will have some 6,000 two-way channels—a greater capacity than all currently operating satellites combined—and later versions may have as many as 10,000. Intelsat IV is a *now* advancement; it is already being fabricated and it is slated for regular service starting next year. Behind it, inevitably, will come even larger comsats.

Capacity of the order offered by Intelsat IV will spark a number of innovations. A probability, already proposed, is a domestic satellite system for the US, a singe satellite hanging stationary over Los Angeles and linking the United States from Hawaii to the Virgin Islands. The system would supplement, not replace, the existing terrestrial system, and it would offer particular advantages to Alaska, where cities are widely dispersed and landline connections are inadequate.

Greater capacity will also stimulate increases in international TV programming, and direct-dialing phone calls to London, Hong Kong, or Tokyo may become as commonplace as the holiday long-distance call to the folks back home. And that long-awaited Buck Rogers device, the videophone, bids fair to become an everyday reality. Channel capacity has slowed its arrival, because it takes the equivalent of 100 telephone circuits to carry on a single two-way photophone conversation. But the new breed of high-capacity, low-cost comsats will bring the videophone into wide usage as a tool of international commerce. Since the videotube can carry charts, graphs, and other information presentations, as well as face-to-face longdistance conversation, it offers vast potential as a teleconference system for businessmen, capable of more than paying its way in travel expenses saved.

Some experts feel that the biggest impact of the comsat may lie neither in TV nor telephony, but in the rapid transmission of data from source to user, by linking together widely separated computers and other data-processing equipment. Such system might have video channels, but in most cases video is not needed; the information can be sent in computer-language and teleprinted in readable form at the other end of the circuit.

A major example is transmission of management information—inventory and production-control data, for example—from a number of plants to a central headquarters. Another is transfer of the latest medical knowledge from research centers and great library complexes to outlying precincts where such information is not available. Services like these are not particularly new. Computer interconnection was pioneered by the military services in the 1950s, and it is now making inroads in commercial applications. But existing systems employ landline interconnections that, in most instances, are more costly. The coming generation of comsats can bring about a big boom in data transmission.

THE BROADCAST SATELLITE

From the standpoint of general benefit to the world, rather than direct economic benefit to the US, the most important project in the space communications field is a completely new type of comsat called the broadcast satellite. This is a system that can send its signal directly to the home TV set or to a community antenna, bypassing the intervening complex of ground facilities needed by the point-to-point comsat.

Existing comsats, designed with size and weight considerations in mind, operate at extremely low power levels; their small antennas can pick up only a very strong signal from a ground station, and their transmitting equipment sends only a very weak signal back to earth. This is no handicap in point-to-point communications, such as are being relayed around the world by Intelsat. Intelsat's ground complex has forty stations, which generate great power and have giant antennas, ranging in diameter from thirty to almost 100 feet, and capable of picking up the weakest transmission from space. The ground equipment amplifies the signals and directs them via landlines or microwave towers to local TV stations, whose own powerful transmitters beam the image to home TV sets.

In the broadcast satellite, a reverse technique is employed: the satellite, rather than the ground station, has the primary power source. This is accomplished by equipping the spacecraft with nuclear power, huge batteries, fuel cells such as those that supply electricity to Apollo, or with enormous "solar arrays"—banks of thousands of cells that draw energy directly from the sun. The broadcast satellite also has a very large antenna, as big as some of those on earth, and it can be sharply focused to increase signal strength.

This means that a space communications signal can be acquired by a simple, inexpensive ground station with a relatively small antenna, which can receive broadcasts directly, eliminating the necessity for the elaborate ground complex. If the satellite has enough power, the home TV can qualify as a ground station with slight modification, costing an estimated $125. An interim alternative for underdeveloped nations that have no TV is the community receiver, capable of displaying a large-screen picture in the local school, town hall, or the village elder's backyard.

Direct broadcast to the home tube can be available within the decade if demand is demonstrated. Community TV is much closer. The National Aeronautics and Space Administration is already developing the first spacecraft capable of such transmission. Called Applications Technology Satellite F (ATS F), it is a large, sun-powered craft with the biggest antenna ever designed for in-space use, a thirty-foot dish that is folded during launch and deployed automatically in orbit. In 1972, the governments of the United States and India will use ATS F in a joint space-benefit demonstration of extraordinary significance, a far-reaching experiment in satellite-relayed mass-instructional TV.

Soon after its launch in mid-1972, ATS F will be jockeyed into a stationary position over India where it can "see" the primary ground station at Ahmedabad in the west coastal state of Gujarat, several auxiliary transmitting stations, and low-cost receivers to be set up by the Indian government in some 5,000 villages. TV programs—focused initially on population control and improvement in agricultural practices—will be beamed from the ground stations to ATS F and retransmitted to hundreds of thousands of people in the receiver-equipped villages.

If the year-long experiment is successful, and there is every reason to expect that it will be, India can move on to the next step, an operational, direct-broadcast system of its own. A study by one aerospace firm working on direct-broadcast satellites indicates that it is both technically and economically feasible to provide India, as early as 1974, with a single satellite capable of linking all of the nation's 560,000 villages. The potential is enormous. With a dearth of teachers and educational facilities, no interconnecting system of TV landlines and insufficient funds to build one, India can use the space satellite as an immediate instructional tool for the uplift of its 500,000,000 people.

The project has excited wide discussion in the United Nations, in other international forums, and in the executive chambers of developing nations all over the world. The low-cost aspects of direct broadcasting by satellite have implications of enormous dimensions. At a fraction of the cost and about one-tenth the time it would take to build a conventional communications network, a developing nation can acquire a nationwide communications network. The broadcast comsat can help knit a burgeoning country more closely together, speed the growth of commerce and technology, and bring entertainment to people who have known little. More importantly, it affords a direct attack on some of the world's most pressing ills through its use as an educational medium. India's planned targets, for instance—overpopulation and low yield per acre of tillable land—are examples of major problem areas susceptible to improvement by mass instruction.

THE WEATHER SATELLITE

Last September, shortly after the launch of Nimbus III, NASA's most advanced meteorological satellite, there occurred an incident that received scant attention from the news media but had space scientists turning cartwheels. Orbiting 600 miles above Kingston, Jamaica, Nimbus III relayed to earth a complete "profile" of the temperatures at every altitude from the ground up to the top of the atmosphere. Later comparison showed the readings to be completely accurate; the profile coincided almost identically with one taken by a balloon launched from Kingston at the same time.

The achievement may not sound like much to the laymen, who might think that temperature-reading equipment is standard on all weather satellites. It is not; until Nimbus III, the informational capability of the weather satellite, or "metsat," was confined to photographic coverage of the earth's cloud cover.

Nimbus III's accomplishment represented a very important breakthrough in metsat development. Made possible by a new instrument called SIRS (for Satellite Infrared Spectrometer), it pioneered a technique known as "vertical sounding," in which highly sophisticated sensors in the satellite measure the various conditions in the atmosphere that contribute to changes in the weather. These sensors, coupled with other metsat technological advances and concomitant improvement in the ground-based weather-analysis system, hold the key to accurate weather predictions two weeks or more in advance. Obviously, long-range weather forecasting is potentially one of the most

productive areas for harvesting benefits from space technology.

The weather satellite system that the Environmental Science Services Administration (ESSA) has been operating for the past four years has proved the value of the metsat. The thousands of cloud-cover photographs being transmitted daily by ESSA's eight satellites have contributed substantially to upgrading the professional dignity of the weatherman, long the butt of the jokester. When the weatherman says "zero probability of rain tomorrow," it's pretty safe to get out the golf clubs; the metsat has made possible an accurate increase in predictions for up to forty-eight hours.

The satellite's most important utility has been in provision of storm warnings. From its vantage point in space, it can detect the buildup of a destructive storm, track it, estimate its force, and predict when and where it will strike inhabited areas. Metsat warnings have cheated many a hurricane or typhoon of its anticipated toll of casualties.

But the capability of the existing metsat system is limited. The satellites operate in relatively low-altitude orbits, circling the earth every two hours or so. In that way, they can photograph most of the earth in a twenty-four-hour period, but they observe no given area continually, as would be possible with a stationary satellite. Although cloud-cover photos are a valuable addition to the meteorologist's data file, they are just that—a supplement to conventional methods of gathering atmospheric data, rather than a primary system.

Reliable forecasts need more than cloud-cover input. The source of the earth's weather is energy radiated from the sun, which penetrates the atmosphere and triggers a variety of changing conditions. The primary clues to the distribution of solar energy, hence the type of weather that can be expected, are temperature, pressure, the movement of air masses, and the moisture content of the air. Such information is currently obtained from aircraft, ships, rockets, balloons, ocean buoys, radars, and visual observations from the ground. There are some 7,000 stations reporting the data, but even so they cover only one-fifth of the earth's surface and reports are periodic rather than continuous.

What is needed for a global, long-range weather-forecasting system? First, atmospheric measurements over the *entire* earth, by means of satellites equipped with vertical sounding sensors capable of providing all the data now acquired by other means. The space system will probably include low-altitude satellites for certain applications, but the main workload will fall to a network of synchronous, stationary metsats that can relay simultaneous and continuous information.

But the satellite segment of the system is "only one leg of the stool," as one space scientist puts it. The satellite simply acquires information; the information must be put to work by people. It must be collected from the satellites, transmitted to regional receiving stations, analyzed, translated into usable form, and delivered to weathermen all over the globe. This demands a system of interconnected, computerized data-transmission facilities far beyond anything in existence today.

An even more important requirement is what scientists call a mathematical model. This is a computerized numerical representation of the composition of the atmosphere, a basic reference point for determining what the weather will be like under a given set of conditions. One might think that in an explosive scientific era that has witnessed landings on the moon such a model already exists. But weather is a complex subject, and there are still major knowledge gaps to be filled.

Important steps are being taken toward realization of both the mathematical model and the worldwide data-relay system. More than 100 members of the World Meteorological Organization are pooling their resources in two massive projects called the World Weather Watch and the Global Atmospheric Research Program (GARP). The Weather Watch is an operational surveillance system, the major aim of which is the establishment of a worldwide, computerized telecommunications network for transmitting and processing meteorological data. GARP is an extremely broad research program from which scientists hope to attain a level of understanding of the dynamic processes of the atmosphere sufficient to develop the long-sought model.

The pacing factor in two-week-plus weather forecasting is development of the requisite sensory devices. The outlook is promising. A variety of atmospheric sensors, based on photographic, infrared, microwave, radar, and laser principles, is already in or approaching flight status, and NASA will space-test them over the next few years with its Nimbus and Applications Technology Satellites. In addition, ESSA expects to have a degree of vertical sounding capability in its new generation of operational satellites, and the Agency plans to have stationary metsats in orbit by 1972. It seems very likely that the mid-1970s will bring forth the synchronous metsat with a full range of sensors and that at least a prototype of the global, long-range forecasting system—satellites and earth components—will become a reality by the end of the decade.

When such a system becomes fully operational, it can provide staggering benefits. Since everybody is a weather expert, one can conjure up his own vision of a world in which the weather is known two weeks, three weeks, even a month in advance. Some major examples of the advantages include better planning for all forms of transportation, particularly aviation; reduced loss of crops from weather changes; reduction of flood and storm damage; optimum scheduling of work force, machinery, and materials delivery at construction sites; and better management of public utilities through advance knowledge of load requirements and efficient scheduling of maintenance operations.

Among the broadest benefits, aside from general public convenience, are savings of life and property, a substantial gain in worldwide crop yield at a time when population expansion threatens the world food supply, and hard economic returns of tremendous scope.

Because of the myriad factors involved in a subject so broad, it is very difficult to make precise dollar-benefit estimates. There is, however, a generally accepted yardstick, an estimate made by a study panel of the National Academy of Sciences' National Research Council, which rated economic benefits of a long-range forecasting system at $2.5 billion a year. The figure, the Academy admits, is conservative, and it is for the United States alone. Further, it covers only the four broadest and most visible areas of benefit—agriculture, construction, transportation, and flood/storm control. There are hundreds of others—on-location motion-picture filming and programming outdoor sports events, to mention only a couple—whose individual dollar savings are less impressive but whose aggregate might run to additional billions. Applying even the most conservative estimates, the yearly economic return of the global system is potentially several times the amount of all the money expended on metsat research and operation since the first such "working" satellite went aloft in April 1960.

And, once the system is fully operational, man will be able to realize one of his oldest and fondest dreams—to "do something about the weather." With current and foreseeable advances in the art of weather modification, abetted by the vast encyclopedia of atmospheric knowledge provided by the mathematical model and the metstat reporting system, it appears not only possible but probable that weather conditions can be altered. Scientists feel that it will be possible to change the timing, amount, and distribution of rainfall; to take the sting out destructive storms by reducing their intensity or directing them into harmless paths; to suppress hail and lightning; to clear fog; to prevent frost; even—though it is farther down the road—to effect large-scale changes of climate.

Fantastic? Today it seems so. But what was more fantastic, only a decade ago, than the wild talk about landing men on the moon?

NAVIGATION/TRAFFIC CONTROL SATELLITE

Another area in which the satellite offers great promise is in precision navigation and traffic control for aircraft and surface vessels.

Since 1964, the Navy has been demonstrating the utility of the navsat with an operational system used to pinpoint the location of fleet ballistic-missile (FBM) submarines. Before the advent of the navsat, the Navy frequently experienced navigational errors of two to three miles in good weather, and as much as fifty miles in bad weather. The network of navigational satellites makes possible position "fixes" with errors as small as the length of a submarine.

The Navy navsat, however, is oriented toward position determination for the individual boat rather than surveillance of a large number of craft, so it cannot be readily adapted to civil use. Using the Navy's experience as a departure point, civil agencies are working toward development of a combined navigation/traffic control system for both marine and aviation employment. It has sweeping potential for benefits in safety and in economic return.

The proposed system envisions a pair of stationary satellites over each of the oceans. Each satellite, its location in space known precisely, becomes in effect an artifical star, a reference point for fixing aircraft and ship positions. In operation, each of the two satellites sends a continuous radio beam which is picked up by a receiver in a "mobile"—the term used to embrace both planes and ships—and triggered back to the satellites. Computer translation of the time it takes the signal to travel from mobile to satellite gives the exact distance between them, hence a line of position. The point at which position lines from the two satellites intersect is an exact fix available simultaneously to the mobile's navigator and to the land-based traffic control center to which the information is relayed by the satellite.

Although it may someday be applicable, the navsat is not now a panacea for the problem of air traffic control in high-density areas. It can, however, be of significant value in overwater air movement, where there are no watchful radars along the flight path and where existing earth-based, long-range radio navigation aids do not provide the degree of precision needed for efficient air traffic control. The situation over the North Atlantic, the most heavily traveled overwater route, serves as an illustration of navsat benefits.

