SENATE—*Thursday, December 3, 1970*

The Senate met at 10 a.m. and was called to order by Hon. THOMAS F. EAGLETON, a Senator from the State of Missouri.

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

O Thou Eternal One, we who are pilgrims of time and eternity pause to dedicate this day's labor to Thee. Let nothing deaden or destroy the awareness of Thy presence which comes to those who live by the Psalmist's message "Be still, and know that I am God." May we so completely yield ourselves to Thee that we may go where Thou wouldst go, say what Thou wouldst say through us, and do what Thou wouldst do for our fellow countrymen. Make us brave enough to make all necessary corrections in personal life and social relations which such a vision inspires and thus grow more and more into the image of the perfect one.

As we pray for ourselves, we pray that Thy power and glory may be manifest throughout the land and by the redemptive power of Thy spirit transform it into a miniature of Thy kingdom.

We pray in the Master's name. Amen.

DESIGNATION OF ACTING PRESIDENT PRO TEMPORE

The PRESIDING OFFICER. The clerk will please read a communication to the Senate from the President pro tempore (Mr. RUSSELL).

The assistant legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, D.C., December 3, 1970.

To the Senate:

Being temporarily absent from the Senate, I appoint Hon. THOMAS F. EAGLETON, a Senator from the State of Missouri, to perform the duties of the Chair during my absence.

RICHARD B. RUSSELL,
President pro tempore.

Mr. EAGLETON thereupon took the chair as Acting President pro tempore.

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 on November 25, 1970, the President had approved and signed the following acts:

S. 737. An act for the relief of Konrad Ludwig Staudinger;

S. 882. An act for the relief of Captain William O. Hanle;

S. 902. An act to amend section 1162 of title 18, United States Code, relating to State jurisdiction over offenses committed by or against Indians in the Indian country;

S. 1422. An act for the relief of Donal E. McGonegal;

S. 2455. An act to authorize appropriations for the Civil Rights Commission, and for other purposes;

S. 3620. An act for the relief of Mrs. Anastasia Pertsovitch;

S. 3853. An act for the relief of Mrs. Pang Tai Tai; and

S. 3858. An act for the relief of Bruce M. Smith.

EXECUTIVE MESSAGES REFERRED

As in executive session, the Acting President pro tempore (Mr. EAGLETON) laid before the Senate messages from the President of the United States submitting sundry nominations, and withdrawing the nominations of Robert N. Stewart, of Indiana, Hugh C. Matlock, of Colorado, Donald E. Pierce, of Idaho, Kenneth C. Kellar, of South Dakota, and Howard L. Hartman, of California, to be members of the Federal Metal and Nonmetallic Mine Safety Board of Review, which nominating messages were referred to the Committee on Armed Services.

(For nominations received today, see the end of Senate proceedings.)

THE JOURNAL

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the reading of the Journal of the proceedings of Wednesday, December 2, 1970, be dispensed with.

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, at the conclusion of the remarks of the distinguished Senator from Ohio (Mr. YOUNG) today, there be a period for the transaction of routine morning business with a time limitation of 3 minutes therein.

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

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.

THE CALENDAR

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Senate proceed to the consideration of Calendar Nos. 1397, 1398, and 1400.

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

NEZ PERCE TRIBE

The bill (H.R. 19000) to amend the act of April 24, 1961, authorizing the use of judgment funds of the Nez Perce Tribe, was considered, ordered to a third reading, read the third time, and passed.

Mr. MANSFIELD. Mr. President, I ask unanimous consent to have printed in the RECORD an excerpt from the report (No. 91–1383), explaining the purposes of the measure.

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

PURPOSE

The purpose of H.R. 19000 is to authorize a judgment of the Indian Claims Commission in docket No. 179 to be divided between the Nez Perce Tribe of Idaho and the Confederated Tribes of the Colville Reservation, Wash., and to authorize the use of the money after it is divided. The committee also considered a companion bill, S. 4239, introduced by Messrs. Church, Jordan of Idaho, Jackson, and Magnuson.

NEED

The net amount of the judgment is $1,119,071, which has been appropriated and is invested in interest bearing securities.

The money may not be divided between the two groups of Indians and used by them until Congress has approved their plans.

The bill provides for a diversion of the money in the manner that was used in 1961 to divide an earlier judgment recovered by the same Indians. Under this formula 86.5854 percent will go to the Nez Perce Tribe of Idaho, and 13.4146 percent will go to the Colville Indians. Both groups have approved this division.

The Nez Perce Tribe plans to use its share of the judgment as follows: 17 percent for land acquisition, 8 percent for the revolving credit fund, 15 percent for scholarships, and 60 percent for per capitas. The bill permits the money to be used in this manner if approved by the Secretary of the Interior.

The Colville Tribes plan to use their share of this judgment together with other judgment funds when they become available, for per capita payments.

COST

Enactment of the bill will require no additional appropriations.

YAKIMA INDIANS

The Senate proceeded to consider the bill (H.R. 380) to repeal section 7 of the act of August 9, 1946 (60 Stat. 968), which had been reported from the Committee on Interior and Insular Affairs with an amendment to strike out all after the enacting clause and insert:

That section 7 of the Act of August 9, 1946 (60 Stat. 968), is amended (1) by inserting "(a)" immediately after "SEC. 7.", and (2) by adding at the end thereof the following new subsection:

"(b) In any case in which an individual who, but for the provisions of subsection (a), would take from a deceased member of the Yakima Tribes by inheritance or by will any interest in or to any such restricted or trust estate referred to in subsection (a), the Secretary of the Interior, upon the request of the Tribal Council of the Yakima Tribes made during the pendency of the decedent's estate before the Examiner of Inheritance or at such other time as the Secretary may prescribe by regulation, shall pay to such individual, out of tribal funds

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of the Yakima Tribes on deposit in the United States Treasury, or out of other funds appropriated for such purpose, the fair market value (as determined by the Secretary of the Interior after appraisal) of such interest. In the event such Tribal Council fails or refuses to make such timely request, nothing in subsection (a) shall preclude such interest from passing to such individual by inheritance or will, as the case may be."

The amendment was agreed to.

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

The bill was read the third time, and passed.

The title was amended so as to read: "An Act to amend section 7 of the Act of August 9, 1946 (60 Stat. 968)."

Mr. MANSFIELD. Mr. President, I ask unanimous consent to have printed in the RECORD an excerpt from the report (No. 91–1384), explaining the purposes of the measure.

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

PURPOSE

The purpose of H.R. 380 is to amend section 7 of a 1946 statute that restricts the right to inherit trust property of deceased members of the Yakima Tribes. The committee also considered a companion measure, S. 995, introduced by Senator Hatfield.

Section 7 of the act of August 9, 1946, limits the inheritance of trust land on the Yakima Reservation to (1) enrolled members of the Yakima Tribes, (2) who have one-fourth degree or more of Yakima blood. An exception is made for a surviving spouse who is an enrolled member but possesses less than one-fourth degree of Yakima blood. Such person may inherit a life estate only in not more than one-half the property.

This section 7, which is applicable only to the Yakima Reservation, is an exception to the general law. Ordinarily the inheritance of trust lands on Indian reservations is governed by the law of the State in which the reservation is located.

Section 7 works unfairly. Many Yakima Indians have intermarried with neighboring tribal Indians. Some of the families live on the Yakima Reservation and some of them live on the neighboring reservations. These are Indian families, but the husband and wife belong to different tribes. Their children frequently can be enrolled in either tribe. A single family may enroll part of its children in one tribe and part of its children in the other tribe. When a parent dies owning an interest in a Yakima Reservation allotment, the children enrolled at Yakima may inherit, but their brothers and sisters who are enrolled in neighboring tribes may not inherit. The same rule applies to other direct and collateral relatives (grandparents, grandchildren, uncles, cousins, etc.) who happen not to be enrolled at Yakima.

In the 794 estates probated between 1946 and June 30, 1966, 287 enrolled Yakima Indians were prohibited from inheriting because they did not have the required quantum of Yakima blood; 494 unenrolled heirs, including husbands, wives, and children, were excluded because they were not enrolled members of the tribe.

Although other Indians may not inherit Yakima property, Yakima Indians may inherit property on other reservations. This has caused great dissatisfaction, and other tribes have sought retaliatory legislation.

Amendatory legislation has been before the committee since the 84th Congress, and several printed hearings have been held. A bill was last passed by the Senate in 1968.

COMMITTEE AMENDMENT

As passed by the House, H.R. 380 would repeal section 7 of the 1946 act. Officially, the tribe opposes changing the law, but many individual members strongly support repeal. The committee has adopted a substitute which would amend the 1946 act in such a way that in the future, in any case where an individual inherits an interest in a trust estate, the Secretary of the Interior, upon the timely request of the tribal council, would pay to such individual out of tribal funds, or other appropriated land acquisition funds, the fair market value of such interest. If the tribe fails or refuses to make the timely request, the interest in the estate will pass to the individual by inheritance or will, as the case may be.

The committee believes its recommended substitute is a reasonable compromise which will let the tribe maintain its land base. At the same time the heirs will be compensated if the tribe elects to purchase the inheritance.

The enactment of this bill will not affect other provisions of the 1946 act which relate to the rules for enrollment as members of the tribe.

COST

Enactment of the bill will not require any additional Federal expenditures.

PAN AMERICAN RAILWAYS CONGRESS ASSOCIATION

The joint resolution (H.J. Res. 1077) to amend the joint resolution authorizing appropriations for the payment by the United States of its share of the expenses of the Pan American Railways Congress Association, was considered, ordered to a third reading, read the third time, and passed.

Mr. MANSFIELD. Mr. President, I ask unanimous consent to have printed in the RECORD an excerpt from the report (No. 91–1386), explaining the purposes of the measure.

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

PURPOSE

The single purpose of House Joint Resolution 1077 is to authorize an increase in U.S. contributions to the Pan American Railway Congress Association from the current $5,000 a year to $15,000 a year.

BACKGROUND

The Pan American Railway Congress Association (PARCA) began in 1970 as the South American Railway Congress. In 1941 it decided to invite Central and North American countries to join and changed its name accordingly. The United States, by Public Law 80–794, accepted the invitation in 1948 at which time the $5,000 ceiling on U.S. contributions was enacted.

COMMITTEE ACTION AND RECOMMENDATION

The request for the increase was submitted by the State Department on December 19, 1969, and introduced as Senate Joint Resolution 171 by Senator Fulbright (by request) on January 26, 1970. A public hearing was held on May 18 at which Ambassador Joseph John Jova, U.S. Representative to the Organization of American States testified. The hearing is appended to the report for the information of the Senate.

A companion resolution, House Joint Resolution 1077, passed the House on November 16, 1970, and was referred to the Committee on Foreign Relations which, at its meeting on November 23, 1970, ordered it reported favorably to the Senate.

While this item is a matter of minor concern, there was testimony that U.S. participation was considered to be of sufficient benefit to warrant a raise in the ceiling set 22 years ago. The committee recommends enactment of the House Joint Resolution 1077.

ORDER OF BUSINESS

The ACTING PRESIDENT pro tempore. At this time, under the previous order, the distinguished Senator from Ohio (Mr. YOUNG) is recognized for not to exceed 15 minutes.

Mr. SCOTT. Mr. President, will the distinguished Senator from Ohio yield, without losing any of his time or his right to the floor?

Mr. YOUNG of Ohio. I am happy to yield to the distinguished minority leader.

LEGISLATIVE PROGRAM

Mr. SCOTT. Mr. President, I should like to ask the distinguished majority leader the prospects for some action today on amendments and, perhaps, on final passage of the transportation appropriation bill; and as to the contemplated pursuit of other legislation thereafter, both this week and next, if he could advise us.

Mr. MANSFIELD. Mr. President, to the best of my ability, I am delighted to answer the very pertinent inquiries of the distinguished minority leader as we approach the weekend.

It is hoped that we will be able to dispose of the Department of Transportation appropriation bill today.

I understand that there is a possibility that about 4 p.m.—this is not definite—an agreement will be reached to vote on the SST provision.

If action is completed on the Department of Transportation appropriation bill in time, hopefully it will be possible to take up Calendar No. 1402, H.R. 19830, the Independent Offices and HUD appropriations bill. If not, that will be taken up on Monday next, to be followed by the Defense appropriation bill, which will be reported today.

Time permitting, the Senate should be on notice that we will take up Calendar No. 1259, an act to authorize U.S. participation in increases in the resources of certain international financial institutions, to provide for annual audit of the exchange stabilization fund by the General Accounting Office, and for other purposes, on tomorrow.

Also, on tomorrow, it is quite possible that we will take up Calendar No. 1403, H.R. 15728, an act to authorize the extension of certain naval vessel loans now in existence, and for other purposes.

Mr. SCOTT. I thank the distinguished majority leader.

I should like to inquire of him now as to whether he thinks we will be able to return to our firesides before Christmas.

Mr. MANSFIELD. Oh yes. I hope that

we can get out of here around the 20th of December at the latest.

Mr. SCOTT. I recognize the importance of the fact that we meet weekly, but I also recognize that each week that passes there is greater likelihood that we will be spelling "weekly" a different way.

Once more I thank the distinguished majority leader and the distinguished Senator from Ohio (Mr. YOUNG).

Mr. MANSFIELD. May I say that I am delighted with the progress being made by the Senate in this post-election session, which the joint leadership regretted. I think that we have been doing very well in keeping up with all of our activities and maintaining a reasonably good momentum.

Mr. SCOTT. I do not believe it would be immodest to say that, in a sense, we have been able to serve, certainly to some degree, as mitigators of disaster.

EXECUTIVE SESSION

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Senate go into executive session to consider a nomination on the Executive Calendar.

There being no objection, the Senate proceeded to the consideration of executive business.

The ACTING PRESIDENT pro tempore. The nomination on the Executive Calendar will be stated.

CALIFORNIA DEBRIS COMMISSION

The assistant legislative clerk read the nomination of Col. James C. Donovan, Corps of Engineers, to be a member of the California Debris Commission.

The ACTING PRESIDENT pro tempore. Without objection, the nomination is considered and confirmed.

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the President be immediately notified of the confirmation of this nomination.

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

LEGISLATIVE SESSION

Mr. MANSFIELD. Mr. President, I move that the Senate resume the consideration of legislative business.

The motion was agreed to, and the Senate resumed the consideration of legislative business.

Mr. MANSFIELD. Mr. President, I express my deepest thanks for the courtesy and the graciousness, as always, which have been extended to me and the minority leader by the distinguished Senator from Ohio (Mr. YOUNG).

Mr. SCOTT. My thanks, also.