Because of navigational shortcomings, traffic control regulations demand a 120-mile lateral separation of aircraft as an anticollision measure. This means that, when a number of planes depart a terminal within minutes of each other, only one of them can take the direct, shortest-distance-between-two-points route. The second must move out 120 miles to one side of the direct course; the third, 120 miles to the other. The fourth and fifth airplanes must fly 240 miles off course, and so on.

Aside from longer travel time for the passenger, such directional inefficiency costs the airlines in increased fuel expenditure. It is

estimated that extra costs run from $30,000 to $50,000 per year per airplane, which amounts to a very substantial figure or airlines operating large fleets. The satellite system can reduce required lateral separation to thirty miles at a dollar savings for the North Atlantic alone estimated at close to $20 million a year.

The new breed of airliners, like the Boeing 747, will have very accurate onboard navigational equipment, an inertial navigation system that is a direct spinoff from Apollo. This is not, however, a substitute for the navsat; effective traffic control demands an independent ground-monitored system to confirm the onboard position determination.

The navsat may find even greater utility in the field of surface shipping. There are some 3,000 ships of more than sixty countries reporting to the existing traffic control system and probably a greater number of nonreporting smaller craft, such as deepwater yachts and fishing boats. Ship traffic control is relatively new; it is subject to the vagaries of long-range radio transmission; position reports are not mandatory and those that are made frequently are suspect because only the largest and most modern ships have adequate all-weather navigational equipment.

Collision avoidance is, of course, the primary advantage of the navsat system, but there are other benefits, due to the fact that the navsat also doubles as a communications satellite, permitting voice linkage between ship and shore. This allows the transmission of up-to-the-minute regional-weather advisories so that ships can steer clear of storms. It also offers more reliable, lower-cost direct contact between company offices and ships anywhere in the world.

There are no concrete estimates as to the economic potential of the navsat as regards surface shipping, but it is clear that they are of a substantial order. Precision navigation is, in itself, a money-saver in fuel costs and reduced time at sea. Direct home-office-to-ship contact offers wider flexibility in scheduling and routing, an important factor in merchant shipping. And the prevention of even a minor collision offers corollary savings far beyond the cost of damages. Take, for example, the oil-shipping industry, where efficient operation entails tight coordination of ship dockings and oil flow. The removal of a single ship from service can cause a temporary shutdown of an oil field with losses running to a million dollars a day.

The real benefit of the navsat system, for both ships and aircraft, is in human safety, not only in collision avoidance but in post-accident rescue. All too frequently search-and-rescue craft experience delays—or complete failure—in their efforts to find a downed aircraft or a distressed ship, because the last known position reported was miles from the real location. Through continuous monitoring, the traffic control centers will know the precise position of any troubled craft, eliminating the search period of a rescue mission wherein time is literally a life-or-death factor.

A major part of the effort needed to bring this important system into being, involves development of onboard equipment cheap enough to be available to the smallest ocean-going craft. Fortunately, the mobile will not need elaborate and costly computers, since the computing function will be handled by the satellites and the land stations. Ships and planes need only a new-type receiver and antenna and a signal booster capable of reaching the satellite, orbiting 22,000 miles high. It appears quite feasible to produce such equipment at relatively low cost.

Technology for the civil-use navsat is well advanced. With the Applications Technology Satellites I and III, NASA and a number of airlines have been conducting satellite-to-aircraft tests for several years, and the results have demonstrated the workability of the system. NASA and the Federal Aviation Administration are developing plans for the prototype one-ocean air-traffic-control system, and the European Space Research Organization has expressed interest in joining the experiment. No major breakthroughs are required, and it is generally accepted that an operational system, for ships as well as aircraft, can be put in service by 1975.

EARTH-RESOURCES SATELLITES

Perhaps the greatest potential for realizing hard economic returns from applications spacecraft lies in earth-resources surveys, or keeping satellite watch on the globe's natural resources with the aim of better managing nature's bounty. This program can alleviate many of the world's paramount ailments, in that it can help to produce more arable land, more water, food, clothing, shelter, and fuel to meet the needs of a population that is growing at an alarming rate.

Like the advanced weather satellite, a close relative, the earth-resources survey spacecraft reaps its harvest of benefits by means of remote sensing devices. Generally, earth-resources sensors focus on the earth's surface and subsurface rather than on its atmosphere. An example is a crop-imaging sensor, designed to take advantage of the fact that various types of vegetation reflect light in different bands of the spectrum and in different degrees. This makes it possible to program an imager to "see" one particular kind of vegetation—wheat, for instance. From either a stationary or a "moving" orbit, the sensor can take a picture of a large region in which the total wheat crop is imaged in a given color. This provides the basis for predicting crop yield and planning its distribution, important factors in agricultural management.

The sensors provides an extra bonus in reducing crop losses, because the image would also pinpoint areas where the wheat crop is threatened. A slightly different coloration would indicate plant disease, and it would show up sooner because of constant surveillance. As is the case in human physiology, disease detected early can most readily be treated.

The information provided by the satellite's battery of sensors will be relayed to an earth-based, computerized data-handling and analysis network like that being developed for the global metsat system, perhaps the same one expanded to accommodate the additional input. Thus, regional data banks all over the world will receive daily volumes of information that can be put to work for man's benefit in three basic directions: The information will provide more of everything through far better management of the world's resources; it will uncover new resources; and it will identify trouble zones for earliest remedial action.

Here are some examples of what this information would mean to the world:

In agriculture, besides controlling losses, it would facilitate national land-use planning—what to plant and when, where to build roads for movement of harvests, where to locate irrigation works, and a variety of other management considerations. Good land management is vital to agricultural output, as is evident in the high-yield nations of North America and Europe, each of which already has some sort of information-reporting system. Even for these countries, the earth-resources system offers a vast improvement in efficiency because of the rapidity with which the information can be obtained as contrasted with existing methods. But the real potential of the system lies in upgrading the management capability of the underdeveloped nations of Africa, Asia, and South America, many of which have never surveyed their land resources.

In hydrology, the earth-resource system would detect water-pollution trends, provide a complete inventory of lake and reservoir levels, show rainfall and snow levels, allow quicker prediction of potential floods, and locate freshwater reserves in underground springs and streams, which collectively are believed to hold thousands of times more water than all the rivers.

In oceanography, it would benefit the fishing industry by accurate location of fish schools, aid maritime commerce by better charting of sea conditions and wave profiles, and spot ice fields for iceberg warning.

In geology, it would allow continuous monitoring of glaciers and volcanoes, improve earthquake prediction and warning, and, most importantly, identify terrain features associated with oil and mineral deposits, particularly in those remote areas not explored by aircraft.

In geography, it would produce a constantly updated "living" map, showing population densities and spread trends for use in urban development and transportation planning.

These are but a few of the more visible potential benefits. Experts have identified a great many more, and experience with the system undoubtedly will open up broad new ranges of application not yet considered. One space scientist sums it up with the statement that the earth-resources satellite system is applicable to "all the conditions of the earth's surface that are of economic or cultural interest to humanity."

What is such a system worth? Clearly, a subject so broad does not readily lend itself to accurate appraisal, and many of the benefits are humanitarian rather than economic. There is one study that serves as an indicator of the enormous scope of the potential benefits. NASA investigated agricultural losses in the United States and calculated that an earth-resources survey could reduce them by ten percent, an extremely modest gain. The resulting estimates showed savings approaching $400 million a year in reduced crop losses; increased meat output valued at $350 million annually due to early detection and correction of nutrient-deficient rangeland; and $100 million a year in agricultural land saved from floods.

From these guidelines, which embrace only a single area of benefit in a single country, even the most conservative assessor must assign to a global system an economic value running to billions of dollars a year.

Experience with the worldwide communications and weather satellite networks shows that the nations of the world are ready to band together to reap the advantages of space technology, but conclusion of the necessary international agreements leaves open the question of when the global system can become an operational reality.

The technology is now or soon to be available. NASA has already signaled the go-ahead for the first Earth Resources Technology Satellites (ERTS), experimental models whose assignment will be the evaluation of certain types of resources-monitoring sensors and other data-collection equipment. Design contracts for the ERTS were awarded last October, hardware fabrication will begin this year, and the first ERTS will be sent into orbit in 1972.

Although ERTS is purely a developmental program, it will have a limited operational capability. It will produce a land-use map of the United States, classify surface geological features as an aid to mineral exploration, identify soil features for agricultural purposes, and collect information from unmanned earth-based devices, such as river gauges. The ERTS spacecraft will provide the developmental base for an operational earth-resources survey system, which, technically speaking, is a "within the decade" probability.

DERIVED BENEFITS

Less dramatic, less sweeping, not as easily understood, and in some cases practically unknown are space benefits of the "derived" category, those that stem from general technological advances rather than from the application of satellites to earth uses. The primary source of this class of benefits is the

Apollo program, the broadest and most rapidly progressive technological undertaking ever attempted by man.

So extraordinary were the demands for performance and reliability needed to land men on the moon that the Apollo team had to create an entirely new order of technology and to compress several decades of normal technological gain into less than one. Advances in aerospace technology were not, by themselves, sufficient for the task; it became necessary to force progress in virtually every scientific and technological discipline.

The results of this monumental effort reach far beyond the ability to build better aerospace vehicles. The knowledge acquired affects many channels of man's way of life; its yield embraces thousands of new ideas, inventions, materials, and processes for the betterment of human existence.

On an ever-accelerating scale, the vast library of know-how is being put to work. Through its Technology Utilization Program, NASA is working hard to achieve maximum return on the space investment by transferring the know-how to nonaerospace applications.

The space agency is not simply waiting and hoping for technology transfers. It is actively pushing them by means of a well-managed program operated on a minimal budget. Specialists at field installations and in the plants of contractors scrutinize every research and development project, trying to find new applications, and report their "possibles" to the space agency's headquarters. Working with independent research institutes, the technology utilization staff sorts out the "possibles" and the "probables" and disseminates information on the latter to almost 7,000,000 potential users. So far NASA has identified some 2,800 probables, and about a third of those have already found their way into the civil economy.

Most familiar are the new products coming into the market. The list is far too lengthy to recount more than a random sampling: A hand-size, battery-operated TV camera, used to photograph rocket-stage separation, is being used to monitor industrial processes; spacecraft-coating research produced an ultra-long-wearing paint for home use; a device employed to find space capsules in the oceans, the "underseas pinger" has new employment in the plotting of ocean currents and in tracing the movements of fish schools.

The medical profession has been a particular beneficiary of technology transfer. For example, a lunar-gravity training device has become a tool for teaching crippled persons to walk again; a tiny space-sensor, so small it can be inserted into an artery without discomfort, has been adapted to medical use; a plastic-metalic spray for attaching heart electrodes to pilots makes it possible to radio ahead to a hospital an electrocardiogram of an ambulance patient.

Among the larger direct economic benefits of technology tra_sfer are a great variety of new tools and processes that are bringing new efficiency to American industry. Examples: An electromagnetic hammer, invented for launch-vehicle construction, causes metal to flow like soft plastic, so that it can be smoothed and shaped without weakening; an electron beam devised for spacecraft construction can accomplish on one welding pass what might take fifty to 100 passes by earlier methods.

Still another area of transfer is new materials. An extremely thin, high-strength aluminum foil, a requirement for an unmanned satellite, is employed in packaging sensitive pharmaceuticals; pyroceram, developed for radar tracking domes, has brought increased durability for kitchen utensils; Apollo's spray-on foam heat-shielding has application as a home insulator.

For each of these examples, there are multiscore others. Some of them amount to little more than a small increment of added convenience, but others represent economic benefits of a very substantial order, and in many instances new companies have been formed solely for their exploitation.

DATA BANKS

Taking the process of technology transfer a step further, NASA has set up six Regional Dissemination Centers, operated by universities and research institutes, to serve fee-paying industrial clients. NASA calls the Centers "knowledge brokers." Their stock in trade is a vast warehouse of some 750,000 technical documents whose contents have been abstracted, categorized, and computerized for ready access; NASA's own input is backed by reports from the Department of Defense and the Atomic Energy Commission.

Updated every two weeks, these great data banks contain the latest scientific lore in all of the many disciplines that space research encompasses. They are information gold mines to businessmen exploring new markets, looking for answers to operating problems, or simply seeking to keep their technical personnel abreast of developments in their fields. The system works this way:

A client is provided a librarian, to whom he spells out his needs. The librarian, an engineer or scientist skilled in the client's field of interest, prepares a computer query, narrowing as closely as possible the area the machine must search. The electronic search produces the titles of perhaps 150 technical reports that seem applicable. The librarian discards most of them, selects a score or more that seem most pertinent, and asks for brief summaries of the reports. The automated system provides printed briefs, or single-page abstracts, which the librarian digests and weeds out. The remainder are given the client, who may then order the complete reports.

A single search may cost $150 and bring a hundredfold return to the client. For example, a textile manufacturer in North Carolina, skeptical of any relationship between his own business and the exotic research being conducted in space, was persuaded to give the system a try. He went to the Center in his area and presented the librarian a quality-control problem. The old equipment he was using could not maintain desired yarn consistency—output varied from too thick to too thin. Was there a solution short of replacing the equipment? The computer search turned up details of an infrared scanner that could be adopted to keep an electronic eye on yarn thickness and warning when it slipped out of tolerance. It is now in service.

The proper information usually gives a client's own technologists a line of approach toward solving the problem but, where information is not enough, the Center goes a step further and locates, in its computerized file, the most authoritative consultant for a given task. Example: A California company specializing in products for the oil-drilling industry came up with a design for a tool long sought by drillers, a device that could monitor the direction of the bore and warn of deviation from the desired path. Key to the design was an accelerometer, or motion-sensor. However, prototype construction was snagged because the company's engineers could not find on the regular market an accelerometer capable of withstanding the broad temperature range and sharp jolts it would have to take in its drillhead mounting. The company's president went to the application Center where a computer search turned up a specialist in small, superdurable acceleromters. He solved the problem, and the monitoring device is now in pilot production.

Many firms subscribe to the service on a yearly basis, seeking a competitive edge by keeping their technical personnel up to the minute. For one large company, a Center screened 63,000 abstracts in a six-month period, submitting 4,500 as "possibly pertinent" to the company's interests. The company's own technologists selected 153 of them for follow-up investigation. Impressed by the results, the firm has appointed its own technology utilization manager to provide liaison between the data bank and its research engineers.

NASA can't afford the machinery needed to trace every transfer and estimate direct economic benefits, but reports filtering in from beneficiaries indicate it is of a very substantial order. One major research and development organization credits data-bank service with savings of $1 million a year. Few reports are that impressive, but a thumbnail poll of fourteen companies during one quarter of 1969 showed that, as a direct result of Center services, five companies had sales increases totaling $1 million, five effected production-cost savings amounting to $20,000, and four had labor savings totaling 1,000 man-hours.

By themselves, such gains don't seem very significant, but the Centers are now serving some 700 customers, and the list of regular clients is growing at the rate of twenty to twenty-five percent annually. The oldest Center, with fees of almost $300,000 in 1969, has virtually reached the self-sufficient stage, and others are approaching that level. When fees exceed the costs of maintaining the service, client charges will be reduced, increasing the attractiveness of the service and expanding its breadth. The biggest problem is spreading the word of the tremendous national resources stored in the data banks; many potential beneficiaries either are unaware that the service exists or believe, like the textile manufacturer, that space research is too remote from their operations to produce any concrete gains.

SOFTWARE FOR BUSINESS

In this age of the computer, more and more business firms are automating their operations for increased efficiency in everything from complex machining to simple accounting. Time-sharing plans make the computer itself available even to very small companies at modest costs, but a larger cost factor is developing a computer program for a specific application. Space spinoff is helping industry to reach new levels of efficiency at low cost, by making available programs that can be adapted to a wide variety of business uses. In the course of twelve years of space research, NASA has developed thousands of programs, which are simply taped sequences of instructions telling a computer how to solve a problem or produce desired information from its stored input. Usually, a program can be converted from one computer "language" to another, or from one machine to another. Many of NASA's programs are too esoteric for general use, but a surprising number can be adapted to everyday business purposes.

At the University of Georgia, NASA has established the Computer Software and Management Information Center (COSMIC) for the benefit of the business community. From field installations, NASA contractors, DoD, AEC, and university research laboratories, COSMIC gets a continual flow of computer programs which are reviewed for their adaptability to uses other than those for which they were designed. The Center now has an inventory of about 1,000 such programs, and NASA issues a quarterly bulletin stating the types available.

The broad utility of space-developed software is illustrated by the example of a program used in the design phase of the rocket engine that powers the upper stages of the Saturn V launch vehicle. Engineers at Bonneville Dam employed the same basic program in their design of control circuitry. General Foods used it for food-preparation research. The University of North Carolina

adapted it to public health studies. With modifications for their specific needs, more than 300 American businesses found a use for this one program.

So far COSMIC has disseminated some 20,000 software items, a munificent benefit to industry since NASA deliberately keeps the costs low to attract broadest interest. Prices run from $125 to about $1,200 per program and NASA estimates that a COSMIC customer can get a software package for from one-half to one-tenth what it would cost him to develop a similar program from scratch. COSMIC is still in its infancy—it was started in 1966—but early results indicate it may become one of the really big areas of return on the space investment.

BIOMEDICAL APPLICATION TEAMS

NASA's manned space programs, particularly Apollo, demanded a great deal of research in the biosciences. This, together with other areas of intense developmental effort—such as microminiaturization, instrumentation, and telemetry—made the world of medicine a natural prime beneficiary of space spinoff. Noting that medical systems constituted an exceptionally high percentage of the new products and techniques being transferred to the public economy, NASA concluded that medical research offered a particularly fruitful field for a more sharply focused thrust. As an adjunct to the continuing business of promoting product transfer, the space agency launched an assault on specific problems of medical research, on the premise that space knowledge and expertise might offer lines of solution where none existed otherwise.

At independent research institutes, NASA organized three Biomedical Application Teams (BATs). Each team is composed of a mix of space technologists and medical men, and it is "multidisciplinary" in nature, meaning that a BAT is composed of a number of skilled specialists—physicians, surgeons, biologists, physicists, mechanical engineers, electronics engineers, information scientists, and so forth. Working with university medical centers and other medical research groups, the BATmen seek first to identify problems that appear susceptible to space-technology application. They prepare "medical problems abstracts," which are used to search NASA's data banks for relevant technology and for existing expertise in the problem area. The experts thus located are then invited to join the attack on the problem.

As an example, a medical researcher at Duke University Medical Center developed a technique for more precise monitoring of human heart action by measuring electrical signals simultaneously at fifteen points of the heart wall. The problem was how to ensure good electrical contract at so many points without damaging the heart wall in the process of insertion. The BAT in the researcher's zone, operated by Research Triangle Institute in Durham, N.C., prepared the abstract, searched the data bank, and turned up an instrumentation engineer exceptionally qualified for the task. He designed a safe, fifteen-electrode probe that could be inserted by an ordinary hypodermic needle; it was thoroughly tested, found to be the answer, and it is now in use.

The BAT operation is a form of technology utilization activity to which no economic value can be assigned but which is nonetheless a "hard" benefit to mankind. It also exemplifies the "nonvisible" type of benefit; the heart probe may help prolong the life of many a person who may be completely unaware that he is a beneficiary of space technology.

In three years of operation, the Biomedical Application Teams have chalked up a strikingly successful record. They have identified some 500 problems and found a solution for one out of every five. A .200 batting average does little for a baseball player's image, but in medical research it represents a high order of success. It has excited wide interest among the medical community and NASA anticipates snowballing growth in this vital area of space benefit.

Encouraged by the success of the BATs, NASA recently broadened the focus of the application team concept with the organization of its Technology Applications Teams (TATs). "Technology," in this sense, means technology applicable to "people problems"—broad areas of national concern such as air and water pollution, highway safety, law enforcement, urban construction, and a good many others. Like the BATs, the TATs are multidisciplinary groups, except that the nonaerospace input usually comes from other government agencies.

One of TAT's first problems, brought to NASA's attention by a metropolitan fire chief, involved the high number of casualties among firemen due to inhalation of smoke or toxic gases. It was established that existing protective breathing devices left something to be desired from the standpoint of efficiency, and the TAT at IIT Research Institute of Chicago was assigned the job of suggesting a new design approach. Interviews with a great many fire experts produced some tough requirements: The system had to be low-cost for widest acceptance; it had to operate for at least thirty minutes yet should weigh no more than ten pounds; for visibility, the face-mask visor should be fog-proof; and the backpack harness should not restrict the wearer's movement.

A technology search disclosed several areas in which NASA had done a lot of research. A space agency contractor had developed, for astronaut use, a "chlorate candle," which generated oxygen by the chemical decomposition of sodium chlorate, with high reliability and at considerable backpack weight-saving. Another contractor had developed a completely fog-free face-piece for full-pressure suits. Also available was a lightweight nonrestrictive harness assembly originally designed for astronaut use. A bonus innovation was found in a liquid-crystal device incorporated in an astronaut's helmet to indicate the temperatuures he is encountering. The Technology Application Team put them all together in a compact design, now being evaluated, that seems to be the answer to a fire fighter's prayer.

The TAT program, only nine months old, is moving into broader areas of problem-solving, in cooperation with such agencies as the Department of Transportation; the Law Enforcement Assistance Administration; the Department of Justice; the Bureau of Reclamation and the Federal Water Pollution Control Administration, both in the Department of the Interior; and the National Air Pollution Control Administration of the Department of Health, Education and Welfare. One current program, being jointly conducted with the US Bureau of Mines, aims at reducing the death toll in mining disasters. Here TAT personnel hope to be able to apply NASA's considerable expertise in rescue and survival technology, communications, sensors, and life-support devices. Under consideration is the use of such space-developed equipment as radar and sonic systems for locating trapped miners, chlorate candles for underground life support, sensors to identify mine sectors poisoned by carbon dioxide, and devices for restoring ventilation knocked out by explosions.

TATmen have identified a number of other areas in which space technology appears to have direct application to public problems. For instance, experiments in how much deceleration force an astronaut can sustain are applicable to minimizing injuries in auto accidents; sensor technology may prevent railroad train derailments; detection systems can measure the components of air pollution and existing mechanical devices can be applied to controlling pollution at the source; materials technology promises lower-cost housing construction; and a great variety of advanced communications systems are available for improved law enforcement. and space science techniques can be used to advantage by criminology agencies.

Space enthusiasts are fond of asserting that the people of the twenty-first century will look back upon the United States' venture into space and declare it to be the best investment in the future ever made by any nation. That seems very likely. But, from the evidence at hand, even those of us who cannot expect to see the next century may be able to say as much—within this new decade.

Mrs. SMITH of Maine. Mr. President, I rise in opposition to amendment No. 612, offered by our able colleague from Minnesota (Mr. MONDALE).

I have listened to this interesting discussion this afternoon and in reviewing it I would like to refer to several important points in a very brief way.

I would like to emphasize that in this $110 million would be the study of the space shuttle program. There is no commitment made.

I would call to the attention of Senators, pages 39 and 69 of the hearings, at which time Mr. Gehrig, the staff director, asked Dr. Paine questions and received very specific answers. On page 69 I asked similar questions and received very specific answers from Mr. Myers and Mr. George Low.

There is a great deal of discussion about the Mars project every time we discuss the space program. There is no commitment whatever in this bill for a trip to Mars in any way, shape, or manner. If I may repeat, the only money is for the study of the shuttle system. Those who have to do with this program are trying to find economical space transportation systems and out of this study they hope something may be developed.

I must oppose this amendment because I think there is no question but that it will kill the manned program.

It has been stated already there is no large payload system following 1974. Nonetheless, we cannot wait 1 year or 2 years if we expect to go forward as this country must do.

Also there has been a good deal of discussion on the needs of our domestic programs, the welfare and the poverty programs. I have great sympathy for these programs. I think my record is as good as the record of anyone in the Senate on our welfare programs. The 1971 budget for human resources is 25 times greater than the space budget. Therefore, I think we have no apologies to make on our neglect of welfare programs.

Mr. President, this shuttle item is very important. I hope very much the Senate will reject the amendment. The shuttle program, if it is studied and if it comes into being, would save a great deal of money on the system of reusing the shuttle and space stations.

Therefore, I urge and recommend that the amendment be rejected.

Mr. GOLDWATER. Mr. President, I oppose the pending amendment to cut

$110,000,000 from the NASA budget request which would delete the funds for further study of the space shuttle/station project.

Mr. President, the NASA budget is one of the few department and agency budgets of the Government which over the past few years has been consistently reduced, so that the bill pending before the Senate represents the smallest request for the National Aeronautics and Space Administration since 1962. While I am aware of the necessity to allocate funds in accordance with priorities I believe that the constant demands to cut one of our Government's most successful programs has now approached the ridiculous.

Mr. President, I have sat here year after year and listened to the same arguments that the funds allocated for our national space program should be cut in order to allocate the funds for education, urban improvement, pollution, and so forth. The truth is, Mr. President, that this year the Congress is appropriating billions upon billions of dollars for education, urban improvement, pollution, and so forth, and the entire space budget is but a drop in the bucket compared to the funds being appropriated for domestic programs.

Do not misunderstand me, Mr. President, I am not against aid to education, or urban development, I am in full sympathy with those who seek to decrease the pollution of our atmosphere. I am however, becoming weary of having these programs used as the means to construct a collossal strawman in an attempt to scuttle our national space program.

Today the sponsors of the pending amendment would have you believe that the money allocated to the space shuttle/station project is for development. Mr. President, nothing is further from the truth. Not one dollar of this authorization will be used for hardware development of the space shuttle project. The money will be used to complete phase B studies which will provide the technical information needed to determine whether or not to proceed. The sponsor of the amendment says we should not embark on such a project until the feasibility of a space shuttle/station has been demonstrated. Mr. President, this is exactly what would be done with these funds. This is the purpose of the authorization. The Space Committee has emphatically stated that the authorization of these funds does not contain a commitment to proceed to the development of this project.

Mr. President, there are those who tend to have short memories; 1957 was not very long ago. Who cannot remember the cries of indignation which arose when the U.S.S.R. orbited a payload of significant weight while we struggled mightily to launch a payload the size of a grapefruit. We have indeed come a long way. Men have landed on the moon and we are all proud that they were Americans.

The crew of the Apollo 13 survived a major failure in their equipment 200,000 miles from the earth. People around the world watched in awe as Americans accomplished what surely must be the most dramatic rescue in the history of the world.

Who can forget the beautiful sight on television when first we saw that brilliant red and white canopy as it gently deposited its precious cargo in the blue waters of the Pacific? We sat with lumps in our throats as three tired but happy men strode down the ramp and stood with heads bowed as they listened to a prayer of thanksgiving for their rescue. Their safe return was a combination of outstanding American technology, American intuition, and a lot of old-fashioned American guts.

It was heartwarming a short time later to hear these men speak with confidence of the space program and express their willingness to fly the next missile to the moon.

Mr. President, our Nation cannot stand on dead center. It must move either forward or backward. Our national space program is but a very small percentage of our gross national product. It is not a crash program. The research which we are carrying forward today is thinking in terms of possible programs in the 1977–80 timetable. I feel that the budget recommended by your committee is a sound and realistic one. I urge my colleagues to defeat the pending amendment.

I ask unanimous consent to have printed in the RECORD a statement by James Lovell and a list of research facilities.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

OUR SPACE PROGRAM DESERVES A FUTURE

It is still beyond our ability to recognize the full significance of scientific data brought back to earth by Apollo flights 11 and 12, but the world's scientists have been both pleased and surprised with their preliminary findings. We have learned just enough to prick our curiosity, which is why I believe individuals who urge a reduction in space expenditures so that funds might be spent for other purposes—such as improved housing and the war against poverty and crime—are limiting their vision. In my view, space activities generate both technology and funds to help solve these problems.

It is easy to understand how the dramatic apects of the moon landings have blinded many to the deeper purposes and far-reaching benefits of the nation's overall space program. The moon landing, besides being worthwhile on its own merits, is also the instrument by which we are developing the knowledge, technology and systems for continued space efforts of direct benefit to everyone.

Space research has created new industries and many thousands of jobs—jobs not just for engineers and scientists, but jobs for people of every skill in many different industries. Some of the industries that have been greatly affected by the space program are: electronics, heating and air conditioning, insulation, power, metals, fuels, ceramics, machinery, plastics, instruments and textiles. Immediate benefit can be seen in the form of new products.

The space program has also improved many scientific services, such as transoceanic communications and global weather forecasting. An accurate forecast of weather conditions over the United States alone could provide an estimated annual savings of billions of dollars in agriculture, the lumber business, surface transportation, retail marketing and water resources management. Just these savings would be enough to pay for the entire cost of the space program! Satellites are also providing a more reliable navigation system—useful by day or night in any weather—for air and surface craft.

To me, one of the most important benefits of the space program is its stimulus to education in the science and engineering fields, while at the same time increasing greatly our supply of basic knowledge.

Our program affects about 84 nations, and is an important asset in the promotion of friendliness and international cooperation The U.S. space program's influence can be felt in almost every part of the earth, and reaches into almost every corner of American life. And much more than just the exploration of space and benefits we are receiving now, the great potential of the space program lies in future benefits—some foreseeable, some not.