KENT STATE TRAVESTY

Mr. YOUNG of Ohio. Mr. President, in the magazine, the Progressive, of December 1970, the editor, Morris H. Rubin, and editorial staff published a most timely article under the caption "Kent State Travesty." This is so timely I ask unanimous consent that this editorial be inserted in the RECORD at this point as as part of my remarks.

Mr. President, the attorney general of Ohio, Paul Brown, who will be out of office next month, directed the Republican prosecuting attorney of Portage County, Ronald Kane, to convene a special Portage County grand jury, allegedly to thoroughly and fairly investigate the tragedy on the campus of Kent State University on the early afternoon of May 4, 1970.

Attorney General Brown is a personal and political friend of Ohio Governor James A. Rhodes. I assert that this special Portage County grand jury was conceived in fraud and fakery. Whether Governor Rhodes suggested this procedure to his personal and political friend, Paul Brown, the attorney general, or the attorney general first suggested this to Governor Rhodes is immaterial. The purpose of this special county grand jury of 15 men and women "meticulously" screened and selected by the Republican county prosecutor, Ronald Kane, and two special counsel selected by Governor Rhodes and his Republican attorney general, was to clear Governor Rhodes of the blame for his abominable blunder in calling the National Guard to Kent. It was planned as a whitewash job.

Seabury Ford, Portage County Republican Executive Committee Chairman, spoke out loud and clear. He stated:

> The loudmouth must have heard from the White House that college kids are bums. He said that the national guardsmen shot in self-defense.

Portage County is a rural county not far distant from my home. Its two most populous cities are Kent with a population of 28,000 and Ravenna with a population of 12,000.

The function and purpose of Robert Balyeat and Seabury Ford, friends of Rhodes who were designated by his attorney general as special counsel, was to try to clear Rhodes of the blame and condemnation for his abominable blunder in suddenly calling to active duty in Kent tired and battered Ohio National Guardsmen who had been on constant duty trying to maintain order in the Teamsters wildcat strike in the Cleveland-Akron area. This wildcat Teamsters strike was a violent and explosive strike in the Cleveland area between two warring factions of Teamsters. There had been shooting, badly injured truckers, overturned trucks, and violent manhandling not only between the battling Teamsters factions but in particular toward the guardsmen. A number of the guardsmen had been injured in the Teamsters rioting before the two warring factions of Teamsters reached a settlement at about 7 o'clock Saturday evening, May 2. Most of the 200 or so guardsmen had slept less than 4 hours during the preceding 2 nights.

The Kent mayor had suddenly changed the curfew hour against Kent students who walked across the line from their campus into Kent from 9 p.m. to 8 p.m. on this Saturday night instead of permitting students and their dates to go into Kent unmolested. Some students protested violently when they observed friends arrested for violating an 8 o'clock curfew. He asked Governor Rhodes to call out the National Guard to restore order in Kent. Many boys and girls were summarily jailed for the night shortly after 8 p.m., searched and held in jail throughout the night. They were not permitted to telephone their parents but next morning were released upon payment of $50 fine each. Even the girl students so arrested were searched by some policemen. There was no police matron who handled them. Other students deprived of their usual Saturday night opportunity to visit the movies or drink beer and enjoy relaxation away from the campus responded in name calling and refusing orders of the police to leave by calling them "pigs" and milling about in the center of Kent before leaving for their dormitories.

Governor Rhodes did not consult with President White or any other administrative official of Kent State University before calling National Guardsmen to the campus of Kent State. He had various alternatives. He could have ordered the university closed and to be kept closed until he rescinded that order. He could have asked the Portage County sheriff to swear in special deputies if his staff of deputies did not suffice to maintain order. He could have ordered to Kent the Ohio State Highway Patrol, a highly experienced outfit of mature intelligent men, highly respected State civil service employees with a fine record for law enforcement. They were available with their helicopters, and if there were any need whatever for additional law enforcement officers to be called to the city of Kent or to the adjoining university campus this was the logical choice. No, he was a candidate for the Republican nomination for U.S. Senator. The primary was the following Tuesday, May 5. The polls showed Congressman TAFT leading Rhodes. Rhodes suffered the handicap of having been exposed in Life magazine, threatening to sue that magazine for libel and then dropping the lawsuit rather than have his deposition taken to determine the facts and whether Life magazine editors had ample basis for the article he challenged. He considered it politically expedient to show how determined he was on the side of law and order.

He made the abominable blunder of summoning from Cleveland and Akron several hundred tired and battered guardsmen. If Ohio National Guardsmen were, in fact, needed in Kent and on the campus of Kent State University, then Governor Rhodes could have called from their homes in Warren, which is in the county seat of Trumbull County adjoining Portage County, two companies of Ohio National Guard military police. These guardsmen were fresh, not angered, and were specifically trained in riot control techniques.

This special Portage County grand jury report was a fakery and a fraud. It was expected and planned that some students

or professors were to be charged with committing misdemeanors or crimes. As expected not one National Guardsman was indicted. Instead 24 students and one Kent State University professor were indicted and charged with either first degree or second degree rioting.

One hundred FBI agents following 2 weeks thorough investigation and also the President's Commission on Campus Unrest following their investigation reported there was no rioting on the campus or commons of Kent State University at any time on May 4. Also that of the four boys and girls shot to death by guardsmen's rifles and those wounded by their rifle fire, not one was closer to the frontline or guardsmen than 100 feet at the time of the shooting. Only two were struck in front. All others were hit in the back or in their side.

Robert Stamps was shot in the back. The bullet missed his spinal column by an inch and exited in front. He was at a distance of 609 feet from the frontline of Ohio National Guardsmen.

Dean Kahler, a young student whose ambition was to be a football coach, was shot in the back at a distance of 300 feet from the frontline of guardsmen. He is paralyzed from the waist down and will be in a wheelchair for the remainder of his life.

Both the FBI and seven investigative reporters of seven metropolitan newspapers who had spent 2 weeks in thorough investigation and also the President's Commission reported that not one of those shot was a radical, that not any one of them participated in any riotings in Kent on any preceding night and that not one National Guardsman was injured at any time on May 4. One fainted, perhaps overcome by their own tear gas when the wind blew it toward the guardsmen, further angering them. Another apparently had a heart attack.

One hundred FBI agents reported following their 2-week investigation:

Most of the national guardsmen who did fire their weapons do not specifically claim they fired because their lives were in danger. Rather, they generally state in their narrative that they fired after they heard others fire.

We have reason to believe that the claim by the national guard that their lives were endangered by the students was fabricated subsequent to the event.

Donald MacKenzie was shot in the back of his neck. He was 750 feet distant from the guardsmen. He has been permanently injured due to the guardsman's rifle bullet. His family has incurred medical and hospital expenses exceeding $16,000 to date.

A special Portage County grand jury was then called and that term "grand jury" should be spelled with small letters, that is for sure, because their only job was to whitewash the National Guard and thereby try to vindicate Governor Rhodes.

May I add, Mr. President, that the President's Commission on Campus Unrest, concluding its report, stated:

The indiscriminate firing of rifles into a crowd of students and the deaths that followed were unnecessary, unwarranted, and inexcusable.

It is my hope and belief that following the time John J. Gilligan becomes Governor of Ohio next January and William Brown displaces Paul Brown as attorney general, justice will prevail. There is a legal axiom we trial lawyers in Ohio frequently repeat, "For every wrong there is a remedy."

Vice President AGNEW who, of course, has access to all the evidence collected by FBI agents and investigators of the Department of Justice stated in California shortly after May 4:

The officers and guardsmen responsible for the shooting and for the killing of those four students, should be charged with murder—not murder in the first degree. Where there is no premeditation but simply an overresponse in the heat of anger, that results in killing, it's murder.

Vice President AGNEW is an able lawyer. In Ohio we term this murder in the second degree. May I add that I am seldom in agreement with statements the Vice President makes but in this instance I am in complete agreement with him.

Mr. President, I ask unanimous consent that an article entitled "Kent State Travesty" be printed in the RECORD.

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

KENT STATE UNIVERSITY

If there was ever a case of outrageous insult added to mortal injury, it was the report of Ohio Special Grand Jury that investigated the tragic shootings at Kent State University last May 4. In contemptuous disregard of the facts—the facts even as attested by a sweeping FBI investigation—the Grand Jury fully exonerated the National Guardsmen who killed four students and wounded nine more, and indicted twenty-five persons linked with the campus protest against the Cambodian invasion.

Among those indicted on rioting and other criminal charges were a student wounded by a Guardsman's bullet, a professor who formerly served with the Arms Control and Disarmament Agency in Washington, and the president of the Kent State student body—an ROTC cadet who was elected last June on a non-violent platform of "Power to the Peaceful."

The Grand Jury, assisted in its labors by a special prosecutor who later declared that the Guard "should have shot all the troublemakers," found that the Guardsmen "fired the weapons in the honest and sincere belief and under circumstances which would have logically caused them to believe that they would suffer serious bodily injury had they not done so. They are not, therefore, subject to criminal prosecution under the laws of this state for any death or injury resulting therefrom."

In stark contrast to the Grand Jury's report was the evidence compiled by the FBI. As summarized in a Justice Department document and disclosed on the Senate floor by Senator Stephen M. Young, Ohio Democrat, the FBI investigators found "reason to believe that the claim by the National Guard that their lives were endangered by the students was fabricated subsequent to the event." The summary says six Guardsmen, including two sergeants and a captain, "stated pointedly that the lives of the members of the Guard were not in danger and that it was not a shooting situation."

The results of the FBI investigation, like the factual findings of the President's Commission on Campus Unrest, were available to the Special Grand Jury. It chose to ignore them and perform a wretched travesty against the judicial process.

Despite the results of its own investigation, the Justice Department has not responded, at this writing, to demands that a Federal grand jury be impaneled to investigate the Kent State affair. Those demands—and the defense fund being organized in behalf of the twenty-five defendants indicted—deserve the support of all Americans who still believe it is possible to attain justice within the system.

If the Kent State twenty-five are railroaded to jail, if the scandalous report of the Ohio Grand Jury is permitted to stand as the last word, the tragedy of last May will have been compounded to a monstrous degree. It will be the ultimate affront to the nation's youth—to everything, in fact, that is still decent in America.

THE DISMISSAL OF WALTER HICKEL

Mr. YOUNG of Ohio. Mr. President, President Nixon has made another blunder in summarily firing one of the most effective members of his Cabinet, Secretary of the Interior Walter J. Hickel.

His reasons for taking this action can only be surmised. Like his plan to end the war in Vietnam, it may remain a mysterious secret to us. It is unlikely, however, that this abrupt "purge" of the Secretary and his top aides had anything to do with their performance of their official duties, for Walter J. Hickel has proven to be an extremely energetic opponent of those industries and interests engaged in the pollution of our streams and rivers and of the air which we breathe. His assaults upon the oil companies and money-hungry land developers have apparently struck too close to home, that is the White House and to past and future potential contributors of millions of dollars to the Republican Party.

When Mr. Hickel's name was first proposed for the position of Secretary of the Interior, I had serious reservations concerning his fitness to serve as guardian of our environment and protector of our natural wildlife.

After he assumed office, however, Secretary Hickel took the lead in rewriting offshore drilling regulations so that companies must assume absolute liability for all pollution, accidental or intentional. He also championed the cause of conservationists against money-hungry land developers who have no pangs of conscience when it comes to tarnishing or destroying our natural wilderness in pursuit of the dollar.

Some months after he assumed office I wrote Secretary Hickel, commending him on the outstanding work he had been doing. I told him he had my admiration for his industry and his achievements as Secretary of the Interior, and that I was glad he had been appointed to this extremely important Cabinet position.

Now that Secretary Hickel has been unjustly and summarily fired by a very

shortsighted President, I feel equally strongly about his departure. I am regretful that he was ousted. He had been rendering real and needful public service. The courage he has demonstrated in speaking out about the threats to our environment has placed him in the forefront of the administration—too far in front apparently for the administration's taste. I recall, that on one occasion, when Secretary Hickel gave a speech upon a subject of great personal concern to me, the destruction, through pollution, of Lake Erie, he did more than merely utter the usual slogans and platitudes. He named names, among them four steel companies and a mining company; and the affected parties quickly complied with regulations.

Mr. President, this type of frank and forthright approach to the problem of pollution is desperately needed. Interior Secretary Hickel was far ahead of the present administration in this respect, and privately and publicly has pushed for higher appropriations for water pollution control than the administration has asked for. Secretary Hickel was well ahead of the White House in other respects as well, such as his insight into the issues which concern our youth, and his desire for more communication and discussion between cabinet officials. Such logical and constructive suggestions were undoubtedly annoying to a President who does not consider youth a significant part of his constituency, and who prefers to formulate policy isolated from any advisers who might hold differing opinions. I am fearful, Mr. President, that our Nation will be the loser now that President Nixon has kicked Walter Hickel out of his cabinet and has summarily dismissed six of his topmost administrative assistants. Frankly, I was skeptical regarding this former Governor of Alaska until following the first few weeks of his sturdy assertion of his authority. His injection of new life and vitality into the conservation movement and his stand against the ultrarich oil lobby caused me to revise this opinion. Now, however, I fear that our people, our Nation, its resources, and its youth will be poorer for his departure.

Mr. President, in Newsweek of December 7, 1970, there is an article under the caption "An Arrow From the Chief." I ask unanimous consent that this be printed at this point as a part of my remarks.

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

AN ARROW FROM THE CHIEF

Right from the start, Interior Secretary Walter J. Hickel was a minor embarrassment to the Nixon Administration—a scrappy, bumptious Alaskan whose views on conservation were originally so suspect among environmentalists that the Senate held up his confirmation to the Cabinet for two symbolic days. In the 22 months since then, Hickel converted most of his ecological critics into outspoken fans, but he never did stop embarrassing the President one way or another. Late one afternoon last week, Hickel was summoned to the White House on a moment's notice and, in Hickel's word, was "terminated"—the first of Mr. Nixon's Cabinet officers to leave the Administration to be openly fired since Harry Truman dumped Attorney General J. Howard McGrath during the tax scandals in 1952.

"Hickel did everything anyone can do to deserve being fired," said one highly placed White House aide—and it is true enough that probably no President since Franklin Roosevelt would have tolerated Hickel's alarums and diversions even this long. Since last May, when aides leaked his letter to Mr. Nixon implying that the Administration might "set out consciously to alienate" young people, Hickel has been an alien himself in the Administration's higher councils, and he did not smooth matters over by sniping at Spiro Agnew's campaign methods this fall. Even worse from the Administration's point of view, was Hickel's method of running the Interior Department—singly, outspokenly and off-the-hatband, making policy without consulting with Mr. Nixon's domestic advisers, criticizing Administration decisions, surrounding himself with his own "Alaska Mafia" and failing to subordinate himself to the ideal of team spirit that pervades the President's theory of governance.

It did not really matter, in Administration eyes, that Hickel was increasingly praised by conservationists as the most effective Interior Secretary in history, nor even that he served extracurricularly as the Administration's sole bridge to the nation's youthful dissidents. "In this business," said a White House staff man, "you're either loyal or you get out—you don't run your own show," Predictably, Hickel's successor, Maryland's Rep. Rogers C. B. Morton, chairman of the Republican National Committee, is a team player right down the field.

Whatever its causes, whatever its merits, Hickel's firing had all the clumsy bewildered air of bad improvisation that has come to typify the Nixon Administration's personnel moves. The Secretary apparently got the word indirectly a month ago that he would have to go, but he clung to his belief that he could straighten things out if he could just arrange a tête-á-tête with the President an opporunity he had not had since a routine conference in August. No such meeting was forthcoming, but the President was scheduled to sit with Hickel two weeks ago at an Interior Department gala at Washington's historic Ford's Theater, where Abraham Lincoln was assassinated.

Arrow: Instead, Mr. Nixon sent word at the last minute that he could not attend, and Mrs. Nixon headed the Presidential party. Soon afterward, Attorney General John Mitchell spent an hour with the Secretary, telling him that it was time to leave Interior but that the President might like to have him on his staff. Hickel not only refused the hint, he aired his feelings nationally last week, telling CBS he would not leave the Cabinet except "with an arrow in my heart." So the President fired his longbow, dispatching Hickel and no fewer than six of his aides. "Hell," said a White House staffer, "Hickel said it, didn't he?"

The amateurishness of Hickel's exit was matched by a singular display last week on the part of another departing Nixonian, urban-affairs adviser Daniel Patrick Moynihan—although this time the clumsiness was none of the White House's doing. Moynihan had already made up his mind to leave Washington, but he was miffed at what he thought were the commonplace jobs being offered him at Harvard, his old stamping ground. So two weeks ago Moynihan unreservedly accepted Mr. Nixon's offer to become U.S. ambassador to the U.N. (Newsweek, Nov. 30), telling only his wife and one official at Harvard—who leaked it. Then, even as the embarrassed White House was unofficially confirming Moynihan's new post (a harsh revelation to Charles Yost, the present ambassador, and a shock to other U.N. delegates), Moynihan was changing his mind again, deciding to go back to Harvard after all because, as he put it, "my family is awfully settled in Cambridge."

Moynihan wrote to the President, begging to be let off the hook, but even that was not the end of the slapstick. Moynihan had accepted an invitation to lunch with former U.N. Ambassador Arthur Goldberg at the latter's farm in Virginia to talk about his new assignment but Moynihan did not feel that he could tell even Goldberg about his withdrawal until the President accepted it. So Moynihan went to the farm anyway and sat through lunch, discussing a post he would not be taking with a friend who didn't know he wasn't taking it.

Dragons: Wally Hickel's tribulations never reached that exalted level of farce, but on the other hand they had been going on a good deal longer. The basic problem, one White House source admits, may be that "we didn't check him out"—and didn't have much idea what sort of man was moving into Interior. A self-made millionaire and former governor of his sparsely populated frontier state, Hickel brought enormous stubbornness and independence of mind to his Cabinet job, together with a flair for publicity and an un-Nixonian taste for battling every dragon he could find. In his first days in office, the Santa Barbara off-shore oil-drilling blowout occurred, and Hickel on his own ordered the drilling stopped immediately and announced a policy of "absolute liability" for the guilty companies. In the summer of 1969 he declared that he would "prosecute the polluters" and forced a reluctant Justice Department to take action—notably in the prosecutions of oil firms for drilling violations in the Gulf of Mexico. On another occasion, when the Justice Department moved against mercury pollution without naming the offending companies, Hickel named them.

But his most astonishing move was to delay approval of the huge trans-Alaska pipeline from the new oil fields of the North Slope, a pipe that could mean huge riches for Alaskans at a cost of shattering the ecology of millions of square miles of tundra. Hickel, to the surprise of all environmentalists, seemed ready at the time of his dismissal to force expensive alterations in the oil companies' plans in order to protect the tundra.

Hero: Hickel achieved a different renown last spring when his intercessionary letter to Mr. Nixon was made public on the heels of the Kent State shootings. The Secretary's mail soared to 1,500 letters a week, and he took to crisscrossing the U.S. campuses, getting a minor hero's welcome. "It's not that Hickel is a friend of the kids or anything," he told Newsweek's James Bishop Jr. just before his ouster. "I am just walking down the road telling a story, taking a positive approach to problems that have been with us for 50 years. I have got to do things my way."

From the White House windows, however, Hickel's way looked increasingly untidy and unsympathetic. There were gaffes: Hickel accepted on his own a Russian invitation to inspect Siberian oil pipelines, a project that was vetoed by foreign-affairs adviser Henry Kissinger. Again on his own, he planned a four-day conference on pollution this fall—and this time it was the President himself who shot it down. These difficulties might have proved insignificant if Hickel had been able to keep his channels open to the President. But the Secretary was as tightly screened by his aides as the President is by his, and even the Hickels' life-style, which runs

to backyard barbecue mixed awkwardly with the self-conscious manners of most Nixonians.

So Hickel was pushed back to Alaska—where his political future, at 51, is bleak—and Interior will be turned over to Rogers Morton, an enthusiastic outdoorsman and slick politician who "should have had the job in the first place," according to Stewart Udall, who held the post himself under JFK and LBJ. Still, it has already begun to seem likely that Hickel will be missed. Hickel's last act as Secretary was to ban U.S. imports of whale products from eight endangered species of whale—a move fiercely opposed by the cosmetics and oil industries. Thirty-six hours after Hickel's firing a call from Acting Secretary Fred Russell's office to the Government Printing Office held up Hickel's order, and Russell himself reportedly reversed Hickel's ban on billboards on Federal public lands.

LAKE ERIE—A DYING LAKE

Mr. YOUNG of Ohio. Mr. President, a recent issue of the Saturday Review, dated November 7, contains an article titled "Reviving the Great Lakes," written by John R. Sheaffer. The article offers hope that there may yet be time to save Lake Erie specifically, and the other beautiful Great Lakes—Lake Ontario, Michigan, Huron, and Superior—from the relentless tide of pollution that has so polluted Lake Erie and the other Great Lakes. While starting that the lakes have been grieviously abused, the report makes the hopeful statement that the effects are not irreversible. It makes crystal clear that we have the technology competent to restore a fondly remembered past.

Ohioans in my youth and young manhood could be proud of the beautiful white sandy beaches stretching for miles along the inviting crystal clear waters of Lake Erie. Thousands would crowd to the beaches to find relief from the summer's heat in Erie's waters. Today, unsanitary, blackened debris-cluttered beaches stretch for miles along the Erie shoreline from west of Toledo to close to Erie Pennsylvania. Officials of Cleveland, following a "swim if you must" policy have warned people throughout the last 10 years to stay away from its lakefront beaches and have discouraged those who wished to bathe in the waters offshore.

No longer may fishing enthusiasts enjoy productive excursions to many favorable lake areas, for polluted waters have caused many species of fish to die and disappear entirely from the lake. Today, only one high-quality fish, the perch, has remained in large numbers. Sheephead and carp exist to some extent but not many pickerel or bass.

Hopefully, at this time, in Muskegon County along Lake Michigan's shore, a precedent-setting experiment is taking place. The experiment is built around acceptance of the principle that nature is a closed ecological system and that wastes, when properly cycled back into the system, are valuable resources. These wastes, both human and animal, when spread upon the land, provide nutriment to food grains and vegetables. If, on the other hand, they are foolishly dumped into our waters, they stimulate aquatic plant growth and turn lakes into bogs.

The fact is, Mr. President, that a waste-water irrigation system similar to the one outlined in this article can fertilize barren land, turning it into productive land for agricultural purposes. This in turn would stimulate new jobs on land never before productive and recreational development of shorelines now useless, unattractive, and contaminated by waste left by waves. One very important value of the system is the destruction of disease-causing viruses normally found in raw sewage. Researchers have discovered that by spreading the waste upon the land, the soil itself is used to filter out these deadly viruses and turn them into innocuous protein.

The system as outlined seems well designed to aid the lands around the Great Lakes and add large stretches of well-drained soil suitable for irrigation. Yet not much of this type of land would be required to serve the irrigation purposes of even our largest cities.

There was a time, Mr. President, when our citizens could casually dump their wastes into rivers and lakes. As long as the population remained small and constant, nature itself would ignore the insults that were heaped upon its beautiful face. However as cities and towns multiplied and grew larger, continued dumping overwhelmed the ability of nature to act as a purifying agent. The task has fallen upon us to aid it.

As this timely article clearly demonstrates, the task is not hopeless. The fact is that man and nature can work hand in hand toward this end.

Mr. President, this article provides needed information and hope to each and every citizen who lives along Lake Erie's shore. I ask unanimous consent that it be printed in the RECORD at this point as part of my remarks.

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

REVIVING THE GREAT LAKES

(By John R. Sheaffer)

The death of Lake Erie has been announced. Premature aging, brought on by excessive intake of powerful stimulants, is given as the cause. And it is said that the whole Great Lakes system is rapidly being brought to the end of its life by the same malady.

This calamitous news should not be accepted as the final word. The Great Lakes have been grievously abused, but the effects are not irreversible. Technology competent to restore a fondly remembered past is available. All we lack is the will to use it.

The revival could be started by one simple official order: "No direct discharge of any wastes into any watercourse."

There are those who will say that such a directive would be meaningless for practical purposes because alternate means of waste disposal either are not available or are far too expensive to contemplate. But the Federal Water Quality Administration of the U.S. Department of the Interior is gambling the biggest single project grant in its history on the conviction that a workable substitute for indiscriminate dumping into the lakes is at hand. FWQA is committed to spend $2 million on the opening phase of a research project intended to demonstrate that sewage and factory effluent presently being poured into Lake Michigan can be diverted to fertilize barren land in Michigan. If all projections for the scheme prove out, this new waste disposal system will pay for itself and net a profit, perhaps even stimulate the economy of Michigan by building up an agro-industrial complex of respectable size.

Michigan's Muskegon County, fronting on the eastern shore of the lake directly opposite Milwaukee, is the scene of this precedent-setting experiment, which is built around acceptance of the principle the nature is a closed ecological system and that wastes, when properly cycled back into the system, are valuable resources. Wastes become liabilities only when they lose their rightful place in the cycle. Human and animal excrement, emptied into watercourses, stimulates aquatic plant growth and turns lakes into bogs. When spread upon the land, however, the same chemical constituents of waste give nutriment to food grains and vegetables.

Historically, the closed-system principle, though recognized by professional ecologists, has been ignored in practice in this country. We have dumped our wastes into rivers and lakes for generations. As long as the human population remained a statistically insignificant factor in the system, oxygen and bacteria in the water decomposed the waste and redistributed the chemicals in the purifying process. A certain amount of acceleration occurred in the rate of eutrophication (a geological process through which lakes gradually fill up and become first marshes and then dry land) but not enough to be distressing.

However, as cities and towns multiplied and grew and as household conveniences such as detergents were added to the burden of sewage, the amount of waste rose to flood proportions. Phosphorus, potassium, and nitrogen released into the water encouraged proliferation of colonies of plants to choke streams and lake beds, exhaust the oxygen supply, and overwhelm the restorative microorganisms. Idyllic watercourses deteriorated into stagnant, stinking pools.

Eight years ago, public-spirited members of the faculty of Pennsylvania State University reminded us of the intelligent way out of this dilemma. Long before then, the university had built a sewage disposal plant to serve the school together with the borough of State College, which existed chiefly as a dormitory community. The plant was designed in two stages: the first a sedimentation basin in which solid waste particles were separated out by gravity, the second a biological trap in which microorganisms digested organic matter in the wastes. The chlorinated effluent from the plant emptied into nearby Duck Pond and thence into Spring Creek, a tributary of the Juniata River, which flowed into the Susquehanna and on to Chesapeake Bay.

As the town and the school expanded, the amount of effluent added to the water rose from a million gallons a day to 3.5 million gallons a day, and the university faculty anticipated the time when the volume might reach six million gallons a day. Ultimately, if matters continued in that direction, Spring Creek would no longer be a body of water carrying away the liquid residue of human waste but a torrent of human waste carrying unrecognizable water through the beautiful Nittany Valley.

The geological structure of the valley was underlaid with limestone, which formed aquifers for storage of water underground all the way from Bellefonte to Scotia Mine. The water level in these subterranean reservoirs had been falling at the rate of 75 feet a year for a period of years. Being followers of the land grant college tradition, the Penn State faculty members were well aware of the remarkable filtering properties of the soil. They decided to test whether it would be possible to divert the sewage effluent from Duck Pond and spread it instead on adjacent crop land, open fields, and woods owned by

the university. A network of irrigation pipes was spread out from the pond (thus avoiding Spring Creek) to the test plots, and the sewage effluent was driven through these pipes and sprinkled onto the soil summer and winter for a period of six years.

At the end of the test period, it was found that the water level in the underground aquifers had dropped only a few feet each year in contrast to the precipitous annual decline previously experienced. Corn and hay grown on the irrigated land yielded three times the harvest of fields not involved in the experiment. Wheat planted in the test plots retained the same yield as before, but the protein content of the wheat rose. Northern pine trees grew as rapidly as southern pines usually do. The bird and animal population of the test area thrived on the new regime [for further details see "The Crisis in Water—What Brought It On?" *SR*, Oct. 23, 1965].

One of the inspirations for this experiment was work that had been done at Seabrook Farms in New Jersey by the late Professor Warren Thornthwaite, who was associated with the geography department at the University of Chicago while I was a graduate student there. I remember listening to his descriptions of the Seabrook project and wondering why he did not propose its application on a grand scale. Consequently, when I began to receive personal reports of the Penn State project from one of its prime movers, Dr. R. R. Parizek, I pondered more deeply than ever the implications of the idea's application to widespread urban areas.

Parizek, a young geologist who had taken his Ph.D. at the University of Illinois before going to Penn State, had been a college roommate of Dr. Arthur J. Zeizel, my assistant during my tenure as resource planning officer at the Northeast Illinois Planning Commission. Parizek visited Zeizel periodically and would tell us about what he was doing in Pennsylvania. The information he conveyed went into momentary storage at the back of my head through the three years during which I was occupied—first at the Northeast Illinois Planning Commission and then as research associate at the Center for Urban Studies of the University of Chicago—with problems of flood plain management. But in the spring of 1968, the subject moved to the front of my mind in response to a plea from Roderick Dittmer, director of planning for Muskegon County.