One phase of the future manned space program is a large earth-orbiting space station. NASA designers envision a modular space station that would grow in evolutionary fashion over a decade, with the first launches to take place about 1975. Such stations will provide a two-way window for scientific observations—the earth below and the stars above—and benefits will be derived from both directions.

The word "environment" is one key to the practical importance of a space station. Understanding the lower atmosphere is especially significant at this time when we are wrestling with the possibility of actually modifying weather to serve practical needs such as decreasing lightning hazards, protecting crops from storm damage, reducing atmospheric pollution and, perhaps in the distant future, even taming the hurricane and tornado.

Earth photography, such as that done on the various Gemini and Apollo missions, adds a new perspective to the study of geography, geology, water resources, glaciers, the oceans, forestry an agriculture. The potential in these areas for practical returns is enormous.

The other direction for space station observers lies outward, across the universe. Here the economic benefits are less tangible, although at the heart of this capability may be the answers to man's basic questions concerning his own existence and the laws of the universe. We will be able to study the stars without interference from the earth's turbulent atmosphere.

From space we will better observe and thus learn to understand the physical processes which occur on the sun. The sun influences our weather and evolution and suggests the possibility of other life in our solar system.

Our national space program has been and will continue to be one of the catalysts of a scientific and technological revolution that is changing our whole way of living. Our lunar landings are only the beginning, and men with vision will look ahead to the future.

RESEARCH FACILITIES

[Institution and title]

Rensselaer Polytechnic Institute, Materials Research Center.

Stanford University, Exobiology Laboratories.

University of Chicago, Astrophysics and Space Research Laboratory.

University of Iowa, Physics and Mathematics Building.

University of California at Berkeley, Space Sciences Laboratory.

Harvard University, Biomedical Laboratories.

University of Minnesota, Space Physics Laboratories.

Massachusetts Institute of Technology, Center for Space Research.

University of Colorado, Laboratory for Space Physics.
University of California at Los Angeles, Slichter Space Sciences Laboratory.
University of Wisconsin, Theoretical Chemistry Institute.
University of Michigan, Space Research Laboratory.
University of Pittsburgh, Space Research and Coordination Center.
Princeton University, Propulsion Research Laboratories.
Lowell Observatory, Planetary Research Center.
Texas A&M University, Teague Space Research Center.
University of Maryland, Space Sciences Center.
University of Southern California, Human Centrifuge.
Cornell University, Radiophysics and Space Research Center.
Rice University, Space Science and Technology Laboratory.
Purdue University, Rocket Test Firing Facilities.
Washington University of St. Louis, Compton Research Laboratory of Physics.
New York University, Aerospace Sciences Building.
Georgia Institute of Technology, Science and Technology Center.
University of Arizona, Space Sciences Building.
University of Illinois, Aerospace Research Center.
Polytechnic Institute of Brooklyn, Bassett Aerospace Research Laboratory.
Case Western Reserve University, Space Engineering Building.
University of Rochester, Space Sciences Center.
University of Florida, Space Sciences Research Laboratory.
University of Minnesota, Space Science Laboratory.
University of Denver, Space Sciences Laboratories.
Stanford University, Space Engineering Building.
University of Wisconsin, Space Science and Engineering Center.
University of Washington, Aerospace Research Laboratory.
University of Kansas, Space Research and Technology Laboratory.
National Academy of Sciences, Lunar Science Institute.

Mr. KENNEDY. Mr. President, I think there are two crucial and related points which must be raised here. The first is the question of national priorities. Given our pressing domestic problems—poverty, crime, pollution—should this country embark on a new epoch and manned space flights? More particularly, given the budgetary belt-tightening we have seen this year, how can we justify spending $110 million for a space shuttle. I remind my colleagues that $110 million is four times more than the President has requested for air pollution research. I remind my colleagues that Federal support for basic scientific research, the source of the discoveries that will enable us to fight disease, fight pollution, fight ignorance in the future—is down by at least $60 million dollars this year.

This simply is not the year to spend $110 million on a space shuttle.

But there is another point. The space shuttle is part of a much broader commitment to manned space flights—a commitment which may lead to manned flights to Mars. And I do not believe we should start spending $110 million on a space shuttle until we have fully and intelligently debated the whole question of the future of manned space flights. Congress must live up to its responsibilities in the space area, just as it is now beginning to live up to its responsibilities in the military area. Let us have a full debate on the future of the space program just as we are having a debate on the ABM and on the war in Southeast Asia.

I think the American public and the American taxpayer have the right to expect that the Congress will closely analyze the manned space program before committing millions and billions of dollars to this program. The American public has the right to expect that millions will not be spent before we have determined whether or not man can survive long space flights, before we have determined the scientific benefits of manned as opposed to unmanned space flights.

Until this debate on the future of the space program has taken place—in Congress—in the scientific community—in the country at large—I cannot support spending $110 million on a space shuttle. Let the basic research go on, as the Senator from Minnesota (Mr. MONDALE) has assured us it will, but let us not commit ourselves to a space shuttle now.

Mr. CANNON. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. CANNON. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. CANNON. Mr. President, if no other Senator wishes to speak on the amendment, I think we are ready for a vote.

The PRESIDING OFFICER. The question is on agreeing to the amendment offered by the Senator from Minnesota (Mr. MONDALE). The yeas and nays have been ordered, and the clerk will please call the roll.

The assistant legislative clerk called the roll.

Mr. MANSFIELD (after having voted in the affirmative). Mr. President, on this vote I have a pair with the senior Senator from Mississippi (Mr. EASTLAND). If he were present and voting, he would vote "nay." If I were permitted to vote, I would vote "yea." Therefore I withdraw my vote.

Mr. KENNEDY. I announce that the Senator from Connecticut (Mr. DODD), the Senator from Mississippi (Mr. EASTLAND), the Senator from Arkansas (Mr. MCCLELLAN), the Senator from Wyoming (Mr. MCGEE), the Senator from New Hampshire (Mr. MCINTYRE), the Senator from Montana (Mr. METCALF), the Senator from Rhode Island (Mr. PASTORE), the Senator from Georgia (Mr. RUSSELL), the Senator from Alabama (Mr. SPARKMAN), the Senator from New Jersey (Mr. WILLIAMS), and the Senator from Texas (Mr. YARBOROUGH) are necessarily absent.

On this vote, the Senator from Rhode Island (Mr. PASTORE) is paired with the Senator from Wyoming (Mr. MCGEE).

If present and voting, the Senator from Rhode Island would vote "yea" and the Senator from Wyoming would vote "nay."

Mr. GRIFFIN. I announce that the Senator from Oklahoma (Mr. BELLMON) is absent on official business.

The Senator from South Dakota (Mr. MUNDT) is absent because of illness.

The Senator from Alaska (Mr. STEVENS) is absent to attend the funeral of a friend.

If present and voting, the Senator from South Dakota (Mr. MUNDT) would vote "nay."

The result was announced—yeas 29, nays 56, as follows:

[No. 141 Leg.]

YEAS—29

Bayh	Harris	Moss
Burdick	Hart	Muskie
Byrd, W. Va.	Hartke	Nelson
Case	Hollings	Pell
Church	Hughes	Proxmire
Cooper	Javits	Randolph
Eagleton	Kennedy	Ribicoff
Fulbright	McCarthy	Tydings
Goodell	McGovern	Young, Ohio
Gore	Mondale	

NAYS—56

Aiken	Fannin	Murphy
Allen	Fong	Packwood
Allott	Goldwater	Pearson
Anderson	Gravel	Percy
Baker	Griffin	Prouty
Bennett	Gurney	Saxbe
Bible	Hansen	Schweiker
Boggs	Hatfield	Scott
Brooke	Holland	Smith, Maine
Byrd, Va.	Hruska	Smith, Ill.
Cannon	Inouye	Spong
Cook	Jackson	Stennis
Cotton	Jordan, N.C.	Symington
Cranston	Jordan, Idaho	Talmadge
Curtis	Long	Thurmond
Dole	Magnuson	Tower
Dominick	Mathias	Williams, Del.
Ellender	Miller	Young, N. Dak.
Ervin	Montoya	

PRESENT AND GIVING A LIVE PAIR, AS PREVIOUSLY RECORDED—1

Mansfield, for.

NOT VOTING—14

Bellmon	McIntyre	Sparkman
Dodd	Metcalf	Stevens
Eastland	Mundt	Williams, N.J.
McClellan	Pastore	Yarborough
McGee	Russell	

So Mr. MONDALE's amendment was rejected.

Mr. CANNON. Mr. President, I move to reconsider the vote by which the Mondale amendment was rejected.

Mr. HOLLAND. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

The PRESIDING OFFICER. The committee amendment in the nature of a substitute is open to amendment.

Mr. CANNON. Mr. President, I move that the committee amendment in the nature of a substitute be agreed to.

The PRESIDING OFFICER. The question is on agreeing to the committee amendment in the nature of a substitute.

The committee amendment in the nature of a substitute was agreed to.

Mr. CANNON. Mr. President, I ask for a third reading.

Mr. FULBRIGHT. Mr. President, I should like to say a few words before final passage.

The PRESIDING OFFICER. The Chair recognizes the Senator from Arkansas.

Mr. FULBRIGHT. Mr. President, if the vote had not been so one-sided, I had intended to offer an amendment to cut this appropriation more. I do not intend to delay the Senate, but I am bound to say just a few words.

We have had hearings with the chairman of the board of the largest bank in the country, the Bank of America. This morning we had the Secretary of the Treasury before our committee. To me, this vote, of passing this large bill, involving over $3.3 billion, for a purpose which is not, in my view, related to the fundamental problems of this country, is very improvident under these circumstances.

I am not going to offer this amendment, for the sole reason that it would obviously be a waste of time. The sentiment of the Senate is already made up for this program, for whatever reasons they may have. I can only say that I think the evidence is that this body is not conscious of conditions which exist in this country today across the land—and not just in the schools. The situation in the schools is bad enough.

We are all aware of what has happened within the last few days in the State of Ohio. Similar things, not quite as tragic, have been happening in other States. I have been informed today that one of the greatest universities in this country—Princeton—has disbanded for the year. It looks as though our higher education system is deteriorating.

The evidence of the deterioration and undermining of our private enterprise economic system is clear to anybody who is willing to look. The judgment of the leaders of our economy, the great corporations, the financial men, the economists, is being reflected in what is happening in New York City, which is the center of what might be called our private enterprise system.

I think that this kind of heedless disregard of the conditions that have swept this country is going to have a serious repercussion on the country, as it already has.

I shall vote against this bill. I should like to have voted for a reduction in it of a substantial amount, and then to have voted for it. I am not opposed to any kind of space program. I think this is out of all proportion to its usefulness to a country in great distress.

We are all aware of the widening of the war in Vietnam—the widening of the war in Southeast Asia. We know that this will bring much greater expenditures of both life and property there.

I do not think this is going to help the situation at home. In fact, I think it will show that, as some of the more articulate leaders of the dissidents say, this Government is not responsive to the needs of the country. That is how they are going to interpret it—that we are not responsive; that apparently we do not even recognize what is going on in this country.

For those reasons, I am bound to vote against the passage of the bill, although I would like to have voted for a reduced bill.

I think it is a great tragedy that the Senate is not taking notice, as our business people are taking notice, of the conditions of the country. I implore my colleagues to take greater notice. And I hope that in the future, when the appropriation time arrives, we will have enough sensitivity to respond to the needs of our people and to give some assurance not only to the young people but all of our people. It is not the young people who are influencing the market which reflects the sentiment of the country. It is the grown people. It is the best brains we have in the business world. They are just as disillusioned with conditions as are the young people. They have a different way of expressing it.

In recent weeks I have urged students and others not to lose faith in our system of government—that it can be made responsive to the needs of our country.

I hope the Senate will take notice of what is going on in the country and reflect it in some of our votes on future appropriations.

Mr. BYRD of West Virginia. Mr. President, as the Senate proceeds to vote on H.R. 16516, the authorization bill for the National Aeronautics and Space Administration for fiscal year 1971, I am greatly concerned as to the economic and humanitarian value of any additional space commitments which the Senate may now be funding. To date nearly $40 billion of taxpayers' money has been committed to the exploration of outer space. During this same period, the United States has invested no more than a little over $3 billion in the exploration of our oceans.

It is true that space flight is thrilling and dramatic. But, there is some strange misplacement of priorities that leads us to send men to explore a sterile Sea of Tranquillity, while leaving unexplored the treasure-rich seas around us on earth.

I believe that now is the time to reexamine the undue emphasis that the space program has been given other national endeavors. There is no doubt that we have gained great worldwide prestige from our moon missions, and that the economic spin-off has been beneficial for our economy; but, more tangible, economic, and humanitarian benefits can be derived from our oceans.

Now is the time for the Senate to take a hard look into the decades ahead, before further congressional commitments to new space voyages are made.

We have conquered space to reach the moon above us, but we still know little about the oceans around us.

There is no food on the moon to help feed the earth's increasing millions who go hungry every day; yet, our neglected seas teem with protein food. The moon has no source of energy to harness for power; yet, the ocean tides offer us a source of electrical power for new cities and industries. The moon has no water that can be used; yet, scientists predict that the oceans will be our main source of fresh water in the decades ahead.

The moon may be rich in minerals; yet, the oceans have untapped reserves of minerals in quantities almost difficult to comprehend. Only a few men in our history will ever be able to travel to the moon; yet, the floors of our oceans offer a major area for rest and recreation for millions of people. The oceans offer us fish, marine minerals, ocean shipping, weather forecasting, disposal for sewage, a means of defense, and a common border with many countries.

It is perhaps the nature of man to look up instead of down. The fiery descent of a vehicle from outer space is admittedly more spectacular than the less dramatic emergency of a bathysphere from the seas. But what we can learn from the pervasive waters which cover three-fourths of the earth—beneath which so much that is unknown to mankind lies hidden—is far more important to the future of the human race than anything which could conceivably come now from the void of outer space. The riches of the oceans may be the key to the very life, welfare, and happiness for which all men throughout history have been searching.

True, it is far more exciting to race to the moon, than to delve to the bottom of the oceans. Going to the moon gave us great national prestige, and I am pleased that American astronauts were the first to set foot on the moon. But this national commitment has now, in a large sense, been concluded, and we have reached the point of diminishing returns for the continued investment of large sums of monies into space exploration. I strongly feel that unlocking the secrets of the seas and cultivating the food that abounds within are far more beneficial activities for all mankind than spending hundreds of millions of dollars on the development of nuclear rockets to carry us to the stars.

More people should realize that our earth is somewhat like a spaceship—an enclosed environment with a limited supply of consumables. We can all learn from the lessons of Apollo 13, the value of the effective use of all available resources for a safe voyage.