Dittmer dropped in at the Center for Urban Studies one day and said he would welcome some guidance in drawing up a policy to govern Muskegon County's planning for the future use of the county's water resources. Muskegon County was party to a four-state (Wisconsin, Michigan, Illinois, and Indiana) pact calling for an 80 per cent reduction in phosphates discharged into Lake Michigan by the end of the year 1972. It was Dittmer's responsibility to recommend how this cleanup could best be done in his county. My research associates and I agreed to help him in return for what the experience could teach us about managing urban environments. Muskegon County had about every modern problem we could imagine—racial, economic, educational, environmental—yet it encompassed an area small enough to study in everyday operation. A population of 170,000 is contained within 512 square miles.

Our initial investigations identified an interrelationship between two major causes of Muskegon County's economic woes. The county had never developed an agricultural economy to balance its industrial strength, nor had it capitalized on the recreational resource potential represented by Muskegon, Mona, and White Lakes. Popular use of the lakes was inhibited by pollution of the water, while the poor agricultural yield was caused by low fertility of the soil. Obviously, a waste-water irrigation system similar in its fundamentals to the one demonstrated at Penn State could fertilize the barren land with chemicals recovered from sewage diverted from the lakes.

Why had such an eminently sensible concept not been pushed to a stage that would give it national prominence? Was it because no set of elected officials had ever laid down a sufficiently demanding policy to suggest the notion to public appointees responsible for municipal water and sewage works? Acting on that probability, we wrote for Dittmer a statement of policy that could be effectuated only by banning discharge of pesticides, insecticides, phosphates, and other pollutants into the rivers and lakes. Dittmer courageously endorsed the statement and presented it to the Muskegon County Planning Commission. The commission, rallying behind its fighting chairman, Michael Kobza, added its approval. And then we encountered trouble.

The Michigan State Water Resources Commission did not like our point of view. What we proposed would meet any situation anyone could think of up to the year 2000. Why go to all that expense? It was costly enough to try to think in terms of 1980.

If the United States Supreme Court had not delivered its famous legislative reapportionment decision—the "one man, one vote" edict—we very probably would have lost our case right there. The old forty-man board of Muskegon County commissioners almost certainly would have bogged down in endless rounds of precinct politics. Fortunately, a reapportioned board of only fifteen members took office on January 1, 1969. With a remarkable disregard for partisan considerations, the nine Democrats and six Republicans (with F. Charles Raap sitting as chairman) voted in February to support the County Planning Commission in the face of the state Water Resources Commission's displeasure. We were thus authorized to come up with a plan to carry out the policy we had enunciated.

In earlier efforts to break through the conventional restraints that have kept politics so far behind technology in the handling of waste disposal, I had formed a professional liaison with William J. Bauer, founder of the Bauer Engineering Company of Chicago. I now proposed that Muskegon County hire Bauer to draw up engineering specifications for a comprehensive sewage disposal system that would leave no environmental aftereffects for future generations to worry about. A contract with Bauer was underwritten jointly by the county and the U.S. Department of Housing and Urban Development.

Bauer worked out a system far more sophisticated than Penn State's experimental project. He proposed coupling of the sewage outlets of twelve cities and townships into one great outlet pipe that swung away from Lake Michigan, Muskegon Lake, Mona Lake, and White Lake—traditional sinks for the wastes in these communities—and fifteen miles inland to virtually uninhabited sandy barrens of the eastern part of the county. There the pipe would empty into three aerated lagoons, each covering eight acres. These manmade basins, agitated continually by streams of air from mechanical mixers to minimize odor while bacterial colonies in the waste matter decomposed their host, would be big enough to hold the waste flow up to three days. This would enable accommodation of sudden surges of water such as occur after storms. And, because of the volume of water contained at one time, toxic industrial spills could kill the restorative bacteria and yet remain under treatment long enough for a new bacterial colony to grow and do its necessary work.

The enormous advantage represented by the latter circumstance may not be widely appreciated because most people do not realize that the conventional sewage treatment system in use in most American communities suffers regular spells during which the helpful bacteria are dead and the sewage simply passes through the system in an almost raw state. These spells last anywhere from seven to ten days. If six of them happen each year (one Midwestern state suggests that as an average), almost raw sewage is dumped into watercourses about one day in every week.

The system Bauer designed for Muskegon County called for two storage lagoons to hold the waste after it had passed through the aerating lagoons. Each of these storage receptacles would occupy 900 acres. Their purpose would be to hold the waste during the winter months when the ground would be too hardened by cold to absorb the effluent. After being withheld until the return of milder weather, the waste might be used as fertilizer during the remainder of the year.

Bauer's system finally called for the effluent to be piped from the storage lagoons to rotary irrigation rigs, which would spray the liquid with its suspended solids over almost 6,000 acres of now unproductive but potentially valuable sandy soil.

One appendix to the plan estimated a profit of $740,000 a year from sale of corn that could be grown on the irrigated fields, a quadrupling of the value of the land because of the irrigation, opening of at least 1,200 new jobs, recreational development of shorelines now useless because of uglification caused by water pollution, and construction of a 200-boat marina. Another appendix described a new industrial complex that might be built around the corn crop. Among its suggested products were feed for cattle, oil for the human diet, charcoal for use in Muskegon's existing paper mill, starch for the paper mill and for a foundry, carbon dioxide gas for a carbonate mill, calcium hydroxide for use on the irrigated land, and furfuryl alcohol for the finishing of office furniture.

Apart from its dollars and cents aspect, the Bauer system offered an intangible human bonus of inestimable value. This arises from a growing suspicion among public health physicians that many rapidly spreading diseases in this country are transmitted by viruses. How do the viruses travel? Their presence is not sought by any water quality tests now in use. Studies have been made of viruses in sewage, however, and thirteen different viruses have been found in raw sewage, in effluent from primary (one-step) sewage treatment plants, and in effluent from secondary (two-step) treatment plants as well. A month-long sequestration of the effluent in oxidation ponds kills 70 per cent of the viruses. But only after the effluent is filtered through soil do the viruses disappear altogether. Researchers have discovered that soil particles possess an electrical affinity for viruses, which allows the viruses to be grabbed by the soil and held long enough to be dismembered into innocuous protein.

Students of irrigation had one serious question about the Muskegon plan. It had to do with the established fact that elsewhere, in the past, prolonged irrigation saturated the land and created within it a mound of water that in time destroyed the enterprise. Because the thick layer of glacial debris—sands and gravel—underlying Muskegon County is incapable of holding water for long, the danger here was not great. Nevertheless, the Bauer system eliminated it by providing a network of drainage wells through which any threatening accumulation of excess water could be pumped back into the county's rivers and lakes.

The very farsightedness of the plan frightened some people away from it. They just could not believe it would perform as promised. The cities of Muskegon and Muskegon

Heights already had drafted plans for systems that would continue dumping treated sewage into the water. From a short-range perspective, these systems looked cheaper than ours. Consequently, they seemed more desirable to the local politicians, who not unnaturally followed the advice of sanitation consultants they had known and trusted for years; men who were still working with technologies no longer competent to anticipate the needs of an exploding population.

The continuing absence of approval from the Michigan Water Resources Commission encouraged this local opposition. To counter it, we invited Parizek to come out from Penn State and show a short documentary movie of the Penn State project in operation. Dittmer, Kobza, Raap, and Muskegon County Administrator Ray Wells responded by rounding up their colleagues and chartering an airliner to take them to Penn State to inspect that experiment personally.

The political struggle surged back and forth, with the outcome unpredictable, until N.J. Lardieri, corporate director of air and water pollution for the S. D. Warren Paper Company, a division of Scott Paper—one of the three dominant industries in Muskegon County (Ott Chemical, a division of Corn Products, and Continental Motors, a division of Teledyne, are the other two)—asked to be shown the facts on which our policy decisions had been based. Although we figured his company would have to pay more than half the operating costs of the disposal system Bauer had planned (because charges for the system would be allocated according to the flow rate, and effluent from the S. D. Warren factory would make up 55 per cent of the total discharge into the system). Lardieri saw that our concept had the advantage of solving the water pollution problem once for all; the costs could be amortized with business-like predictability. When the other Muskegon industries followed S. D. Warren, our opposition began to crumble. But we still lacked the approval of the state of Michigan.

Michigan Congressman Guy Vander Jagt is the ranking Republican member of the Conservation and Natural Resources Subcommittee of the Government Operations Committee of the U.S. House of Representatives. On one of his frequent trips home to consult with his constituents, he heard of the furor we had raised. After meeting with us at dinner, he said: "It appears that our present efforts [in handling sewage disposal] are headed in the wrong direction." Later he added, "I will predict that the Muskegon County facility will be the focal point for the nation's battle to solve water pollution problems." He returned to Washington to make this prediction come true.

From David Dominick, head of the Federal Water Quality Administration, the Congressman went to Russell Train, chairman of the White House Council on Environmental Quality, and from Train to President Nixon's assistant for domestic affairs, John Ehrlichman, and Ehrlichman's environment specialist John Whittaker. The President must have heard about this round of visits, for he wrote me a letter expressing interests in the development of Muskegon's "new and promising approach to sewage disposal." Train voiced his enthusiasm to Dominick, who wrote glowingly to Congressman Vander Jagt. The Congressman personally carried Dominick's letter to Michigan Governor William Milliken. The Governor thereafter announced that he would make an environment tour of Michigan, with Muskegon as one of the stops. After his return to the capitol in Lansing at the end of this tour, the approval we had awaited from the Michigan Water Resources Commission came through.

In mid-September U.S. Interior Secretary Walter J. Hickel announced that FWQA, which operates within his Cabinet jurisdiction, had awarded a $1,083,750 research and demonstration grant and an additional $981,650 construction grant to the Muskegon project. These sums cover only the first year of a seven-year commitment. Secretary Hickel fixed the total cost at approximately $30 million. Of this, the federal government will pay 55 per cent, the state of Michigan 25 per cent, and Muskegon County the balance. Design specifications are now being prepared for bids. Construction will be awarded about January 1, 1971, and the system ought to be in operation in 1972.

"If this project is completely successful, there will be many more opportunities to utilize similar systems in the Great Lakes region," Secretary Hickel said in his September announcement. This is unquestionably true. The Great Lakes basin is made up of glacial outwash plains. Large stretches of well-drained soil suitable for irrigation lie within reach of urban centers but beyond commuting zones and thus are susceptible to purchase at unexploited farmland prices. If we take the Muskegon irrigation tract as a model, simple mathematics tells us that a billion gallons of waste water per day (that is the flow rate of Chicago's sewage disposal system, the largest in the country) can be disposed of on 260,000 acres of land. A preliminary survey of the major metropolitan areas in the United States suggests that all of them could be served in this manner by using marginal lands equivalent to no more than 2 per cent of the acreage on which fifty-nine principal crops were harvested in 1968.

TRANSACTION OF ROUTINE MORNING BUSINESS

The ACTING PRESIDENT pro tempore. Under the previous order there will now be a period for the transaction of routine morning business.

The Senator from Virginia is recognized.

ADDRESS BY SENATOR BENNETT BEFORE THE TAX FOUNDATION, INC.

Mr. BYRD of Virginia. Mr. President, on Tuesday evening, the distinguished senior Senator from Utah (Mr. BENNETT) addressed the annual meeting of the Tax Foundation in New York.

The Tax Foundation is a nonpartisan, nonprofit organization, and, in my judgment, a very excellent one.

It compiles a great deal of data on Federal Government spending, and spending by the State and local governments. It presents evidence to the public on the tax systems of the various States and the Federal tax system. It is factual and nonpolitical. I think it is a very worthwhile organization.

I want to commend the Tax Foundation for selecting this year, as the recipient of the 1970 Public Service Award, the Senator from Utah (Mr. BENNETT). Senator BENNETT, in receiving this award, follows last year's recipient, Dr. Arthur Burns. Another recipient of the Public Service Award from the Tax Foundation has been the able and distinguished Representative from Arkansas, the chairman of the Ways and Means Committee, the Honorable WILBUR MILLS.

WALLACE BENNETT is an outstanding Member of the Senate. He is an able and beloved colleague.

The Senator from Utah made a very able and provocative address to the Tax Foundation on December 1. I ask unanimous consent that the text of the address be printed at this point in the RECORD.

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

SPEECH BY SENATOR WALLACE F. BENNETT

Gentlemen of the American Tax Foundation and their lovely ladies—you have done me a great honor tonight by considering me to be worthy of this distinguished award; thus putting me on the same level as the other really wonderful men who have also received it—some of whom include Harry Byrd, Wilbur Mills and last year, Arthur Burns, with whom it has been my treasured privilege to serve in government.

Ever since I knew it was to come to me, I have been wondering what I had done to earn it. Certainly I can point to no single achievement or event. But I do realize that in many little and unspectacular ways I have been able to contribute something to our tax system over the years—both as a Senator and a taxpayer. I suppose I can be said to symbolize the old Scottish saying—"many a mickle makes a muckle."

Your invitation to address this meeting of the American Tax Foundation does me a great honor and the announcement that I have been chosen to receive your 1970 Public Service Award fills me with humble gratitude. But to justify your confidence in me by trying to demonstrate in this speech an adequate and responsible understanding of the nation's tax-related problems is a fearsome challenge.

As I see the situation, there are three central problems of tax and fiscal policy with which we must all be concerned. The first is how to restore approximate balance in the budget. We must bring an end to the large budgetary deficits that have plagued us for four decades and have been the chief cause of the inflation that works so much hardship on our people and disrupts our economy. In addition, it indirectly causes the high interest rates that have placed such heavy burdens on business and individuals, particularly upon those persons who must finance the purchase of a new home.

A second and newer problem grows out of the role that our tax structure can play in improving our balance-of-payments problems. As we all know, for the last decade or so, our balance-of-payments picture has not been good. Since 1950, our cumulative deficit in the balance of payments has climbed to $45 billion, while our short-term liabilities have increased from $8 billion to $42 billion. In the same period, our gold stock has dropped from $24 billion to $11 billion. Indeed, had it not been for the Two-Tier Gold System and the agreement among the Big Ten to establish special drawing rights at the International Monetary Fund, our gold balance would be even lower than it is today. As a result, we are now at a point where remedial action must be taken. Indeed we have very little time in which to search for new tax approaches which will encourage our exports, by removing the present handicaps that are placed on our exporters. If we cannot soon give our exporters an even break in competing in foreign markets, we may be faced with the realization that our balance-of-payments problems can only be solved through the final undesirable resort to devaluation, which in itself would create a myriad of serious problems in world trade and world economies.