In this time period in our history we have no choice but to turn our efforts to the largest of our natural resources—the oceans—and to learn to exploit and appropriate their riches.

Mr. President, I call for a new national commitment, for this country to turn its immense scientific and industrial capability to the exploration of the oceans. This effort can only be to our benefit. Scientific exploration of our seas will provide, food, jobs, national security, minerals, water, and hope for millions of people throughout our country. There is little more that can be learned from a trip to the moon that will better the life of man. Instead of looking away from this earth, I urge that we now look around us, and spend our money wisely in doing so.

Mr. President, every American rightly can be proud of the engineering, managerial, and technical accomplishments of NASA. But, can we allow the serious imbalance which now exists between

space research and our other scientific research and development programs to continue?

In recent years, I have supported floor amendments which would reduce spending for space programs, and I shall vote against this bill on final passage—not to indicate that I am against spending any money whatever for space programs, but simply because I believe that we should stretch out our program of space exploration for the time being, and that we should shift our greater funding to other more pressing priorities.

Instead of overemphasis on space research, let us increase our funding of oceanography, cancer, and medical research, coal research, and ways to combat pollution. These are but a few areas which can be very beneficial to mankind.

The PRESIDING OFFICER. The question is on the engrossment of the amendment and third reading of the bill.

The amendment was ordered to be engrossed and the bill to be read a third time.

The bill (H.R. 16516) was read the third time.

Mr. CANNON. Mr. President, I ask for the yeas and nays on passage.

The yeas and nays were ordered.

The PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass? On this question the yeas and nays have been ordered, and the clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. MANSFIELD (after having voted in the negative). On this vote I have a pair with the distinguished Senator from Mississippi (Mr. EASTLAND). If he were present and voting, he would vote "yea"; if I were at liberty to vote, I would vote "nay." I withdraw my vote.

Mr. KENNEDY. I announce that the Senator from Connecticut (Mr. DODD), the Senator from Mississippi (Mr. EASTLAND), the Senator from Minnesota (Mr. MCCARTHY), the Senator from Arkansas (Mr. MCCLELLAN), the Senator from Wyoming (Mr. MCGEE), the Senator from New Hampshire (Mr. MCINTYRE), the Senator from Montana (Mr. METCALF), the Senator from Rhode Island (Mr. PASTORE), the Senator from Georgia (Mr. RUSSELL) the Senator from Alabama (Mr. SPARKMAN), the Senator from Texas (Mr. YARBOROUGH), and the Senator from Ohio (Mr. YOUNG) are necessarily absent.

I further announce that, if present and voting, the Senator from Rhode Island (Mr. PASTORE), the Senator from Wyoming (Mr. MCGEE), the Senator from New Hampshire (Mr. MCINTYRE), and the Senator from Ohio (Mr. YOUNG) would vote "yea."

Mr. GRIFFIN. I announce that the Senator from Oklahoma (Mr. BELLMON) is absent on official business.

The Senator from South Dakota (Mr. MUNDT) is absent because of illness.

The Senator from Alaska (Mr. STEVENS) is absent to attend the funeral of a friend.

If present and voting, the Senator from South Dakota (Mr. MUNDT) would vote "yea."

The result was announced—yeas 69, nays 15, as follows:

[No. 142 Leg.]

YEAS—69

Aiken	Fong	Mathias
Allen	Goldwater	Miller
Allott	Goodell	Montoya
Anderson	Gore	Moss
Baker	Gravel	Murphy
Bayh	Griffin	Packwood
Bennett	Gurney	Pearson
Bible	Hansen	Percy
Boggs	Harris	Prouty
Brooke	Hart	Ribicoff
Byrd, Va.	Hartke	Saxbe
Cannon	Hatfield	Schweiker
Case	Holland	Scott
Cook	Hollings	Smith, Maine
Cooper	Hruska	Smith, Ill.
Cotton	Inouye	Spong
Cranston	Jackson	Stennis
Curtis	Javits	Symington
Dole	Jordan, N.C.	Thurmond
Dominick	Jordan, Idaho	Tower
Ellender	Kennedy	Williams, N.J.
Ervin	Long	Williams, Del.
Fannin	Magnuson	Young, N. Dak.

NAYS—15

Burdick	Hughes	Pell
Byrd, W. Va.	McGovern	Proxmire
Church	Mondale	Randolph
Eagleton	Muskie	Talmadge
Fulbright	Nelson	Tydings

PRESENT AND GIVING A LIVE PAIR, AS PREVIOUSLY RECORDED—1

Mansfield, against.

NOT VOTING—15

Bellmon	McGee	Russell
Dodd	McIntyre	Sparkman
Eastland	Metcalf	Stevens
McCarthy	Mundt	Yarborough
McClellan	Pastore	Young, Ohio

So the bill (H.R. 16516) was passed.

Mr. CANNON. Mr. President, I move to reconsider the vote by which the bill was passed.

Mr. MANSFIELD. Mr. President, I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Mr. CANNON. Mr. President, I move that the Senate insist upon its amendments, request a conference with the House on the disagreeing votes thereon, and that the Chair be authorized to appoint the conferees on the part of the Senate.

The motion was agreed to, and the Senate appointed Mr. ANDERSON, Mr. STENNIS, Mr. CANNON, Mrs. SMITH of Maine, and Mr. CURTIS conferees on the part of the Senate.

AUTHORIZATION FOR SECRETARY OF THE SENATE TO MAKE NECESSARY TECHNICAL AND CLERICAL CHANGES IN H.R. 16516

Mr. CANNON. Mr. President, I ask unanimous consent that the Secretary of the Senate be permitted to make any necessary technical and clerical changes in H.R. 16516 as amended and passed by the Senate and that it be printed as passed.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. MANSFIELD. Mr. President, the able and distinguished chairman of the Aeronautical and Space Sciences Committee, the Senator from New Mexico (Mr. ANDERSON) once again has demonstrated his expertise and leadership in the Senate. Joined so capably by the distinguished Senator from Nevada (Mr. CANNON) this measure was presented with the greatest consideration. Both Senator ANDERSON and Senator CANNON yield to no others in their knowledge and understanding regarding this Nation's space efforts. We stand in their deep debt.

The outstanding ranking minority member of this commitee, the distinguished Senator from Maine (Mrs. SMITH), joined also in guiding this measure through to swift adoption by the Senate. Her thoughtful views on the matters involved contributed a great deal to the high caliber of the entire debate. We commend her for her always unstinting cooperative efforts.

The Senate appreciates also the contributions of the Senators from Arizona (Mr. GOLDWATER), Mississippi (Mr. STENNIS), Florida (Mr. HOLLAND and Mr. GURNEY) and the many others who joined the discussion.

Particularly notable were the efforts of the distinguished Senator from Minnesota (Mr. MONDALE). He is to be commended for his splendid cooperation and for expressing so articulately his strong and sincere views. Such commendation goes as well to the distinguished Senators from Wisconsin (Mr. PROXMIRE) and Arkansas (Mr. FULBRIGHT) who joined in similar fashion.

The Senate may be proud of the manner in which this particular measure was disposed of.

VINH LONG—BOOK BY MR. HARVEY MEYERSON

Mr. FULBRIGHT. Mr. President, Vinh Long, a newly published book written by Mr. Harvey Meyerson, an American journalist, is probably the best work of its kind yet written about Vietnam. Certainly it is one of the most readable books I have seen on Vietnam. Taking the example of the American experience in one province of Vietnam—Vinh Long—between 1967 and 1969, Mr. Meyerson presents a graphic and depressing picture of the war. Although it is basically anecdotal in its approach, Mr. Meyerson's book provides profound insights on the reasons for our inability to accomplish a task which has never been clearly defined or understood.

The thoughtful nature of Mr. Meyerson's approach is perhaps best illustrated by the following passage:

> The route to understanding in Vietnam leads from this proposition: The facts of any given situation are not always consistent with its reality.
>
> Why?
>
> Because in Vietnam, facts are like symbols in dreams. They mask certain fears and desires, the most frequent being fear of failure and desire for success.

Mr. Meyerson's book was reviewed for the Washington Post by Mr. Lee Lescaze. In his review, Mr. Lescaze, himself an experienced Vietnam observer, contributes several excellent points of his own regarding the war. One of these proceeds from a quotation in the book taken by Mr. Meyerson from a letter written by a dedicated, young—now dead—American advisor:

> If only I could bring myself to believe that the faction we are supporting cares. To me, if they don't care and we accept that, then it means we don't care ourselves what alternative the people get, just so long as it doesn't subscribe to [communist] ideology.

Mr. Lescaze follows this quotation with a question, which is the one we must constantly ask ourselves, particularly as the dictatorial nature of the Thieu regime becomes more apparent. Lescaze writes:

Do we care? Meyerson's answer is, no. And if we don't care about the way the government treats the people, should we be surprised if the people don't seem to care who governs them?

There is a hypothesis that some people, in Washington at least, frequently discuss. It goes like this:

The United States continues to withdraw from Vietnam, but because of domestic pressure, the troops are pulled out quickly and a stable, non-communist South Vietnam does not result. Instead, the Saigon government crumbles in the wake of our departure and the communists achieve their objectives.

Then, it is argued, many Americans would rise in anger and seek scapegoats for the 'loss' of South Vietnam. They would believe that we were forced to cut-n-run when victory was closer than ever before, and among those they would seek to blame would be the journalists, academics and politicians, who will be accused of having 'undermined' the war effort.

Mr. President, I ask unanimous consent that this article be inserted in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

BRINGING VIETNAM HOME: VINH LONG

The first time I got to Vinh Long province, in the spring of 1967, two of the American civilian advisers, Fred Abramson and Hugh Lobit, offered me a place to sleep and asked me jokingly if I was going to stay as long as Harvey Meyerson. They called him their writer-in-residence. "He's going to put us all in a book," Lobit said, giving the impression that was a little crazy but a fine thing to do, nevertheless.

Well, Meyerson did and it's a fine book that tells a lot about Vietnam, about Vinh Long and about how Fred and Hugh got killed there.

Consider: "To the Americans, the object of the game is victory. Our error begins with the assumption that ARVN (the South Vietnamese army) shares our objectives."

If Meyerson is right, and I think he is, there isn't much more to say about why pacification hasn't worked and why we haven't crushed the Vietcong and broken the will of the North Vietnamese. If one side is happy with the status quo, which provides a fine income and plenty of perqs for the officers in charge, and the other side is not strong enough to root them out of their bases and cities because they get clobbered by American planes, then there is stalemate. There can be lots of activity, as Meyerson points out, and there can be lots of comforting indicators, but they don't necessarily add up to progress.

Many of the "facts" of the war are bubbled through an American military reporting system in which the efficiency report is an effective bar to criticism of command decisions. A lot of the others come from the Vietnamese government, which, it has been learned very slowly, doesn't want to see the war end and the Americans go home.

Anyone who spent much time in Vietnam came across American advisers who had just been lied to again and were muttering: "Don't ever trust any of them." But then, of course, they went back to trusting. What else could they do? Anyway, after 12 months, the American could go home.

Meyerson's short book conveys the frustrations of the American experience in Vietnam. It is an extremely depressing book, but well worth reading. Vinh Long contained no American troops. There the war was Vietnamized from the start, with Americans providing advice, materials and firepower. The book covers the major events in the province from early 1967 to early 1969, and those experiences contain much that will be pertinent in the months to come.

It is not, despite its seriousness, a book that dwells on the origins of the war, the theories of people's warfare or counterinsurgency. It makes its points with examples and anecdotes and with a long section that is one of the best, most compelling depictions of a battle to come out of Vietnam.

Consider Fred Abramson in a letter from Vinh Long: "If only I could bring myself to believe that the faction we are supporting cares. To me, if they don't care and we accept that, then it means we don't care ourselves what alternative the people get, just so long as it doesn't subscribe to [communist] ideology."

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Then, it is argued, many Americans would rise in anger and seek scapegoats for the "loss" of South Vietnam. They would believe that we were forced to cut-n-run when victory was closer than ever before, and among those they would seek to blame would be the journalists, academics and politicians, who will be accused of having "undermined" the war effort.

Meyerson will be counted in that crowd if the hypothesis becomes reality, but should the war end that badly, we can hope for a saner reaction—one in which Meyerson's book would be read for information why the Saigon government couldn't win the war and we couldn't advise them to victory. It can also help answer anyone who suggests that we try any other similar effort.

REPORTED TORTURE OF SAIGON UNIVERSITY STUDENTS BY THE THIEU REGIME

Mr. FULBRIGHT. Mr. President, I have written today to Secretary of State Rogers to express my deep shock and outrage over the reported torture of Saigon University students by the Thieu regime. In a story appearing in the Baltimore Sun, April 24, Mr. John E. Woodruff reports his interview with 10 of the tortured students. According to Mr. Woodruff, the bodies of the young men and women students ". . . bear marks—swollen knees and feet, bruises on their chests, burns on their genitals, pin pricks under their fingernails and tiny black and blue marks next to the tips of their elbows."

The students' description of the torture which they underwent during 6 weeks of imprisonment can only be described as sickening. Given Mr. Woodruff's reputation as an experienced and careful reporter his account of these atrocities cannot be ignored. His story provides graphic and persuasive evidence of the tyrannical nature of the Thieu regime.

I have asked the Secretary of State for a report and comments by the American Embassy in Saigon on Mr. Woodruff's story. In this connection I have also called the Secretary of State's attention to chapter II, article 7, section (4) of the Vietnamese constitution which states in part:

No citizen can be tortured, threatened or forced to confess.

Even in the absence of this farsighted constitutional provision one might expect that basic human decency would prevent the perpetration of bestial atrocities such as those described by Mr. Woodruff. It is increasingly apparent, however, that none of the usual norms of civilized behavior can be expected of the Thieu regime.

FREE WORLD ASSISTANCE TO VIETNAM

Mr. FULBRIGHT. Mr. President, I feel it incumbent upon me to bring to the attention of the Senate and of the public one of the most disgraceful incidents which has come to my attention in more than 25 years of public life.

The story, which up until now has been classified, is best told in straightforward, chronological order.

In 1967, in response to an inquiry from me, the Department of State furnished detailed information concerning free world assistance to Vietnam. The information supplied by the State Department appears in the CONGRESSIONAL RECORD, volume 113, part 22, pages 30677–30681. There is no need here to burden the RECORD with a repetition of the entire State Department submission. We need concern ourselves only with a single statement by the Department:

Honduras has contributed drugs and dry goods for refugees in Vietnam, flown there on a Honduras Air Force plane.