The third broad problem is a perennial one. Indeed as we know from this Rescinder's

bowl it has been with us at least since 1768, when those delegates voted against unfair taxation. The difficult task here is the ever-present challenge for us to keep revising our tax structure with the changing times to make it always fair and responsive to our continuing economic needs and goals. We want a dynamic and growing economy—an economy which encourages American industry to expand its output and which provides jobs enough to maintain an attainable maximum employment level and at the same time insure constantly increasing living standards for our people. It is important, therefore, that we consider what changes in our tax structure would move us closer to this goal.

These three central problems are closely interrelated—so much so that one cannot help but conclude that we must proceed simultaneously to try to resolve all three problems if we hope to resolve any single one of them. For example, perhaps the most important single step that we can take to improve our balance of payments is to adopt budgetary policies that will restore price stability at home so that our exporters will have reasonable costs and be able to price their products competitively in foreign markets. Similarly, a fair and properly designed tax system can supplement expenditure control in combating inflation because it encourages industry and labor to increase the output of goods and services. In addition, tax proposals that might improve our basic system often involve initial temporary revenue losses, so that if we want to consider them seriously we must control expenditures and the budget.

Let's turn first to the first problem listed, job of bringing the budget under control. Here we have no easy task. The initial budget figures that appeared in February projected a modest *surplus* of $1.3 billion in the unified budget for the 1971 fiscal year. Last May, the budget figures had to be revised to project a modest $1.3 billon *deficit* in the unified budget. And now, there is a considerable body of expert opinion which believes that the actual final fiscal 1971 unified budget deficit could reach as high as $15 or $16 billion. And if we want to look at the Federal funds budget, which excludes trust fund receipts and expenditures, the possible deficit grows even more ominous—to about $22 or $23 billion.

Whether these later estimates will prove to be accurate is still a matter of conjecture since the end of fiscal 1971 is still 7 months away. But I'm afraid that the odds are that the budget deficit in the current fiscal year will be very large.

This unfortunate situation is the result of several factors. First, expenditures will be higher than the levels recommended by the Administration. On this issue, as a Republican, I can't avoid the comment that the Democrats seem to be seeking to get double political advantage for the 1972 elections from current spending: they want to be in position to claim credit for any apparent temporary benefits which may flow from this added spending and at the same time blame the Republican administration for failing to get its promise to balance the budget and control inflation.

A second reason why the anticipated budget deficit in the current fiscal year may be so large is that some of the revenue-raising measures proposed by the Administration may not be adopted by the Democratically-controlled Congress in time to affect fiscal 1971 tax receipts if at all.

Here it is December First—with no more than three or four weeks left in the present session of Congress—and some of the Administration's tax proposals have just been approved by the House Ways and Means Committee while others have been rejected. This particular legislation would continue the present level of excise taxes on new cars and telephones for two years and accelerate gift and estate payments. The other revenue bill, the tax on lead in gasoline has been killed for this year. Estimates are the package will net the Treasury $630 (m) million in the remainder of the current fiscal year at least $2.8 (b) billion in the 12 months beginning July 1, 1971. The bill could come before the full House as early as Thursday but there's no telling when we will be able to get to it in the Senate Finance Committee or on the Senate floor.

As you know, the Senate Finance Committee is still struggling with the Social Security, Welfare Reform and Trade Bills, and the chance of being able to report out a tax bill on top of these three and get all four through the Senate and out of conference before Christmas is very slim to say the least.

Still another factor that is contributing to the size of the anticipated budget deficit for fiscal 1971, is that tax collections are low because of the leveling off of the economy. For example, in the current fiscal year, the resulting loss in corporate income tax collections alone will probably be in the range of $4 to $5 billion. This, in itself, is an important reason why we must take adequate steps to eliminate inflation since inflation inevitably leads to economic disruptions of the type we are now undergoing.

All this strongly indicates that we must intensify our search for ways to gradually bring the expenditure situation under better control. This not only involves careful scrutiny of individual expenditure items, but in addition, Congress next year may be forced to give consideration to setting legal ceilings on Federal expenditures, which would apply to itself as well as to the Administration. I, myself, would hope this will not be necessary, because such ceilings would undoubtedly create a built-in rigidity which would inevitably hamper government operations. However, they do have the advantage of forcing us in Congress to focus on the need for setting priorities in expenditure programs and of requiring an overall view of expenditures as compared with the present systems of reaching the expenditure total based on a separate one-at-a-time consideration of every expenditure proposal, without considering their possible effect on the ultimate totals.

Let us turn now to our second area of interest—the urgent need to move toward a favorable balance of payments by encouraging exports. In the 10-year period 1960 through 1969, for example, our balance of payments has been in deficit 9 years on a liquidity basis and 7 years on an official settlements basis.

One tax related approach to this problem is embodied in the so-called DISC proposal which was included in the trade bill as it passed the House of Representatives, but stricken from the bill just yesterday by the Senate Finance Committee. Of course, it might be added again on the floor. This proposal would permit the organization of domestic corporations which engage solely in export sales activity, (known as Domestic International Sales Corporations (DISC's)) to defer U.S. tax on foreign income. The major objective is to grant our domestically-based exporters some measure of equity with American companies that have established facilities in foreign countries, and are thus able to take advantage of their host country's export benefits. Foreign countries generally employ many devices to provide advantages for their exports. Devices which range well beyond favorable tax measures. They include direct grants, very liberal government credit, insurance and guarantee facilities, interest subsidies, internal shipping subsidies and exchange control privileges.

In addition, many foreign countries grant special tax incentives to encourage their exports. For example, Japan allows special accelerated depreciation on facilities used to produce goods for export, special tax deductions for capital reserves used to develop overseas markets, and certain other deductions for service income associated with exports.

West European countries also provide tax incentives to encourage their exports. The most outstanding example is the export rebate, under GATT, of all indirect value added or turnover taxes in the EEC countries. These taxes are scheduled to be harmonized soon at about 15 percent of sales, which is no small subsidy.

In addition, individual European countries have their own unique tax incentives for exporters. For example, France provides that earnings by a foreign sales subsidiary by a French company are not taxed currently. The French also have a special inter-company pricing system which has the effect of permitting sales by parent French companies to foreign subsidiaries at prices approximating cost. Obviously, we cannot protect home-based American exporters from all these devices, but we should be searching diligently to see what we can do to develop some effective answer to this problem which may well be the adoption of some of the same kinds of tax privilege already accorded our foreign competitors—including the American companies who have moved their facilities abroad. Or we might seek to find ways by which our own tax structure can be changed to give them the same advantages the foreigners have obtained from their governments through tax related rebates or the imposition of border taxes. It is becoming increasingly obvious that the power to create tax inequities in international trade grows out of the GATT agreement itself. The GATT rules permit countries with sales taxes to rebate these taxes to exporters and also to impose them as equalization taxes on imports at the border. However, they do not permit similar rebates or equalization taxes for income taxes, including the corporation income tax. This is defended on the ground that sales taxes are passed on in the form of higher prices and that corporation income taxes are not similarly passed on. But many tax experts question this argument and maintain that a substantial part if not all of the corporation income tax is inevitably reflected in higher prices. It is obvious to me that the present GATT rules discriminate markedly against the United States, which relies heavily on income taxes at the Federal level.

It has been suggested that such discrimination against our exporters could be reduced if the United States without changing the basic structure of its other taxes, imposed border taxes on imports.

Others have suggested that the United States eliminate the existing discrimination against its exporters as a result of the GATT rules by adopting a sales tax of its own, one form of which might be value added tax which the Europeans use. This could be a partial substitute for the present corporation income tax. We could, then, take advantage of GATT, as the Europeans do, by rebating all or part of such a tax on our exports as well as by imposing import equalization taxes at the border.

Many authorities doubt the wisdom of adopting a value added tax for this purpose. Its opponents maintain that we should not mold our tax structure to conform to the discriminatory rules of GATT, particularly since this is an international agreement which Congress has never approved. They also argue that in order to be effective in

stimulating exports, the value added tax would have to be set at a high rate, which would mean a basic restructuring of our tax structure. A small two percent value added tax would not help our competitive position very much, if at all, while a large 15 percent tax, comparable to the proposed European rate, could conceivably raise enough taxes to completely supplant the present corporation income tax and thus require in a major overhaul of our whole tax system.

Finally, a value added tax is essentially a multistage sales tax; a tax on the value added at each stage of the manufacturing process. This raises the question, do we want to adopt a new form of national sales tax at the very time we have been making an effort to get rid of as many Federal excise taxes as possible?

A recent news story out of Washington said that the Treasury, under a Presidential directive, was writing legislation to create a value added tax. This statement is speculative and premature. My inquiry reveals that while the Treasury is in fact working on such a proposal, it is being done for the President's consideration and not as the result of any specific direction from him—or assurance he is prepared to accept it. But the fact that it is being worked on seriously is highly significant in itself—and I'm sure this will give all of us an added interest in his 1971 budget message.

Turning now to my third problem: the need for a continuing review of our tax system. No matter how we try to keep it effective, adequate and equitable, we inevitably run head-on into the first, the need for revenues to balance the budget. Facing this joint challenge, obviously the chief question is—"what is the likelihood of a substantial tax increase next year, and a second and related question is, "what other tax changes are under consideration either for increased revenue or greater equity."

Barring some unexpected emergency, the likelihood of substantial new tax increases next year appears quite remote. In part this is because all the immediately available ways to increase taxes are unpopular and appear to raise problems. From my experience on the Finance Committee, and as a taxpayer myself, I know that all tax increases are a traumatic experience for the American people. In addition, there is an understandable reluctance on the part of both the administration and the Congress to increase taxes in a period when the economy is obviously not operating at full capacity.

Our experience with the income tax surcharge, the last remnants of which expired in June of this year, was searing. There was great difficulty in securing Congressional approval for the extension of the surcharge to the midpoint of this year, even at a reduced rate. Accordingly, it is unlikely that there will be serious legislative proposals next year to bring the surcharge back.

The 1969 Tax Reform Act provided substantial income tax relief, which will amount to over $9 billion a year when fully effective in 1974. Sometimes, the suggestion is made that substantial revenue could be secured by postponing the effective dates of this relief. However, from a practical point of view, only a limited amount of additional revenue could be secured in the fiscal year 1972 by postponing—say until calendar year 1972—the additional income tax reliefs scheduled to take effect in calendar year 1971. This would add only about $1.3 billion of additional revenue to collections in fiscal 1972. It does not seem feasible to roll back the $650 per capita exemption level scheduled for calendar 1971 to the $625 average for calendar 1970 since for practical purposes, the $650 exemption has been in effect since July of 1970, and is already taken into account in withholding rates. (The $625 per capita exemption level in 1970 represents an average of a $600 exemption for the first half of calendar 1970 and a $650 exemption for the second half of calendar 1970).

Of course, large amounts of revenue could be secured by permanently eliminating all income tax relief scheduled by the 1969 Tax Reform Act which has not yet taken effect. But I don't know anyone in government who believes that this would be either desirable or politically feasible. What political candidate would dare recommend withdrawing tax relief promised to many millions of taxpayers in the form of a liberalized low income allowance, higher standard deductions, and exemption levels, a maximum 50 percent rate on earned income, and lower taxes for single people. The treasury has already indicated so far as it is concerned it does not consider this area as a major source of revenue.

Some additional revenue conceivably might be secured from Federal excises, for example, by increasing the existing taxes on liquor and tobacco, or by adopting new excises. This would be a change from the trend in recent years which has been toward reducing Federal excise taxes, not raising them. The Excise Tax Reduction Act of 1965, eliminated many long-standing excises, including those on admissions, jewelry, furs, cosmetics, luggage, radios, musical instruments, and business machines. I certainly do not see any great enthusiasm on the part of the Congress to restore any of these taxes.

I hope that this discussion of the difficulties of funding new sources of revenue will not give anyone the idea that it will be impracticable to secure adequate revenue to finance necessary government operations. If our economy returns to its growth rate and we again have fairly high employment levels, revenues from the present tax system would grow about $15 billion each year just as the result of the increase in the underlying tax base. Accordingly, over the long run, if we have reasonable success in holding to the line on expenditures, we can hope to balance the budget without any major tax adjustments. In fact, with really tight expenditure control, it might be possible to have significant tax reductions, for example, in the individual income taxes. I want to make clear that I don't see any practical prospect of such tax reduction in the next few years. But over the long run, if we are successful in keeping expenditure levels stable, such reduction in taxes may be a very real possibility.

However, if expenditures get out of control and continue to expand rapidly, it may well be necessary, in the future, to look for new sources of revenue to avoid large budgetary deficits and inflation. This would involve some difficult choices. In such a situation, the question of a value added tax is sure to be raised since it would produce large amounts of revenue if it were used as an addition to rather than as a substitute for the present corporation income tax. But this would be a painful adjustment for business to make.

As I suggested in the beginning of this talk, in addition to tax proposals designed primarily for their revenue impact, a number of proposals are under consideration by the Treasury which are designed primarily to make the tax system fairer and more efficient. I would like to mention a few. It is impossible to indicate at this time precisely when, if ever any of these proposals will receive serious consideration by the Congress. But some of them could be recommended next year.

There is, for example, some unfinished business left over from the Tax Reform Act of 1969. The Treasury Department requested that provisions dealing with the tax treatment of deferred compensation be omitted from the 1969 Act to give the Department more time to study the problems involved. I believe that the Treasury is now working on this area and may have some legislation proposals soon.

Another area which the Tax Reform Act did not cover concerns balanced treatment of pensions for self-employed persons as compared with pensions for corporate executives and other employees. The Treasury Department may give us legislative proposals in this area too.

The overall question of estate and gift taxes is scheduled for re-examination. While there have been a number of important changes in these taxes over the years, they have not been given a broad-scale, over-all review since the time they were adopted. Such a review would be likely to cover such items as rates, exemption levels, the relationship of the estate and gift tax structures to each other, the use of trusts to reduce estate tax, the desirability of increasing the marital deduction to 100 percent to eliminate taxes on transfers between spouses, and possible ways of providing relief for the liquidity problems which are now encountered where estate tax has to be paid out of a small family business. Some people who call for the restructuring of the estate and gift taxes also ask for re-evaluation of the present income tax treatment of capital gains left uncollected at death.

The proposal for the sharing of Federal income tax revenues with State and local governments hs been around for a long time, and has again attracted considerable attention because the Nixon Administration has already put forth a specific plan for such revenue sharing. But any plan, for revenue sharing inevitably opens up a number of controversial issues which must be considered most carefully by the Congress. Any revenue sharing plan could undoubtedly provide substantial financial assistance to State and local governments, but it would divorce the responsibility for raising funds from the control of the expenditure of these funds. In addition, it would involve a substantial revenue cost of the Federal Government.