That apparently innocent statement went largely unnoticed until March 1970, when my attention was called to a draft report by the General Accounting Office entitled, "Administration and Effectiveness of United States Economic and Military Assistance to Honduras." In discussing the Honduran response to a U.S. request to Latin American countries for assistance to Vietnam, the GAO draft report says:

Due to the limited range of Honduran Air Force cargo aircraft it was determined by United States authorities to use a USAF plane to transport the supplies from Tegucigalpa, Honduras, to Saigon, South Vietnam. The plane was flown from the Panama Canal Zone to Tegucigalpa, repainted with Honduran Air Force colors and with a United States navigator aboard made the trip to Saigon.

I at once inquired of the Comptroller General whether his investigation had determined the source of financing for the planeload of supplies which were presumably given to South Vietnam by Honduras and whether or not U.S. funds were involved. I also wrote to the Secretary of State calling his attention to the discrepancy between what the State Department had told Congress in 1967 and what the General Accounting Office had reported in 1970. I ask unani-

mous consent that the entire letter be printed in the RECORD at the conclusion of my remarks, but I want to read three paragraphs at this point.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 1.)

Mr. FULBRIGHT. The letter says in part:

> If the GAO report is correct, then the Congress was clearly misled by the Department of State in 1967. Indeed, the whole operation smacks of a particularly offensive kind of fraud.
>
> The statement in the Comptroller General's report is classified *confidential*. I strongly feel, however, that the incident should be publicized, and I would appreciate your comments on that point.
>
> I would also appreciate your checking with respect to other Free World countries on the Department's 1967 list to determine if there were any other instances of deception.

On April 9, I received a reply from the Comptroller General which I ask unanimous consent to have inserted in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 2.)

Mr. FULBRIGHT. This letter is so astonishing that it is worth summarizing.

The relief supplies consisted of approximately 3,100 pounds of dry goods—mostly clothing—and pharmaceuticals, which were collected by the Honduran National Red Cross in a campaign in October 1966. State and Defense Department records, which—not surprisingly—are incomplete, indicate that no U.S. funds were involved.

The U.S. Air Force paid all the operating expenses of a C–54 aircraft which it provided on loan to the Government of Honduras to transport the supplies to Vietnam. The Comptroller General's letter confirms that the plane was repainted with Honduran Air Force colors.

The plane carried 26—I repeat, 26—crew members and passengers from Honduras to Vietnam and return. These included 10 Honduran military observers, three members of the Honduran press, one representative of the Honduran Red Cross, nine Honduran Air Force crew members, and three officers of the U.S. Armed Services—presumably the navigators.

The itinerary of this airborne wayward bus is even more fascinating than the passenger list. It took 13 days—from January 31 to February 12, 1967—to go from Tegucigalpa to Saigon, via Kelly Air Force Base, Tex.; Kirkland Air Force Base, N. Mex.; Travis Air Force Base, Calif.; Hickam Air Force Base, Hawaii—where there was a 1-day stop and briefing on the Pacific situation—Wake Island; Agana Naval Air Station, Guam; and Clark Air Force Base, Philippines.

After a stop of 5 days in Vietnam, the philanthropic party returned in even more leisurely fashion, taking 16 days from February 17 to March 5. For reasons which do not appear on the record, but which I think we can all guess, it was found desirable to return via a different route—one which naturally included Hong Kong. Stops on the way home were also made in Taiwan, Japan, and Midway, as well as Hawaii, California, New Mexico, and Texas.

The record does not disclose the cost of this pilgrimage, but I think we can take judicial notice that it undoubtedly exceeded the cost of supplies delivered to the Vietnamese.

When I received the Comptroller General's letter, I wrote to the Secretary of State again, and I ask unanimous consent that this letter of April 17 also be printed in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 3.)

Mr. FULBRIGHT. I read two paragraphs from this second letter to the Secretary:

> The Comptroller General's letter, as well as his draft report, is classified, but I see nothing in it which affects the national security. The whole episode is so outrageous that I am forced to conclude the classification is simply to avoid embarrassment. This is not an acceptable reason.
>
> The purpose of this letter is to inform you that I intend to make public the Comptroller General's letter and the relevant portions of his draft report within ten days unless the Department of State provides a good reason for not doing so.

In the meantime, I had another letter from the Department which by coincidence was dated the same day as my letter to the Department—April 17.

I ask unanimous consent that the Department's letter of April 17 also be printed in the RECORD at the conclusion of my remarks. It adds nothing to the story, but attempts to explain the original deception on the grounds that the USAF plane involved "was, in effect, a Honduran aircraft for the duration of the loan." This is a pretty thin cover.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 4.)

Mr. FULBRIGHT. The Department also pleaded that publicizing the incident "could only be misinterpreted by and harm our relations with the Honduran Government." This is a pretty weak plea. The Honduran Government has been aware of what happened from the beginning. There is no cause for the Honduran Government, or anybody else, to misinterpret the incident.

Upon receipt of my letter of April 17, stating my intention to make the incident public unless I was shown cause to the contrary, the Department wrote to me again—with unaccustomed alacrity—on April 23. I ask unanimous consent that this letter also be inserted at the end of my remarks. It made a plea for further delay so that the Department could consult with the Government of Honduras. I agreed, somewhat reluctantly.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 5.)

Mr. FULBRIGHT. Now, Mr. President, I have received a final letter from the Department, dated April 29, and stating that the Department has no objection to declassification of the documents pertinent to this incident. To make the record complete, I ask that this letter also be inserted at the end of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 6.)

Mr. FULBRIGHT. Thus, we come to the close of a shoddy story. It is a story of calculated, deliberate deception of the Congress—and through the Congress, of the American people—by the previous administration in an unworthy effort to create an impression of wide free world support for its bankrupt policies in Vietnam.

I commend the General Accounting Office for its diligence in bringing the facts to our attention. I commend the State Department for abandoning its absurd attempt to preserve the secrecy which surrounded the matter, but I would be more impressed if it had done so sooner and less reluctantly.

EXHIBIT 1

MARCH 26, 1970.

Hon. WILLIAM P. ROGERS,
Secretary of State,
Washington, D.C.

DEAR MR. SECRETARY: In 1967 in response to an inquiry from me, the Department of State furnished me with detailed information concerning Free World assistance to Vietnam. This was in a letter, with enclosures, addressed to me from Mr. Macomber who was then Assistant Secretary for Congressional Relations. The information appears in the CONGRESSIONAL RECORD, vol. 113, pt. 22, pp. 30677–30681.

In the list of countries which have contributed assistance to Vietnam, the statement is made: "Honduras has contributed drugs and dry goods for refugees in Vietnam, flown there on a Honduras Air Force plane."

A recent draft report by the General Accounting Office "Administration and Effectiveness of United States Economic and Military Assistance to Honduras", makes the following statement: "Due to the limited range of Honduran Air Force cargo aircraft it was determined by United States authorities to use a USAF plane to transport the supplies from Tegucigalpa, Honduras, to Saigon, South Vietnam. The plane was flown from the Panama Canal Zone to Tegucigalpa, repainted with Honduran Air Force colors and with a United States navigator aboard made the trip to Saigon." If the GAO report is correct, then the Congress was clearly misled by the Department of State in 1967. Indeed, the whole operation smacks of a particularly offensive kind of fraud.

The statement in the Comptroller General's report is classified *confidential*. I strongly feel, however, that the incident should be publicized, and I would appreciate your comments on that point.

I would also appreciate your checking with respect to other Free World countries on the Department's 1967 list to determine if there were any other incidences of deception.

Sincerely yours,

J. W. FULBRIGHT,
Chairman.

EXHIBIT 2

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., April 9, 1970.

Hon. J. WILLIAM FULBRIGHT,
Chairman, Committee on Foreign Relations,
U.S. Senate.

DEAR MR. CHAIRMAN: In response to your inquiry of March 26, 1970, concerning the possible use of United States funds in connection with the donation of medical supplies by the Government of Honduras to the Government of the Republic of Vietnam, we examined into Department of State and Department of Defense records. These records,

however, were not complete since some were retired files and one set of these had been screened previously in order, apparently, to eliminate extraneous material anc. to reduce the file size for storage purposes. (Secret)

The available records show that:

1. The relief supplies, consisting of approximately 3,100 pounds of dry goods—mostly clothing—and pharmaceuticals, were collected by the Honduran National Red Cross in a campaign in October 1966. The records indicate that no United States funds were involved. (Unclassified)

2. The United States Air Force paid all operating expenses of the C–54 aircraft—on loan to the Government of Honduras from the United States Air Force and painted Honduran Air Force colors—used to transport the dry goods and pharmaceuticals from Honduras to Vietnam. We were unable to readily determine the total expenses involved. (Confidential)

3. United States Government accommodations, at various United States installations visited on the trip to and from South Vietnam, were utilized by members of the Honduran delegation and by United States military officials accompanying these relief supplies. Some members of the delegation also used United States accommodations during their stay in Vietnam. Available documentation indicates that the delegation included: (Confidential)

10 Honduran military observers.

3 Members of the Honduran press.

1 Representative of the Honduran Red Cross.

9 Honduran Air Force crew members.

3 Officers of the United States Armed Services. (Confidential)

The itinerary of the delegation according to available records was:

FLIGHT TO SOUTH VIETNAM

Tegucigalpa, Honduras (departed January 31, 1967).

Kelly AFB, Texas.

Kirkland AFB, New Mexico.

Travis AFB, California.

Hickam AFB, Hawaii (one day stop and briefing on Pacific situation).

Wake Island.

Agana NAS, Guam.

Clark AFB, Philippines.

Tan Son Nhut AB, Vietnam (arrived on or about February 12, 1967) (confidential.)

RETURN FLIGHT

Tan Son Nhut AB, Vietnam (departed on or about February 17, 1967).

Hong Kong.

Taipei, Taiwan.

Tachikawa AB.

Midway Island.

Hickam AFB, Hawaii.

Travis AFB, California.

Kirkland AFB, New Mexico.

Kelly AFB, Texas.

Tegucigalpa, Honduras (arrived March 5, 1967) (unclassified).

4. United States facilities were used to transfer funds of the Government of Honduras to its delegation in South Vietnam. (Unclassified).

I hope the above adequately answers your questions regarding this matter. If you desire any additional information please let me know.

Sincerely yours,

ELMER B. STAATS,
Comptroller General of the United States.

EXHIBIT 3

APRIL 17, 1970.

Hon. WILLIAM P. ROGERS,
Secretary of State,
Washington, D.C.

DEAR MR. SECRETARY: I refer to my letter of March 26 concerning the fraudulent and deceitful information furnished Congress by the Department of State in 1967 respecting Honduran assistance to Vietnam.

I enclose a copy of a further letter on this subject which I have received from the Comptroller General.

The Comptroller General's letter, as well as his draft report, is classified, but I see nothing in it which affects the national security. The whole episode is so outrageous that I am forced to conclude the classification is simply to avoid embarrassment. This is not an acceptable reason.

The purpose of this letter is to inform you that I intend to make public the Comptroller General's letter and the relevant portions of his draft report within ten days unless the Department of State provides a good reason for not doing so.

Sincerely yours,

J. W. FULBRIGHT,
Chairman.

EXHIBIT 4

APRIL 17, 1970.

Hon. J. W. FULBRIGHT,
Chairman, Committee on Foreign Relations
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: The Secretary has asked that I reply to your letter of March 26 regarding the transportation in 1967 of Honduran refugee supplies to Viet-Nam.

The Government of Honduras planned to send refugee supplies, a representative of the Honduran national Red Cross which had collected the supplies, three Honduran journalists, and a military observer team to Viet-Nam in January 1967 in an Honduran Air Force C–54. As plans for the trip developed, it became apparent that the aircraft was not equipped for a trans-Pacific flight, it being of such an early model that conversion equipment was not available in stock but would have to be hand-crafted. The cost of such equipment would have been prohibitive.

Under the circumstances, the Chief of Staff, U.S. Air Force authorized the loan of a USAF C–54 properly equipped for such a flight to the Honduran Air Force. This aircraft bore Honduran markings and was, in effect, an Honduran aircraft for the duration of the loan. The aircraft commander was the deputy commander of the Honduran Air Force and the crew was also Honduran. Three USAF personnel were aboard to assist the crew, particularly with navigating on an unfamiliar trans-Pacific route, and for liaison purposes to effect landings in the war zone.

I hope you will find the above information responsive to your inquiry. The relief supplies and medicines were contributed by the Honduran people through a collection taken up by the Honduran Red Cross as a gesture of sympathy for the Vietnamese people and the manner of delivery was evidently intended to dramatize this feeling.

With regard to your request that the loan and repainting of the aircraft be publicized, I feel this could only be misinterpreted by and harm our relations with the Honduran Government. That Government had in good faith decided to send its own aircraft on this mission and required the loan of a U.S. aircraft only when, at an advanced stage in planning, it was ascertained that the original Honduran aircraft could not readily be adapted for a trans-Pacific flight. The Department thus prefers that the GAO report retain its present classification.

We will continue to check the 1967 list your letter referred to and inform you if we discover any other instances such as that of Honduras.

Sincerely,

H. G. TORBERT, Jr.,
Acting Assistant Secretary for Congressional Relations.

EXHIBIT 5

DEPARTMENT OF STATE,
Washington, D.C., April 23, 1970.

Hon. J. W. FULBRIGHT,
Chairman, Committee on Foreign Relations,
U.S. Senate.

DEAR MR. CHAIRMAN: The Secretary has asked me to reply to your letter of April 17, 1970 on Honduran assistance to Viet-Nam.

By now you have no doubt received Mr. Torbert's communication of the same date responding to your earlier inquiry. As Mr. Torbert indicated, the Department's concern was the possible damage to United States-Honduras relations which could result from release of this information. In light of your latest letter, the Department has instructed our Ambassador in Tegucigalpa to consult with the Government of Honduras on making public the Comptroller General's letter and relevant portions of his draft report.

I would greatly appreciate your withholding release of this information until we have had an opportunity to receive a reply which we shall then make available to you.

Sincerely,

DAVID M. ABSHIRE,
Assistant Secretary for Congressional Relations.

EXHIBIT 6

DEPARTMENT OF STATE,
Washington, D.C., April 29, 1970.

Hon. J. W. FULBRIGHT,
Chairman, Committee on Foreign Relations,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Further to my letter of April 23 on the declassification of the Comptroller General's letter and relevant portions of his draft report on Honduran assistance to Viet-Nam, our Ambassador in Tegucigalpa has discussed this matter with the Government of Honduras. While indicating they would prefer that the information not be released, the Hondurans did not object to this course of action.

In view of the Honduran Government's response, the Department has no objection to the declassification of the above mentioned documents.

Sincerely yours,

DAVID M. ABSHIRE,
Assistant Secretary for Congressional Relations.