The Congress may also re-examine the tax provisions affecting older people. Studies conducted by the Treasury Department indicate that the tax credit for retirement income and the provisions affecting the tax treatment of pensions and annuities are now so complicated that older people frequently cannot cope with these items on their tax returns. As a result, many older people do not get the full tax relief that the law intends. In the future we may, therefore, see the tax benefits intended for this group provided more fairly and efficiently in some simpler way.

Another possible area of tax reform concerns the depreciation allowance provided for business investment. It has been charged that the repeal of the investment credit under the 1969 Tax Reform Act has reduced incentives for businessmen to invest in productive equipment. These holding this view often suggest that we should liberalize depreciation allowances to provide new incentives to raise investment to higher levels. Such proposals, however, are not without their opponents usually outside of business or industry who stress the revenue loss—and charge favoritism and unfairness.

Finally, I would like to see greater progress toward tax simplification. I understand that the Internal Revenue Service has again simplified the individual income tax forms and that many taxpayers, particularly in the lower income brackets, will find these 1970 forms easier to prepare. In addition, I hope you are alert to the fact that Chairman Mills of the Ways and Means Committee has introduced, with bipartisan support, a

so-called deadwood bill to simplify the Internal Revenue Code by deleting material which is no longer relevant. The scope of this bill is indicated by the fact that if passed it would repeal 150 sections of the Code and deletes portions of another 850 provisions, thus, affecting over 1,000 sections of the Internal Revenue Code.

This brings me to the end of my three part analysis of our current tax situation, the essence of each of which might be described as a search for a balance, a balanced budget and a sound balance-of-payments position, both to be achieved by trying to create and maintain an equitable balance of burden upon various parts of the economy. But this is not really the end of the subject. It is actually the starting point—not the product, but merely preliminary sketches for a blueprint.

If economics were an exact science and Congress was a sterile laboratory, we might be able to predict results and promise success in solving these problems. But, alas, this is not so. Even though the word "political" has been dropped from the original label of the inexact science once known as "political economics," politics is still alive and well, and living in Washington. All members of Congress are political animals. Many have little knowledge of, or faith in economics—the dismal science, the rare economists who have come to Congress, soon seem to learn how to shape their economics to conform to their politics.

But, bad as this may sound, it's not the most serious aspect of the matter. It is far more important to remember that every politician's attitude is always an understandable reflection of that of the people back home. Indeed, this is the concept on which both our government and our economic system were consciously built. The citizen is sovereign, the customer is king. On these twin foundations we have built not only history's greatest political power, but also its richest economic machine, and both are now facing the debilitating diseases that always seem to come with complexity and affluence.

We still give lip service to such traditional American virtues as thrift, self-reliance, and personal responsibility. But more and more we seek to replace self-reliance with government grants, welfare and subsidies, thrift with inflation, and personal responsibility with "let the government do it."

Greater tax problems inevitably result created by the need for more tax revenues, followed by pressures from every sector of the economy to shift the added tax burden to the other fellow. That's what happened in the Tax Reform Act of 1969. These are the pressures that are operating on us in the Finance Committee, as we work on the Social Security Bill, the Welfare Bill, the Trade Bill, and any new tax bill the House may send us this year, and next.

Gentlemen, when the majority of our citizenry really wants budgets balanced and inflation stopped, wants to protect the American dollar and the industries that support it, and wants to move toward equity and balance in our tax system, they can have it and quick. But so long as every group seeks its own advantage first, politicians will respond, and we will be able to do little more than to continue to tinker and fumble with the tax laws. We are not your bosses, you are ours. The citizen is sovereign. The customer is king. When you are ready to command with a clear voice and a firm will, we will give you true tax reform, but not until.

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

The PRESIDING OFFICER (Mr. STEVENSON). Without objection, it is so ordered.

ORDER FOR RECOGNITION OF SENATOR HOLLINGS TOMORROW

Mr. KENNEDY. Mr. President, I ask unanimous consent that, after disposition of the Journal on tomorrow, the distinguished Senator from South Carolina (Mr. HOLLINGS) be recognized for 15 minutes.

The PRESIDING OFFICER (Mr. STEVENSON). Without objection, it is so ordered.

COMMUNICATION FROM THE PRESIDENT

The ACTING PRESIDENT pro tempore (Mr. EAGLETON) laid before the Senate the following communication from the President of the United States, which was ordered to lie on the table:

THE WHITE HOUSE,
Washington, December 3, 1970.

Hon. SPIRO T. AGNEW,
President of the Senate,
Washington, D.C.

DEAR MR. PRESIDENT: There is now pending before the Senate a bill of vital importance to the international economic, financial, and political interests of the United States. H.R. 18306 authorizes increased U.S. participation in four multilateral financial institutions: The International Monetary Fund, the World Bank, the Inter-American Development Bank, and the Asian Development Bank.

We and many other nations have given those institutions strong support in the past. They have earned this support by using their resources well in the service of a growing and prosperous world economy, a more stable international monetary system, and a more rapid growth of the developing countries. Their hallmark is shared contributions, impartial expertise, and the assurance of high standards of economic performance.

In asking the Congress to adopt this legislation, I have taken particular care to see that the financial obligations it entails are compatible with this Administration's fiscal programming. H.R. 18306 is a prudent and financially responsible combination of contingent liabilities, monetary transactions, and expenditures carefully spaced over a long period of time.

A large part—almost $900 million—of the total authorization represents contingent liabilities and will enable the World Bank and the Inter-American Development Bank to borrow further in private markets to carry out important parts of their lending programs. This guarantee or callable capital subscription should not involve budgetary costs.

Another substantial portion of the authorization—$1.5 billion—is a monetary transaction involving an increase in our IMF quota. This Fund quota increase will not result in budgetary costs.

As to the remaining authorizations in H.R. 18306, less than $1.3 billion will require an actual expenditure of dollars; of which $35 million will be spent in fiscal year 1971, $70 million in fiscal year 1972 and $155 million in fiscal year 1973, with the rest spread out over a number of additional years.

Passage of the legislation now is essential

—to maintain United States leadership in international monetary affairs and to avoid a substantial and continuing loss in our share of allocations of Special Drawing Rights at the International Monetary Fund beginning on January 1, 1971;

—to enable other countries to subscribe to almost $2 billion of World Bank capital stock and to carry out a policy of maintaining equity in Bank and Fund subscriptions which we have strongly advocated in the past;

—to allow us to participate fully with other developed countries in the peaceful development of Asia;

—to join with our Latin American neighbors in an effort to speed their economic and social progress.

This legislation has my full support. In my Foreign Assistance Message to the Congress of September 15, 1970, I proposed that the United States channel an increasing share of its development assistance through multilateral institutions as rapidly as practicable. H.R. 18306 is a critically important step in that direction, and I strongly urge prompt and favorable action on it by the Senate.

Sincerely,

RICHARD NIXON.

COMMUNICATIONS FROM EXECUTIVE DEPARTMENTS, ETC.

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

PROPOSED SUPPLEMENTAL APPROPRIATIONS FOR THE FISCAL YEAR ENDING JUNE 30, 1971 (S. Doc. No. 91–114)

A communication from the President of the United States, transmitting proposed supplemental appropriations and other provisions for the fiscal years 1970 and 1971 in the amounts of $225,765,754 in budget authority and $5,497,000 in proposals not increasing budget authority (with an accompanying paper); to the Committee on Appropriations and ordered to be printed.

SECRET REPORT OF THE COMPTROLLER GENERAL

A letter from the Comptroller General of the United States, transmitting, pursuant to law, a secret report on the administration and effectiveness of U.S. economic and military aid to Honduras (with an accompanying report); to the Committee on Government Operations.

SUSPENSION OF DEPORTATION OF CERTAIN ALIENS

Two letters from the Commissioner, Immigration and Naturalization Service, Department of Justice, transmitting, pursuant to law, copies of orders suspending deportation of certain aliens, together with a statement of the facts and pertinent provisions of law pertaining to each alien, and the reasons for ordering such suspension (with accompany-

ing papers); to the Committee on the Judiciary.

REPORT ON IDENTICAL BIDDING IN ADVERTISING PUBLIC PROCUREMENT

A letter from the Attorney General, transmitting, pursuant to law, a report on identical bidding in advertised public procurement, dated July 1970 (with an accompanying report); to the Committee on the Judiciary.

REPORTS OF COMMITTEES

The following reports of committees were submitted:

By Mr. ELLENDER, from the Committee on Appropriations, with amendments:

H.R. 19590. An act making appropriations for the Department of Defense for the fiscal year ending June 30, 1971, and for other purposes (Rept. No. 91-1392).

By Mr. YOUNG of North Dakota, from the Committee on Agriculture and Forestry, without amendment:

H.R. 15770. An act to provide for conserving surface waters; to preserve and improve habitat for migratory waterfowl and other wildlife resources; to reduce runoff, soil and wind erosion, and contribute to flood control; and for other purposes (Rept. No. 91-1393).

By Mr. EASTLAND, from the Committee on the Judiciary, without amendment:

H.R. 2335. An act for the relief of Enrico DeMonte (Rept. No. 91-1394);

H.R. 2876. An act for the relief of the Beasley Engineering Co., Inc. (Rept. No. 91-1395);

H.R. 8573. An act for the relief of Mrs. Margaret M. McNellis (Rept. No. 91-1396);

H.R. 12128. An act for the relief of William Heidman, Jr. (Rept. No. 91-1397);

H.R. 12173. An act for the relief of Mrs. Francine M. Welch (Rept. No. 91-1398); and

H.R. 12958. An act for the relief of Central Gulf Steamship Corp. (Rept. No. 91-1399).

MILK, TOMATO, AND POTATO PROMOTION—REPORT OF A COMMITTEE (S. REPT. NO. 91-1400)

Mr. YOUNG of North Dakota, from the Committee on Agriculture and Forestry, reported an original bill (S. 4560) to provide authority for promotion programs for milk, tomatoes, and potatoes, and submitted a report thereon, which bill was placed on the calendar and the report was ordered to be printed.

TRANSFER OF PEANUT ACREAGE ALLOTMENTS—REPORT OF A COMMITTEE (S. REPT. NO. 91-1401)

Mr. JORDAN of North Carolina, from the Committee on Agriculture and Forestry, reported an original bill (S. 4561) to amend the peanut marketing quota provisions to make permanent certain provisions thereunder, and submitted a report thereon, which bill was placed on the calendar and the report was ordered to be printed.

BILLS INTRODUCED OR REPORTED

Bills were introduced or reported, read the first time, and, by unanimous consent, the second time, and referred or placed on the calendar, as follows:

By Mr. PASTORE:

S. 4557. A bill to amend Public Law 91-273 to increase the authorization for appropriations to the Atomic Energy Commission in accordance with section 261 of the Atomic Energy Act of 1954, as amended, and for other purposes; to the Joint Committee on Atomic Energy.

By Mr. TYDINGS (by request):

S. 4558. A bill to enable professional individuals and firms in the District of Columbia to obtain the benefits of corporate organization, and to make corresponding changes in the District of Columbia Income and Franchise Tax Act; to the Committee on the District of Columbia.

By Mr. HARTKE:

S. 4559. A bill to amend the Department of Transportation Act in order to modify the national policy with respect to the protection of lands traversed in developing transportation plans; to the Committee on Commerce.

(The remarks of Mr. HARTKE when he introduced the bill appear below under the appropriate heading.)

By Mr. YOUNG of North Dakota:

S. 4560. A bill to provide authority for promotion programs for milk, tomatoes, and potatoes; placed on the calendar.

(Reference to the bill when it was reported by Mr. YOUNG of North Dakota appears earlier in the RECORD under the heading "Reports of Committees".)

By Mr. JORDAN of North Carolina:

S. 4561. A bill to amend the peanut marketing quota provisions to make permanent certain provisions thereunder; placed on the calendar.

(Reference to the bill when it was reported by Mr. JORDAN appears earlier in the RECORD under the heading "Reports of Committees".)

By Mr. MATHIAS:

S. 4562. A bill for the relief of Miguel Angel Alvarado-Granda, Dalinda Mora de Alvarado, Miguel Almir Alvarado-Granda, and Maria Alvarado-Granda; to the Committee on the Judiciary.

S. 4559—INTRODUCTION OF A BILL TO STRENGTHEN THE CONSERVATION PROVISIONS OF THE TRANSPORTATION ACT

Mr. HARTKE. Mr. President, I introduce for appropriate reference a bill to strengthen the conservation provisions found in section 4(f) of the Transportation Act.

This proposal would broaden the application of section 4(f) in three ways: First, by withholding Department of Transportation approval from projects which would have an "adverse effect on the environment" rather than only projects which would directly "use" public parklands, as is currently provided; second, by effectively deleting the requirement that a wildlife or waterfowl refuge be "publicly owned"; and third, by extending the protection of the section to include "navigable waters."

The first modification to section 4(f) merely strengthens its declaration of policy "that special effort should be made to preserve the natural beauty of our countryside." Clearly, transportation projects may destroy natural beauty and prevent recreational activities even if they do not directly "use" public parks and refuge areas. For example, an interstate highway which is built immediately adjacent to a refuge area may have the effect of frightening wildlife from their sanctuary without an actual "use" being made of refuge land. Accordingly, it is obvious that the present language of this section is inadequate to protect its stated goal. It is appropriate and entirely consistent with the policy declaration to include with the protections of section 4(f) projects which would "have an adverse effect" on the environment.

The deletion of the requirement that wildlife and waterfowl refuges be publicly owned would recognize the fact that private groups such as the Nature Conservancy have, over the years, purchased many tracts of land threatened by commercial projects and maintained them as wildlife or waterfowl refuges. There is no reason why these refuges should be denied the protection given publicly owned refuges. This modification would not create a risk of abuse or require subjective administrative decisions. Wildlife and waterfowl refuges and sanctuaries are easily identifiable and Federal officials would determine their "significance" under the statute.

The third section of this legislation broadens the protection of section 4(f) to include navigable waterways. Certainly it lacks logic to protect this Nation's countryside from environmental misuse but not our waterways. Yet, this is the effect of this section as it is now written. The Federal Government has a longstanding interest in navigable waters. The Secretary of Transportation already has the responsibility to approve the construction of bridges and causeways in the navigable waters of the United States—See 49 U.S.C. 1655(g)(6). The proposed modification to section 4(f) would merely make clear the Secretary's duty to consider environmental factors in exercising this authority—indeed, it would merely make more explicit the duty already imposed upon the Secretary—and all other Federal officials—by the National Environmental Policy Act of 1969.