TRIBUTE TO CARL MARCY

Mr. FULBRIGHT. Mr. President, I want to say a few words about an incident which occurred yesterday with regard to a report on repeal of the Gulf of Tonkin resolution. The record was not really quite complete. I had another matter at the time that I had to attend to and did not say all that I wanted to about the subject.

I wish to say that the staff of the Foreign Relations Committee, of which Mr. Carl Marcy is the chief of staff is a nonpartisan staff. Mr. Marcy is not, in any way, a political appointee. He has been a staff member of that committee for 20 years. He is strictly a professional in the finest sense of that word. We need far more men like him in public service. But, they are few and far between and the Committee on Foreign Relations is very fortunate to have been able to hold on to him. Unfortunately, some persons seem to interpret what was said yesterday as a reflection on his integrity as an objective and nonpartisan, professional employee of that committee. I myself did not view the matter that way at all.

I have the greatest confidence in him.

And I believe that every member of the committee feels the same way. He serves all members of the committee, and the Senate regardless of party, with the utmost impartiality. He is the finest example of the way the professional committee staff system should work.

I do not think for a moment that what happened was intended in the way that the Senator from Delaware interpreted it. I may say, by way of explanation, that Mr. Marcy was put under great pressure to bring out that report quickly because of the schedule on the Senate floor.

The majority leader, as we know, has not had bills reported from the committees to bring before the Senate. We have been recessing from time to time because there was nothing on the calendar to take up.

The measure that the report was on was originally part of an earlier Mathias resolution. The committee excerpted from that broad resolution the parts repealing the Mideast and the Tonkin Gulf resolutions.

There was no controversy about the matter on either side and there was a unanimous vote for it in the committee. The President and the administration had stated they had no objection to repeal. There was no incentive for anyone, regardless of party or otherwise, to have tried in any way to distort that report.

What happened was that on the day before he was asked to report it as quickly as possible, the Cambodian crisis had broken. There was considerable discussion in the committee concerning the constitutional questions involved, particularly those relating to the relative powers of the Congress and the executive with regard to this matter.

I am quite certain that the language objected to was used without the slightest intent on the part of Mr. Marcy or anyone else on the staff to try to insert in the report anything prejudicial to the present administration.

I am certain that anything of this nature was not in his mind. It was simply that as a true professional he undoubtedly regarded the matter of the constitutional relationship between the executive and the legislative solely in an objective and scholarly manner.

He had no desire or incentive to do otherwise. For many years he has had the responsibility for the final clearance of committee reports. And never once in all of these years has a question ever been raised that he has, in any way whatever, tried to use his position as the chief of staff to distort the intent of the committee.

Mr. President, I yield to the Senator from New York.

Mr. JAVITS. Mr. President, I find myself the only Republican member of the Foreign Relations Committee on the floor at the moment.

I think it is fair to make the statement in response to the statement of the Senator from Arkansas, the chairman of the Foreign Relations Committee, that I have great confidence in Carl Marcy. I believe that my colleagues on the committee do also.

I am sure that there is nothing calculated or deceitful or intentionally designed to be bitterly critical of the administration.

It is unfortunate that in this particular case the pressure of work and other problems brought about a result which, when the press caught it—and they have a perfect right to make what comment they choose—it looked like the kind of major critical appraisal which certain committee members and myself should feel we ought to have a look in advance.

I think that the Senator from Delaware (Mr. WILLIAMS) picked it up for that reason. He is very alert and on the ball in that respect.

It is one of the strange cases where they were both right in the sense that I do not think there is a dishonest bone in the body of Carl Marcy and, on the other hand, the Senator from Delaware was also right to say that there may be an implication in this act.

I hope that this will result in the repair of whatever damage was done by the committee issuing whatever report finally eventuates for the mature consideration and that there will be no derogation of Carl Marcy.

I think that would be very much undeserved.

Mr. FULBRIGHT. Mr. President, I appreciate the confidence of the Senator from New York.

I gave no notice that I would speak about the matter. However, after I had thought about it overnight and after considering what another staff member told me, I realized that members of the staff take these things perhaps more seriously than I. I did not attribute the same significance to the matter. Perhaps I should have said yesterday what I have said today.

I was so sure in my own mind that he had no intention of distorting the matter that I did not think it would be considered to be so important. That is the only reason why I did not say yesterday what I am saying today.

Mr. President, I believe I speak for the entire committee when I say that they have the greatest confidence in Mr. Marcy and that they do not believe that this development was intentional. He was requested to finalize, within a very brief time, the report on the resolution which had been approved earlier by unanimous vote. The necessity for the second vote was the change in the form of the original Mathias resolution. The original Mathias resolution was not a concurrent resolution, although the Gulf of Tonkin resolution and the Middle East resolution by their terms were to be repealed by concurrent resolution.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. JAVITS. Mr. President, I ask unanimous consent that we may proceed for 1 additional minute.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. FULBRIGHT. Mr. President, therefore, the Senator from Maryland (Mr. MATHIAS) was required to introduce a new concurrent resolution. The delay from the vote to the filing of the report was caused by that. Then, because there was nothing before the Senate, I told Mr. Marcy that the majority leader would like to bring the resolution out and asked him if he could get the report ready right away. He tried to do it. And because of the haste there was one paragraph plus a few lines that were objected to. That material did relate very directly to the subject matter, but it involved events that had occurred since we voted on the resolution.

The Senator from Delaware was quite correct in his statement. When I heard his statement yesterday, I told him I would be willing to ask unanimous consent myself. I told him I would do it, because I thought he was quite correct, but he said he would do it.

Mr. JAVITS. Mr. President, will the Senator yield?

Mr. FULBRIGHT. I yield.

Mr. JAVITS. Mr. President, I brought about the necessity for a new resolution because the committee recognized that the Senator from Rhode Island (Mr. PELL) and I introduced the resolution even before the Senator from Maryland (Mr. MATHIAS). We understood the situation well.

Mr. FULBRIGHT. Mr. President, as usual, the Senator from New York is correct. I forgot that circumstance. But I do not believe Mr. Marcy should be criticized.

TRANSPORTATION REGULATION

Mr. BAKER. Mr. President, on April 27 I introduced a bill to establish a Commission on Transportation Regulatory Agencies to study and make recommendations with respect to the regulation of transportation by the Interstate Commerce Commission, the Civil Aeronautics Board, and the Federal Maritime Commission.

At that time I spoke of the fragmentation of transportation regulation that exists today and the need for coordinating transportation policy into an integrated whole: I said that this objective could be fulfilled only by the establishment of a new transportation regulatory agency performing the functions that the existing three transportation agencies are presently designed to perform.

In an article entitled "The Changing Federal Role in Regulating Intermodal Transport," which appears in the February, March and April issues of Container News magazine, Lawrence M. Lesser sets forth arguments in favor of a single regulatory agency and calls for a study of the need for a revamping of our transport regulatory machinery.

I ask unanimous consent that the article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

THE CHANGING FEDERAL ROLE IN REGULATING INTERMODAL TRANSPORT

(By Lawrence M. Lesser)

The new Federal role of promoting intermodal and integrated competition brought in its wake a complex of problems, among

them the question of regulatory jurisdiction over carriers participating in international through movements under joint rates.

On July 23, 1969, the Interstate Commerce Commission announced that henceforth, it would accept "the filing of tariffs naming joint rates for the transportation of property between points in the United States and points in a foreign country over through routes which embrace an ocean common carrier by water and common carriers subject to the Interstate Commerce Act." The order covers coordination between United States domestic surface carriers and ocean carriers, but makes no mention of pickup and delivery carriers in other countries. By contrast, the Federal Maritime Commission's decision in the Container Marine Lines case permits the filing of single factor through rates between United States ports and inland points in foreign countries, but does not include inland transportation in the United States.

(In this case, the Federal Maritime Commission approved Container Marine Lines traffics on tractor parts moving eastbound, and on wines and spirits moving westbound, thereby providing for through transportation service consisting of port-to-port transportation between the United States and the United Kingdom and inland transportation in the United Kingdom.)

Both the Container Marine Lines case and the ICC order raise threshold questions as to how the regulatory agencies are going to treat tariffs containing joint rates for international movements:

Will all segments of a through movement incorporated in a through rate have to be broken out in the tariffs?

Will the tariffs have to be filed with more than one regulatory agency?

Can more than one regulatory agency exert jurisdiction over the traffic in question?

To what degree will the ICC attempt to regulate the ocean carriers participating in a through service?

To what degree will the FMC attempt to regulate United States domestic carriers participating in a through service?

In an attempt to answer these questions and others, the ICC stayed its order on July 29, 1969, and both the ICC and the FMC started investigations.

On October 16, 1969, the Department of Transportation entered the muddled picture by sending to Congress a revised version of the Trade Simplification Bill, which deals with the problem of joint rates for international movements. The Bill was originally submitted to Congress by former Secretary of Transportation Alan Boyd in March, 1968. According to its sponsors, the Bill would permit carriers engaged in the domestic, international, and foreign segments of international transportation to establish joint rates, issue single bills of lading for through movements, and interchange or pool equipment. At best, the Bill represents only a stopgap measure that does not fully answer the questions posed above.

The rule-making proceedings instituted by the ICC and the FMC actually go way beyond the scope of the Container Marine Lines case, the ICC order, and the Trade Simplification Bill. They raise the fundamental question of how this nation is going to regulate most effectively its transportation system in the light of new patterns of competition emerging today in the regulated transportation industry.

Two alternatives are now offered for Congressional consideration.

One solution might be the creation of joint boards which would sit as a tribunal in cases involving through rates for international movements. Each board would be composed of three members of each regulatory body plus a chairman. The chairmanship could be rotated annually among the chairmen of the respective agencies.

For example, the chairman of the ICC might act as chairman each time a joint ICC-FMC board convened the first year. The next year the FMC chairman might serve as head of the tribunal. Likewise, in a joint Civil Aeronautics Board-Interstate Commerce Commission proceeding, the CAB chairman might act as chairman during the first year, with the ICC chairman assuming the duty the second year. This setup would enable jurisdictional entanglements to be brought out into the open, debated, and resolved in a public forum with all parties having the opportunity to air their views to members of each agency involved. And, most importantly, it would provide carriers with new opportunities to offer integrated transportation service.

Another solution might be the creation of a single transport regulatory commission for all modes. This solution, offered many times, was first proposed in 1934. The advantages of a single commission are that it could more capably deal with both national and international transport problems, that it would carry out a National Transportation Policy encompassing all modes and that such a super regulatory body would be more likely to maintain its independence from interests it must regulate.

After all, why do we need three agencies to regulate transportation when we only need one agency to regulate electricity and gas (Federal Power Commission), one agency to regulate communications (Federal Communications Commission), and one agency to regulate trade and antitrust matters (Federal Trade Commission)? To be sure, the reasons for the existence of three transportation regulatory agencies are historical—each agency parallels the development of the several modes of transportation—and political. Today, however, there is no sound reason for denying to the traveling public, to shippers, to carriers and to the economy as a whole the benefits that a single transport commission would produce.

The Department of Transportation should initiate a study of the need for a revamping of our transport regulatory machinery to cope with the rapidly changing patterns of competition in the regulated transportation industry. Such a study should also include the formulation of a new National Transportation Policy with a view to administering it through a single transport regulatory commission.

Integrated transportation is on the move. Domestic and foreign carriers are developing capabilities to provide integrated service while governments throughout the world are taking steps to eliminate regulatory restraints to the free flow of foreign trade.

The container revolution has arrived. But the integrated transportation revolution in the United States is just beginning. However, if industry and government continue to work together toward common goals, it will not be very long before the various modes of transportation come closer to achieving their proper place in the interest of the best utilization of the economic resources of this country.

PART II

Basic to the cost of every product that the consumer purchases is the cost of transportation. To a large degree, promotion and regulation determine what this cost will be. How many consumers really appreciate the role the Government plays in regulating the cost of transportation, which in turn affects the cost of consumer goods? By improving the transport system, promotion and regulation can be made to reduce transport costs and provide savings that will affect everyone's pocket.

In terms of technology and service, the transport system of the United States is among the most advanced in the world. Our airlines, motor carriers, and railroads probably carry more passengers and more freight over more miles than any other transport system in the world. A substantial portion of this development can be credited to the activities of the Federal Government in providing transportation facilities and services.

During the early 1900's, Federal land grants to the railroads permitted the population and industry to expand into the midlands of the United States, into territory which was previously accessible only by canal boat or horse-drawn wagon. Several decades later, Federally-sponsored highway development increased the mobility of people, promoted interstate commerce, and expanded the postal service. In recent years, Federal promotion of air transportation has produced spectacular accomplishments domestically, by enabling us to travel in safety from city to city more rapidly and more often than we formerly were able to, as well as in the international field through the fostering of friendship and cooperation with our neighbors throughout the world.

The Federal Government fulfills two statutory requirements with respect to transportation: it promotes and it regulates. It promotes the development of domestic and international transportation by extending public aid. It regulates all modes by controlling the supply of available service, the rates to be charged, and combinations among carriers.

The two fundamental types of promotional activity through which the Federal Government fosters the development of transportation are direct and indirect subsidies. The former takes the form of direct grants or payments. Indirect subsidies, however, are widespread in the transportation field, and may take many different forms. They may involve construction of way facilities; or they may involve the granting of operating rights along choice routes. A subsidy can take the form simply of not charging the transportation user or beneficiary enough to cover the cost of facilities or services; or it may involve tax credits of various kinds.

Federal involvement to meet and cope with today's transportation problems stems from three sources: (1) the regulatory agencies that regulate transportation; (2) the promotional agencies that provide leadership in the identification and solution of transportation problems; and (3) the Congress, which sets the direction and scope that promotion and regulation will take.

Today, motor carriers, railroads, domestic water carriers, and pipelines are regulated by the Interstate Commerce Commission (ICC) under the Interstate Commerce Act of 1887, as amended; the first two modes are promoted by the Federal Highway Administration and the Federal Railroad Administration of the Department of Transportation. Air transportation is promoted and regulated by the Civil Aeronautics Board (CAB) under the Civil Aeronautics Act of 1938 and the Federal Aviation Act of 1958, and promoted by the Federal Aviation Administration of the Department of Transportation under the Federal Aviation Act of 1958. The merchant marine is regulated by the Federal Maritime Commission (FMC) under the Shipping Act of 1916 and the Intercoastal Shipping Act of 1933, and promoted by the Maritime Administration, an agency of the Department of Commerce, under the Merchant Marine Act of 1936.

Many standing committees of the Congress provide the theatre for the formulation of overall transport policy. In the House of Representatives, most transportation matters come under the scope of one or more of the following committees: (1) the Committee on Interstate and Foreign Commerce; (2) the Committee on Public Works; (3) the Committee on Ways and Means; (4) the Committee on Appropriations; and (5) the

Committee on Merchant Marine and Fisheries.

On the Senate side, the Committee on Commerce, the Committee on Public Works, the Committee on Banking and Currency, the Committee on Finance, and the Committee on Appropriations deal with transportation matters on a regular basis. In fact, nearly every standing committee of both Houses, as well as certain select committees, have dealt with some aspect of transportation at one time or another.

During the past several years we have seen an expansion and new direction in the Federal role from simply promoting competition between the several modes to the promotion of competition among coordinated and integrated transport systems. This new emphasis can be attributed to the revolution in cargo handling, i.e. containerization, coupled with the construction of a modern, safe, high speed system of interstate and defense highways.

Each of the transport regulatory commissions have taken positive actions in order to promote intermodal and integrated competitive systems—the ICC in regard to rail-truck systems, the CAB in regard to air-truck coordination, and the FMC in regard to ocean-surface systems coordination.

Coordination, as it is used here, refers to the movement of passengers or freight from origin to destination by more than one mode of transportation, either with or without through routes and joint rates. Integration, however, is a more precise term and applies in this context to the common use of equipment and service by carriers of different modes in providing intermodal service.

COORDINATED MOVES

Coordination of transport service is not a new concept; it dates back to 1843, when sectionalized canal boats were carried on flat cars in a water service between Philadelphia and Pittsburgh, Pennsylvania. The New York Central Railroad pioneered container service in 1921 with a movement between Cleveland and Chicago. And in 1926, the Chicago North Shore & Milwaukee Railroad experimented with moving highway semitrailers on flatcars in order to improve its less-than-carload service.

Trailer-On-Flat-Car (TOFC) service, commonly known as piggyback, grew in popularity and in volume of tonnage until an ICC decision in 1931 disapproved of the railroads' method of charging for container service by holding the rates to "be unjustly discriminatory or unduly prejudicial," and therefore, unlawful. As a result of this decision, shipper interest in piggyback service declined. The 1961 Senate study on National Transportation Policy pointed out:

"This resulted in the end of the container service for that era . . . It is interesting to note that economy was denied in favor of compliance with rate tradition. Cost-related ratemaking, had it been our policy, would have fostered this progressive step in 1931."

The report continued by saying: ". . . the 1931 decision because of a ritualistic interpretation of the Interstate Commerce Act denied the benefits of innovation to carrier and shipper to our national detriment."

For over two decades following this decision, piggyback operations lay dormant. Then, in a 1954 decision arising out of a petition presented by the New York, New Haven & Hartford Railroad Company asking for a declaratory order concerning legal regulations, limitations, and obligations incident to the transportation of highway trailers on railroad flatcars, the ICC promulgated the first comprehensive guidelines for piggyback operations. These guidelines "provided the basic legal framework upon which the development of TOFC traffic has been based."

Following the Commission's decision in *Substituted Service-Piggyback, 322 ICC 301, (1964)*, and upheld by the Supreme Court in *American Trucking Ass'ns, Inc. v. Atchison, T. & S.F. Ry. Co. 387 U.S. 397 (1967)*, "open tariff" piggyback service became available to motor carriers. The basic principle at issue in this case, which arose out of a general investigation by the ICC into TOFC service, involved the lawfulness of two of the rules prescribed by the Commission.

The Supreme Court decision upheld the authority of the ICC to promulgate rules providing: "(1) that railroads which offer TOFC service to the public under open-tariff publications must make such service available on the same terms to motor and water common and contract carriers; and (2) that motor and water carriers may, subject to certain conditions, utilize TOFC facilities in the performance of their authorized service."

The tremendous impact of these two landmark decisions can be seen in the phenomenal rate of growth of piggyback and container traffic in the last decade. According to the Association of American Railroads, carloadings increased from 250,000 in 1957 to 1,207,000 cars in 1967, an increase of 383 percent. The latter case set a precedent for the further development of integrated transportation service in domestic commerce.

This decision was closely followed by a CAB opinion that paved the way for the development of a new type of competitive transportation system, one involving integration of motor carriers acting as freight forwarders with domestic and international air carriers.

(An air-truck integrated system provides an alternative to surface transportation domestically and to ocean transportation internationally.)

In this proceeding, the Board authorized two motor carrier applicants to engage in air transportation as domestic and international air freight forwarders, and a third motor carrier applicant to engage in domestic air freight forwarding for an experimental period of five years.

The decision in this case represented a departure from past Board policy, which heretofore prohibited entry of surface carriers into the air freight forwarding field "where it appeared that such conflicts of interest would arise between air and surface operations as to result in material diversion of traffic from air to surface transportation and deprive the applicants of sufficient incentive to conscientiously promote and develop air freight forwarding."

This new CAB philosophy can best be summarized from the examiners findings in the case:

". . . air cargo's growth is substantially dependent upon the extent to which it is promoted. The record shows that increased promotional efforts, such as the applicants can and will provide, can produce new air cargo traffic. The participation in air freight forwarding of motor carriers like the applicants may well be necessary to achieve the full promise of air cargo. For all these reasons, we are convinced that a new policy towards motor carriers like the applicants deserves a trial."

In April of 1969, Consolidated Freightways, a transcontinental motor carrier, and the major beneficiary of the CAB order, signed a contract to purchase 51 percent of the common stock of Pacific Far East Line, Inc., a U.S. flag steamship operator heavily committed to containerization in the Pacific/Far East trade area. Coupled with its newly authorized freight forwarding authority, Consolidated was given the opportunity to become a truly integrated transportation company providing shippers with a complete through service under single company management and responsibility.

The next significant decision to affect integrated transportation was an opinion handed down by the FMC that extended the concept of integrated transportation to international commerce. In this case, the FMC approved Container Marine Lines tariffs on tractor parts moving eastbound, and on wines and spirits moving westbound, thereby providing for through transportation service consisting of port-to-port transportation between the United States and the United Kingdom and inland transportation in the United Kingdom.

The single-factor intermodal container rates, however, did not include any inland transportation in the United States. Inland transportation in the United States was subject to two alternative rates, one called "door-to-pier," which would apply "when cargo is received by the carrier at the United States port terminal and the carrier loads the cargo into or unloads the cargo from its containers;" and the other called "door-to-door," which would apply "when cargo is tendered to the carrier at its United States port terminal in carrier's containers or made available to consignee at the carrier's port terminal for unloading by consignee at inland point of destination." Through use of the "door-to-door" option, shippers and consignees would be entitled to receive a five percent discount on the ocean portion of the through rates.

The underlying philosophy of the Commission in this case, as well as in others, was to "facilitate, wherever possible, the implementation of improved shipping systems, and to enable shippers to avail themselves of competing modern container services. In their progressive opinion, the Commission stated:

"Enlighted regulation is the key to effective regulation; no regulatory agency can permit regulation to be outstripped by new techniques in the industry. Progressive regulation is required in the interest of encouraging the modernization of shipping services. Outmoded principles and rules will surely stifle advancements in all fields, and especially transportation where developments have followed so quickly upon each other.

". . . It is undisputable, therefore, that the FMC must assume a flexible posture and must view broadly, when necessary, its regulatory purposes and governing laws and rules."

ORDER FOR RECOGNITION OF SENATOR JAVITS TOMORROW

Mr. McGOVERN. Mr. President, I ask unanimous consent that tomorrow, following the remarks of the Senator from Colorado (Mr. ALLOTT) the senior Senator from New York (Mr. JAVITS) be recognized for 20 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDER FOR PERIOD OF TRANSACTION OF ROUTINE BUSINESS TOMORROW

Mr. McGOVERN. Mr. President, I ask unanimous consent that tomorrow there be a period for the transaction of routine morning business with a time limitation of 3 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

MARITIME AUTHORIZATIONS, 1971

Mr. McGOVERN. Mr. President, I ask unanimous consent that the Senate proceed to the consideration of Calendar No. 842, H.R. 15945. I do this so that the bill will be the pending business.

The PRESIDING OFFICER. The bill will be stated by title.

The BILL CLERK. A bill (H.R. 15945) to authorize appropriations for certain maritime programs of the Department of Commerce, which had been reported from the Committee on Commerce with an amendment.

The PRESIDING OFFICER. Is there objection to the request of the Senator from South Dakota.

There being no objection, the Senate proceeded to consider the bill.

ADJOURNMENT TO 11 A.M. TOMORROW

Mr. McGOVERN. Mr. President, if there be no further business to come before the Senate, I move, in accordance with the previous order, that the Senate stand in adjournment until 11 o'clock tomorrow morning.

The motion was agreed to; and (at 6 o'clock and 25 minutes p.m.) the Senate adjourned until tomorrow, Thursday, May 7, 1970, at 11 a.m.

NOMINATION

Executive nominations received by the Senate May 6, 1970:

BUREAU OF MINES

J. Richard Lucas, of Virginia, to be Director of the Bureau of Mines.

HOUSE OF REPRESENTATIVES—*Wednesday, May 6, 1970*

The House met at 12 o'clock noon.

The Chaplain, Rev. Edward G. Latch, D.D., offered the following prayer:

Thou shalt do that which is right and good in the sight of the Lord.—Deuteronomy 6:18.

Almighty God, who knowest our needs before we ask and who art endeavoring to lead us in right and good paths, we turn to Thee in this fellowship of prayer seeking light for our lives, hope for our hearts, and strength for our spirits.

We come to Thee in the midst of the problems and perplexities of daily living praying for greater faith, for higher wisdom, for broader sympathies, and for deeper good will. We are tempted to doubt, to yield to moods of depression, and to become cynical. By the might of Thy spirit restore our souls and lead us into the green paths of righteousness, peace, and love for Thy name's sake and for the good of all mankind.

Guide our Nation in these troubled times. Bless our President, our Speaker, Members of Congress, and all who work under the dome of this glorious Capitol. Increase our influence for good in the world by our genuine reliance upon Thee and by our generous response to the needs of our fellow men. In the spirit of Christ we pray. Amen.

THE JOURNAL

The Journal of the proceedings of yesterday was read and approved.

MESSAGE FROM THE SENATE

A message from the Senate by Mr. Arrington, one of its clerks, announced that the Senate had passed the following resolution:

S. RES. 403

Resolved, That the Senate has heard with profound sorrow the announcement of the death of Hon. William L. St. Onge, late a Representative from the State of Connecticut.

Resolved, That the Secretary communicate these resolutions to the House of Representatives and transmit an enrolled copy thereof to the family of the deceased.

Resolved, That, as a further mark of respect to the memory of the deceased, the Senate do now recess.

The message also announced that the Senate had passed without amendment bills of the House of the following titles:

H.R. 1951. An act to confer U.S. citizenship posthumously upon Sp4c. Aaron Tawil;

H.R. 2817. An act for the relief of Delilah Aurora Gamatero;

H.R. 3955. An act for the relief of Placido Viterbo;

H.R. 5936. An act for the relief of Kong Wan Nor;

H.R. 6125. An act for the relief of Anne Reale Pietrandrea;

H.R. 9001. An act for the relief of William Patrick Magee;

H.R. 11578. An act for the relief of Patricia Hiro Williams;

H.R. 12037. An act for the relief of Ali Somay; and

H.R. 12673. An act to authorize the transfer by licensed blood banks in the District of Columbia of blood components within the District of Columbia.

The message also announced that the Senate had passed, with amendments in which the concurrence of the House is requested, bills of the House of the following titles:

H.R. 5106. An act for the relief of Rogelio Tabhan; and

H.R. 12878. An act to amend the act of August 9, 1955, to authorize longer term leases of Indian lands at the Yavapai-Prescott Community Reservation in Arizona.

The message also announced that the Senate had passed bills of the following titles, in which the concurrence of the House is requested:

S. 793. An act for the relief of Peter Chung Ren Huang;

S. 850. An act for the relief of Kwok Kwen Ng;

S. 1703. An act for the relief of Rosa Pintabona;

S. 1886. An act for the relief of Dr. Max Ruetger Hasche;

S. 2427. An act for the relief of Cal C. Davis and Lyndon A. Dean;

S. 2490. An act for the relief of Miriam Lazarowitz;

S. 2526. An act for the relief of Angelo DiStefano;

S. 2820. An act to amend title II of the act of September 19, 1918, relating to industrial safety in the District of Columbia;

S. 2856. An act for the relief of Saul Bluestone;

S. 2863. An act for the relief of Mrs. Cumorah Kennington Romney;

S. 2976. An act for the relief of Margarita Anne Marie Baden (Nguyen Tan Nga);

S. 3037. An act for the relief of Dr. Shusum Cheuk; and

S. 3136. An act to confer U.S. citizenship posthumously upon Guy Andre Bianchette.

CONGRATULATIONS TO HON. EMANUEL CELLER

(Mr. FARBSTEIN asked and was given permission to address the House for 1 minute and to revise and extend his remarks.)

Mr. FARBSTEIN. Mr. Speaker, I would like to join my colleagues on both sides of the aisle in extending best wishes to my good friend and colleague from New York, the dean of the New York delegation and the dean of the House, the Honorable EMANUEL CELLER, on the occasion of his 82d birthday.

Few men, in Congress or out of it, have made contributions to the national welfare that equal his accomplishments. He is responsible for three amendments to our Constitution—and what amendments. He was instrumental in securing for the people of the District of Columbia the vote in presidential and vice-presidential elections. In an effort to insure the full exercise of franchise on the part of all our citizens, he labored to abolish and saw abolished poll tax in presidential elections throughout the land. Finally, to remove the possibility of our Nation's plunging into chaos during a period of disablement on the part of the Chief Executive, EMANUEL CELLER worked hard to embody into our present laws provisions for such emergencies.

His uncompromising stand on antitrust legislation is well known, and none of us who had anything to do with the spate of civil rights and immigration legislation that has come before Congress in the last decade will or can forget his unstinting and tireless work in the cause of justice and equality for all.

But I would fail my purpose were I to pay tribute only to his keen legal mind. EMANUEL CELLER is the great human being that he is because he possesses the qualities of understanding, compassion, courtesy, and humor to an extraordinary degree. All of us who know him know that we can call on him and be sure of a generous response—of sound counsel. His years with us have enriched us all. His presence in the Congress has helped us all to grow.

I again have the privilege of wishing you a very happy birthday, MANNY.

BIRTHDAY GREETINGS TO THE HONORABLE EMANUEL CELLER, DEAN OF THE HOUSE OF REPRESENTATIVES

(Mr. ALBERT asked and was given permission to address the House for 1 minute.)

Mr. ALBERT. Mr. Speaker, I am sure the Members of the House observed, as I did, the entry into the Chamber just a minute ago of the distinguished dean of the House, the gentleman from New York (Mr. CELLER) who has been a Member of this body for 48 years. He is still one of the most active and progressive