The Federal Government already has far-reaching programs to control water pollution under the Water Quality Act and the Water Resources Planning Act. It would make little sense to undertake such costly efforts to insure clean, pure rivers and not to undertake the corollary task of protecting the natural beauty and recreational value of these navigable waters. Extending the protection of section 4(f) to include navigable waters would be a worthwhile step toward the latter goal.

The PRESIDING OFFICER (Mr. SAXBE). The bill will be received and appropriately referred.

The bill (S. 4559) to amend the Department of Transportation Act in order to modify the national policy with respect to the protection of land traversed in developing transportation plans introduced by Mr. HARTKE, was received, read twice by its title, and referred to the Committee on Commerce.

ADDITIONAL COSPONSOR OF A BILL

S. 3385

At the request of the Senator from West Virginia (Mr. BYRD) on behalf of the Senator from Georgia (Mr. TAL-

MADGE), the Senator from New Jersey (Mr. WILLIAMS) was added as a cosponsor of S. 3385, to amend title 38, United States Code, to increase the income limitation applicable to non-service-connected pensions for veterans and widows, to increase the income limitations applicable to dependency and indemnity compensation for dependent parents, and to liberalize the rates of such pensions and such dependency and indemnity compensation.

SENATE RESOLUTION 491—SUBMISSION OF A RESOLUTION REAFFIRMING AMERICAN COMMITMENT TO THE RIGHT OF ASYLUM FOR POLITICAL REFUGEES

Mr. DODD. Mr. President, a week ago yesterday, a Lithuanian seaman made a dramatic leap for political asylum by hurling himself across the 10-foot gap separating a Soviet vessel from the Coast Guard cutter *Vigilant*.

At the point where he crossed from the Soviet vessel to the American vessel, the seaman in question had become a political refugee in the full sense of the term.

But 10 hours later he was forcibly returned to the Soviet fishing trawler by Soviet crewmen who boarded the *Vigilant* with the permission of the Coast Guard. In the process the man was savagely beaten by the Russian crewmen, kicked unconscious, trussed, and carried off.

According to eyewitness accounts, the officers and crew of the *Vigilant* simply looked on, without attempting to intervene, even though the Soviet defector was crying for help and was on his knees praying and begging them to save his life.

The newspapers have carried the news that President Nixon has ordered a very full and immediate investigation of the entire incident. In commenting on the President's decision, a White House spokesman said that:

> It appears that the situation was very poorly handled and there appear to be some errors in judgment by the officials involved.

I am sure that all Senators will applaud the President's decision in ordering a complete and immediate investigation of this flagrant and tragic violation by U.S. officials of the 1951 Convention on the Protection of Refugees.

Many questions will have to be answered in this situation.

The first question that requires an answer is how the district commander of the Coast Guard, Rear Adm. W. B. Ellis, could make such a decision on his own authority, without specific instruction from the State Department or the White House, or, for that matter, without even consulting them.

The second question that must be answered is how the captain of the vessel and his officers, after permitting the Soviet seamen to come aboard, could stand by passively while they pummeled and kicked the defector into unconsciousness.

The third question that must be answered has to do with the peculiarly defensive statement put out by Coast Guard commander, Adm. Chester R. Bender. Instead of indicating his own concern and asking for an investigation, Admiral Bender offered this incredible explanation:

> Under the circumstances the commander of the First Coast Guard District felt that it was reasonable and proper that we not permit our ship to be used as a means of defection and that the man should be returned.

The officials responsible for this decision did more than place the United States in violation of the Convention on the Protection of Refugees. By inviting the Soviet vessel to send its seamen aboard to apprehend the defector, they sanctioned a flagrant violation on international law; and this violation was compounded when the officers of the vessel stood by supinely while the Soviet crewmen mercilessly beat the defector, on an American vessel and inside American territorial waters.

Nothing like this has happened since the tragic days after World War II when, in our ignorance, we forcibly returned some millions of Soviet citizens to Soviet custody, despite their protests and pleas for mercy, and despite the many hundreds who committed suicide rather than accept return.

The United States does respect the right of asylum, and this must be made unmistakably clear to the entire world.

To erase the disgrace that this incident has inflicted on the American name, it is my hope that, after all the facts have been established, the sternest treatment will be meted out to the authorities responsible for this unauthorized, illegal, and unspeakably inhuman decision.

For the purpose of establishing the American position on the protection of refugees in unmistakable terms, I submit for appropriate reference a resolution deploring the handling of this incident, endorsing the President's decision to order a full investigation, and reaffirming our commitment to the right of political asylum and to the protection of refugees.

The PRESIDING OFFICER (Mr. SAXBE). The resolution will be received and appropriately referred.

The resolution—Senate Resolution 491—which reads as follows, was referred to the Committee on Foreign Relations:

> Whereas the Universal Declaration of Human Rights stipulates, in Article XII, that "everyone has the right to seek and to enjoy, in other countries, asylum from persecution . . ."; and
>
> Whereas the Convention relating to the status of refugees states that "no contracting state shall expel or return a refugee in any manner whatsoever to the frontiers of territories where his life or freedom would be threatened on account of his race, religion, nationality or political opinions"; and
>
> Whereas the forceful return of the Lithuanian seaman from an American Coast Guard cutter to a Soviet fishing trawler constituted a flagrant violation of the right of political asylum guaranteed in the Universal Declaration of Human Rights and the Convention relating to the status of refugees; and
>
> Whereas the apprehension of a Soviet defector by Soviet personnel aboard an American vessel and inside American territorial waters, constitutes an unprecedented violation of international law and international custom; and
>
> Whereas the Coast Guard command has made it clear that the decision to invite Soviet personnel to come aboard the Coast Guard cutter Vigilant to apprehend the defector was made without specific instruction from the State Department or the White House or without even consulting them; therefore be it
>
> *Resolved*, That the Senate of the United States deplores the handling of this incident and endorses President Nixon's decision to order a full and immediate investigation of the circumstances; and be it further
>
> *Resolved*, That the Senate reaffirms the commitment of the United States of America to the right of political asylum and its continuing and unconditional support for the Convention relating to the status of refugees.

ADDITIONAL STATEMENTS OF SENATORS

SENATE PRAYERS AND SPIRES OF THE SPIRIT

Mr. FANNIN. Mr. President, I should like to invite the attention of Senators to a marvelous book which has been just released by the Bethany Press, of St. Louis, Mo.

It is entitled "Senate Prayers and Spires of the Spirit," an anthology of some of the exceptional prayers and prose of our late beloved former Chaplain, Rev. Dr. Frederick Brown Harris.

This fine little volume comprises 40 of the prayers with which Dr. Harris opened sessions of this body and an equal number of his best columns, "Spires of the Spirit," which were published in the Washington Star and other national newspapers for more than 20 years. In fact, the Philadelphia Inquirer published these excellent essays as "Saturday Sermons," right up to the time of Dr. Harris' passing last August 18.

Dr. Harris' collaborator on the project and the editor of the book was Joseph D. Phelan, who has been the administrative assistant to Representative JERRY L. PETTIS, of California.

Every Senator knows about Dr. Harris' 24 years of faithful service to the U.S. Senate, so there is little need here to recite the many virtues and qualities which that outstanding man brought to us. I believe the tributes of four of the six Vice Presidents under whom he served, printed on the back cover of the book, say it all. However, I should like to point out one paragraph from the accompanying review of the Alexandria, Va., Gazette of November 26, 1970:

> Ever aware of the complexities of our daily lives that strain to a breaking point man's power to reason, his prayers did much to ease the burdens carried by those men who serve in the United States Senate.

No man could leave behind a richer treasure, and I am sure that anyone who reads this book will forever cherish it.

Mr. President, I ask unanimous consent that the entire Gazette review be printed in the RECORD:

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

WILLING HANDS AND THANKFUL HEART

(By Evelyn Agnor)

Did you ever meet Compassion face to face?

Compassion . . . that human emotion that tops the list of man's claim to being God-like . . .

Did you note that those humans "wearing this badge" were and are the "great contributors" of good in our world; God's emissaries of truth and love and hope . . .?

"Senate Prayers and Spires of the Spirit," a new book just released by Bethany Press of St. Louis, Mo. ($4.95) can best be described as "an introduction to compassion."

On Saturday, Dec. 5, from 10:30 a.m., throughout the hours of the Alexanderia YWCA's "Christmas Walk" Helen Harris will be on hand at the Y's Religious Book Shop, 602 Cameron St., to autograph copies of her late husband's book.

Dr. and Mrs. Harris had just completed compiling the book from selected prayers offered before the U.S. Senate during his 24 years as chaplain and of articles from his column that was published in the Washington Evening Star. "Spires of the Spirit," prior to his death on Aug. 18 of this year.

Mrs. Harris, blessed with the same compassion and love of mankind that marked her husband's years of outstanding service, gives much of the credit for the final arrangement with Bethany Press for publishing the book to Joseph D. Phelan, administrative assistant to Rep. Jerry L. Pettis, congressman from California.

Mr. Phelan and his family will share part of the day in Alexandria with Mrs. Harris.

For those familiar with Dr. Harris' writings the messages of comfort and peace and inspiration will come as no surprise, yet will lend a wealth of reading pleasure.

For those being introduced to the words of this great American for the first time, no source of "self-help" literature could offer more.

Ever aware of the complexities of our daily lives that strains to a breaking point man's power to reason, his prayers did much to ease the burdens carried by those men who serve in the United States Senate.

His columns in the Evening Star provided readers with the same comfort.

On Tuesday, Oct. 8, 1968, Dr. Harris opened that day's Senate session with the following prayer:

"Eternal God, our Father, we turn from the wild confusion of the world without, praying that Thou wilt cleanse our hearts from secret faults.

"We lift grateful hearts for the heritage that is ours, bought by toils and tears other than our own.

"In the eternal struggle of truth and error, tyranny and liberty, give us the assurance that we do not fight alone, but that Thy increasing purpose is bound up with all this human struggle toward the goal of man's redemption from ignorance, hunger and chains.

"Riding forth with knightly valor, may we bear in our hands the commission of ancient days, 'He hath sent us to bind up the broken hearts, to proclaim liberty to the captives and the opening of prisons to them that are bound, to proclaim the day of justice of our God.

"We ask it in the Name that is above every Name. Amen."

His final prayer before his retirement, prayed Jan. 3, 1969 reads in part:

"O merciful God whose truth and whose statutes stand forever, we beseech Thee to grant unto us, who seek Thy face, the benediction which a sense of Thy presence lends to each new day. Unite our hearts and minds to bear the burdens that are laid upoon us.

"By tasks too difficult for us, we are driven unto Thee for strength to endure and wisdom to interpret rightly the signs of these testing times.

"In this high hour, may there be lifted at the very beginning of this session the fervent petition whose melody makes us one—'God bless America' . . ."

BIOMEDICAL RESEARCH

Mr. MANSFIELD. Mr. President, an article in the Evening Star of yesterday afternoon as well as one in this morning's Washington Post reports a grim warning by the National Academy of Sciences about the state of biomedical research in this country. This gloomy assessment from some of this country's leading life scientists in this country have suffered in effect a 30-percent cut in real Federal dollars in the last 5 years.

Dr. Philip Handler, president of the National Academy of Sciences, in making this report stated that the administration does not share our belief in the importance of supporting basic research and singled out the Bureau of the Budget as the problem area. I wish to call again the attention of the Senate and hopefully the Office of Management and Budget of the administration to the increase in appropriations that the Senate and the House added to the budget recommendations for the support of biomedical research of the specific nature referred to by Dr. Handler. And once again I implore the Office of Management and Budget to permit the expenditure of these funds contained in this recently passed appropriations bill as a first step to restoring these most important biomedical sciences and research to their proper standing.

The Congress last year enacted a restriction to the Defense Department's appropriations limiting its sponsorship of basic research to those fields that have a relevance to defense needs. The financial impact of this amendment last year on Defense Department-sponsored projects was not significant when viewed against the background of the total appropriation by the Defense Department for research. It was expressed then and has been expressed many times since then on the floor and elsewhere that the intention of this amendment was not to reduce the Federal contribution for research but to rechannel the resources through more appropriate agencies. The National Science Foundation and the National Institutes of Health are appropriate agencies through which the Federal resources should be channeled for most of the basic research in the life sciences, social sciences as well as for much of the exact science.

Again I wish to commend the senior Senator from Washington (Mr. MAGNUSON) and the senior Senator from New Hampshire (Mr. COTTON) for their leadership in the increase of moneys this year over the budget request for the biomedical sciences sponsored by the National Institutes of Health. I hope the Office of Management and Budget will appreciate the need for the expenditures of these moneys and the grim prospect ahead if this first start is not made.

I ask unanimous consent that the articles by Victor Cohn and John Lannan be incorporated in the RECORD at this point.

There being no objection, the articles were ordered to be printed in the RECORD, as follows:

[From the Evening Star, Dec. 2, 1970]

A PLEA FOR THE LIFE SCIENCES

(By John Lannan)

Sadly, almost with a resignation that nothing will come of it, one of the nation's top scientists and policy makers made another plea today for more Federal support for science.

This time the request came on behalf of the life sciences specialists—those who deal in research and technical applications which lead to better, more efficient, less expensive medical care through the understanding of life itself.

PROBLEMS OVERWHELMING

A report called "The Life Sciences" outlined the situation. The plea was made by Dr. Philip Handler, president of the National Academy of Sciences and chairman of the committee that produced the report.

In a press conference called by the academy, Handler summarized the report and, figuratively speaking, told reporters the scientists simply don't know how to handle the problems the report presents.

"The administration does not share our belief" in the importance of supporting basic research, he said. "The Bureau of the Budget is the problem area."

The report itself, he noted, looked superficially like one more attempt by the scientific community to indulge itself in self-serving efforts to keep the grants coming in.

In fact, he argued, the opposite is true.

REPORT TOOK 2 YEARS

The report was compiled by 180 contributors in 29 committees over two years. It is a grim document. In 526 pages, it points out that the nation which once led the world in biomedical research now is hard put to stay even in the running.

"The Life Sciences" report argues that although science in general is the lifeblood of a technological society, the biomedical area is the one which keeps that society healthy.

Handler pointed to a deficiency of 50,000 doctors, a complicated and archaic medical delivery system and the prostitution of biomedical research to pay faculty salaries as examples of obvious problems.

Then he referred to the report's "snapshot view" of the present system, under which 1.5 percent of a $60 billion health budget goes to support basic research.

"THE ONLY HOPE"

"Biomedical research," the report said, "is . . . the biggest health bargain one can purchase and the only hope for future progress" in curing diseases like cancer, mental illness, circulatory ailments (including heart disease) and hereditary defects.

"If this opportunity is neglected or minimized for shortsighted fiscal reasons, then, by the turn of the century, our nation must double the number of physicians, nurses, technicians, hospital beds and sanitaria and learn to live with the equivalent increment in human suffering. Grim prospect indeed!"

In general, the report recommended more and better fundamental understanding of reproductive physiology to help solve the population problem and broader stronger programs—hopefully in the National Science Foundation—to get the infant science of ecology off and running.

It pointed out that in health care, the impetus for delivery far outweighs that for new development; that basic research and

resulting development of new approaches to man's ills are being shortchanged by the need to provide for the fixed costs of a faulty inadequate delivery system.

NEW APPROACH WANTED

What is needed, he said, is a whole new approach to support—both in how it is done and how it is used, particularly in relation to education in the biomedical sciences.

The report says:

"We are convinced that the budget for these programs in the fiscal year 1971 seriously underestimates the magnitude of these needs and it is our hope that appropriations for these programs will be doubled over the course of the next five years."

The problem with such a recommendation, as Handler explained it, is that although the committee may recommend a doubling, "there is no yardstick . . . no magic numbers" on which to base the steady level of support for which all of science is crying.

And even if there were an acceptable yardstick, he added, "in the Office of Management and Budget, where they try to cast up the national accounts, science does not have a very high priority."

SCIENCE GROUP WARNS ON RESEARCH FUND CUTS

(By Victor Cohn)

Increasingly tight federal budgets for medical research and life sciences are crippling the nation's ability to halt disease and rescue the environment, a National Academy of Sciences committee warned yesterday.

Unless the country increases biomedical research, the group maintained: "By the turn of this century, this country must double the number of physicians, nurses, technicians, hospital beds and sanitaria and learn to live with the equivalent increment in human suffering. Grim prospect indeed!"

"What we mean by this," one committeeman said, "is that our population may grow by 50 per cent by the year 2000, but increasing pollution, an older population and increasing demand for medical care are putting a much faster growing load on our medical system. Unless we learn to eliminate some diseases, as we eliminated polio, we think we will have to double the system."

This gloomy assessment came in a 526-page report from 28 of the country's leading life scientists, headed by Dr. Philip Handler, president of the academy.

The committee was named four years ago to examine the state of knowledge and needs in fields such as botany, zoology, physiology and medicine.

What has happened, the group reported, is that biologists now stand at the exciting threshold of "understanding life on molecular terms," and thus, possibly conquering such diseases as cancer and diabetes and some of the causes of mental retardation.

But at the same time, the group said, biologists and medical scientists have suffered, in effect, a 30 per cent cut in real federal dollars in about the last five years.

Squeezed research budgets, the committee stated, "are now restricting research activities, morale among life scientists is falling and apprehensions are rising."

To cure the problem, the committee urged steady increases in recent on-again, off-again federal funds for research and training.

It said the Agriculture Department should join the National Institutes of Health and the National Science Foundation in the financing.

"The USDA's contributions to agricultural practices have been just enormous," Handler told a news conference. "But it has been parasitic on the rest of science" for basic knowledge.

The committee urged "serious consideration" of federal stipends to medical students, both to improve national health and to let youths outside the upper middle class get into medicine. It said medical graduates could repay the government by giving two years to a civilian "National Medical Service."

Among the specific recommendations:

Basic biomedical research should grow by 12 to 15 per cent a year above fiscal 1970's $692 million in federal obligations. "We don't even know the fiscal 1971 level yet," said an academy official. Total federal academic research obligations are expected to rise 7 per cent, but biomedical research less than that.

Hard-pressed universities should get "block support" grants so they can pay science faculties themselves, rather than have faculties constantly scurrying for research grants for their pay.

NIH graduate training programs alone should be doubled over five years, and students in some vocations should be graduated with simpler "doctorates" than the time-consuming Ph. D., requiring independent research.

There should be similar expansions to build new buildings and facilities—programs now almost dormant—and to buy or use instruments, including computers.

Health care research and health services should be expanded as separate programs, not at the expense of biomedical research, as at present.

"A central mechanism" in some existing agency should be established for education and research in control of runaway population growth—"a primary threat."

A National Institute of Environmental Studies should be established to study man's effect on "the deteriorating environment," in the same way the present National Institute for Environmental Health studies effects on man.

Yesterday's report follows academy reports of recent years on chemistry, physics and astronomy. All recommended "more." All accomplished little.

"I know that asking for 'more' benefits biologists too," said biologist Handler. "But I do believe that the products of science will be as useful to the national life in the future as they have been in the past."

OUR NATION, ITS PROBLEMS, AND ITS CRITICS

Mr. ALLOTT. Mr. President, during this Thanksgiving season, it is particularly appropriate to take a broad look at our Nation, its problems, and its critics.

Mr. Rex Howell, president of KREX in Grand Junction, Colo., has done just that in an editorial aired on November 15, 1970. As usual, his views are wise and profound.

I ask unanimous consent that the editorial be printed in the RECORD.

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

OUR NATION, ITS PROBLEMS, AND ITS CRITICS

This is Youth Appreciation Week.

It is appropriate that this occurs also at this particular time of the year when we pause to give thanks for ALL our blessings from the inexhaustible supply of the Almighty.

In previous broadcasts we have expressed our view that the bulk of American Youth represents our greatest asset, and our main hope for the future. Todays Youth is indeed tomorrow's Society.

And what kind of society is it going to be?

Before we condemn it in advance and declare some false premise that our youth have gone to the dogs, we will do well to look beneath the superficialities of this so-called mod era. On the surface, one might be forgiven should he judge a whole generation by the antics of a minute minority. To be sure, sometimes it looks as if "hippiedom" has taken over, and judging from what you see on your TV screens and read in the printed media, the youth of America comprise mobs of anarchists seeking only to destroy . . . who shout invectives and obscenities at everyone and everything . . . who hate their country . . . who ridicule belief in God . . . who live on a diet of drugs . . . and whose sole objective in life is the complete abandonment of moral principles, and a life of animal sexuality. Well, the idea is as ridiculous as some of the other tripe we have been spoon fed for so long.

Ninety percent of the youth of this nation . . . this area . . . this community . . . are clean in body and in mind. Upright young folks with a high sense of moral values, and an innate sense of decency. They seek an education that is meaningful and a religious life that is spiritually uplifting and fulfilling.

True, they are dissenters . . . they dissent with the elements who would deny them rightful access to their education . . . they are tired of campuses torn up by militant minorities . . . they are tired of pseudo liberal faculty members and administrators who have been the principle source of campus unrest and who have encouraged violence in the name of "academic freedom" . . . they are tired of the hypocrisy of government . . . the faceless bureaus which run over our lives . . . the permissiveness that has filled our communities with filthy motion pictures . . . indecent books . . . pornography of the most blatant kind . . . they are sick of such transparent actions as the so-called Commission for the Study of Pornography who spent months reading dirty books and spending millions of the tax payers money to reach the decision that it was all right and nothing wrong with filth! They are tired of the hypocritical politicians and equally so with biased news media . . . they are sick with disgust at the phoney fuzzy minded liberals who tell us that we need an anything goes society . . . While the adult population of America has slumbered along and bought one bill of goods after another, youth has probed for the facts. They don't believe the stuff we are being fed which says that communism is nothing to worry about, that freedom can be improved upon by the imposition of federal controls . . . that federal debt doesn't matter . . . that paying people not to work is a way to achieve human dignity.

To all these things the modern youth voices his disgust, and if he uses a four lettered word for the sake of emphasis, he can be forgiven . . . we feel like using them too!

Right now, at this Thanksgiving season, let's thank God for youth . . . let us be thankful for the young people who will take over from those of us grown tired and old, and who will carry on the fight for a decent environment . . . the preservation of our Constitutional liberties . . . schools of higher learning dedicated to an Improved society rather than a depraved society . . . churches which will once again be sources of spiritual uplift and guidance rather than mere political tools in the hands of opportunists . . . we look to these youth to fill tomorrow's pulpits . . . to serve on the benches of justice . . . to manage the affairs of our community with care and reason . . . to promote brotherhood and understanding.

In his introduction to the book the Ultimate Revolution . . . Walter Starche has this to say:

"The silence is broken. After centuries of loneliness and fear we are starting to listen to each other.

"Perhaps in our homes we are being pushed into listening to our young people because many of them are experimenting with dandies from our medicine cabinets powerful enough to transform them into strangers over night.

"Perhaps internationally we are being pushed into listening because nations are playing with toys that can blow the whole world to bits if we DON'T listen to each other.

"Listening is no longer a luxury . . . it is a necessity.

"Let's turn off the strident noise of the minority who make so much noise and listen to the quieter but more sensible voices of our real youth of the nation. They are our white hope for tomorrow!"

LITHUANIAN SEAMAN DENIED POLITICAL ASYLUM

Mr. PROXMIRE. Mr. President, all of us are aware of the unfortunate incident involving the Lithuanian seaman, who was denied his freedom by the action of the U.S. Coast Guard. This action was a denial of the human right of political asylum, which has long been a part of our American heritage.

Our failure to act was also an apparent violation of article 33 of the 1951 United Nations convention and protocol relating to the status of refugees, as well as a violation of the 1967 Geneva protocol on this subject.

This unfortunate occurrence happened during a period when the nations of the world are already confused about our position on human rights. Their confusion is a result of our failure to ratify the genocide and other major human rights conventions of the United Nations—after our leadership efforts in drafting these conventions. Our failure to grant the right of political asylum can only be confusing and tarnishing to our position in the world in regard to our position on basic human rights. This is most unfortunate.

President Nixon has ordered an investigation of the incident involving the Lithuanian seaman. I am hopeful that the investigation will clear the air and prevent such a mistake from recurring. However, this does not alter the confusion felt by many nations regarding our position on this issue.

It is not too late to clear up the confusion. A step in this direction would be the ratification of the Genocide Convention, which was just reported to the floor of the Senate by the Committee on Foreign Relations. By ratifying this convention, we could begin to clear up the confusion surrounding our position on human rights. Coupled with the President's investigation we would then be on record supporting the basic rights of all men. I am hopeful the Senate will take affirmative action on the Genocide Convention in the very near future.

FAMILY ASSISTANCE PLAN

Mr. GRIFFIN. Mr. President, the short days of December are growing shorter. Congress now has less than 3 weeks left to complete action on a number of "must" bills.

And of the "must" bills which remain, none is more important to the administration—none is more urgently needed than President Nixon's family assistance plan.

It appears, finally, that we may soon have an opportunity to pass upon what the President has called "the most comprehensive and far-reaching effort to reform social welfare in nearly four decades."

The proposed legislation was aptly described and explained by HEW Secretary Elliot L. Richardson in a statement before the Finance Committee on July 21, 1970. Although there has been some shift in emphasis is some areas since last summer—for example, the administration is no longer pressing for enactment of social service amendments this session—the Secretary's statement still remains an excellent exposition of the need for welfare reform and the administration's proposals.

I ask that the text of Secretary Richardson's remarks be printed in the RECORD.

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

STATEMENT OF ELLIOT L. RICHARDSON

Mr. Chairman, and members of the Committee: I am pleased to have the opportunity to testify today on behalf of the Family Assistance Act of 1970, H.R. 16311.

As the President has said on a number of occasions, this program is the highest priority domestic legislation of this Administration. It embodies a fundamental reform of a badly designed, ineffective, and expensive government program—the ramshackle structure generally known as "public welfare."

This Administration's analysis of the current welfare system began without preconceived notions or predetermined remedies, beyond the conviction that the welfare programs already on the books were not working. Rather than helping the poor to move out of poverty, they had perpetuated poverty and encouraged dependency.

The sole directive given to the analysts charged with reexamining the welfare system was to focus on the problems inherent in the "custodial approach" to poverty. If the system was found to be badly in need of repair, or if it was to be completely replaced, then the President wanted particular attention paid to the possibility of constructing a more "remedial approach" to welfare. If it were at all feasible, he favored a system directed toward encouraging the natural instinct of people to help themselves to become contributing members of our economic and social system.

Guided by this general approach, the Administration's analysis of the problem began a few weeks before the inauguration, with the appointment of the President's Transition Task Force on Welfare.

After the inauguration, a special subcommittee of the Urban Affairs Council, chaired by former Secretary Robert Finch, continued the principal analysis. That examination of this very complex field continued unabated through numerous meetings of the Urban Affairs Council and ultimately involved dozens of experts in and out of government.

The process was inductive, not deductive. The reform principles around which the Family Assistance Plan was originally designed were shaped to overcome the specific deficiencies revealed by careful study of the current system. These principles, in turn, have determined the operational features of the Plan. The whole was refined and strengthened through the patient and painstaking reexamination and reinforcement which it received at the hands of the House Committee on Ways and Means. I look forward to working with your Committee to strengthen and improve the Plan still further.

To this end, Mr. Chairman, I would like to review quickly the process that has led us to this historic stage in the Nation's development of a fair and adequate program of family assistance.

A. THE FAILURE OF THE CURRENT WELFARE SYSTEM

The first conclusion compelled by the Administration's analysis of the current system was that it is not a system at all, but a confused clutter of many systems. From this has flowed disparity, inequity, and inefficiency.

1. *Geographic inequities*—The "Aid to Families with Dependent Children Program" is in reality 54 different programs in 54 different jurisdictions. It provides no national standards for benefits or eligibility ceilings. AFDC payments vary from an average of $46 per month for a family of four in Mississippi to $265 for such a family in New Jersey. The disparity in payment levels is aggravated by complicated State-by-State variations in criteria for eligibility and methods of administration. Each State has its own prescription of need standards, assets, tests, incapacity tests, and requirements for school attendance and the age of children who can receive benefits. Furthermore, the day-to-day administration of the program has varied widely from State to State and locality to locality in terms of equity and responsiveness to the needs of recipients.

To make matters worse, this galaxy of welfare systems has uncontrolled access to Federal resources and their allocation. Each State establishes its own benefit levels, and the Federal Government has an open-ended obligation to provide whatever funds are necessary to match them.

The result is not only a potentially unmanageable drain on Federal resources, but also the creation of a system in which the Federal Government is forced into the position of discriminating sharply in its treatment of equally-needy families in different States. In those States in which the benefit level and, consequently, the Federal contribution, is low, this inequitable treatment has proved costly in ultimate terms. We have had to spend vast sums of money for remedial, medical, nutritional, and educational programs in attempts to rectify the unfortunate situation which the low level of funding in welfare has produced.

2. *Complex and Inefficient Administration*—The paperwork and red-tape associated with welfare have become notorious. Elaborate budgets of need are constructed, entailing an item-by-item investigation of the family's situation. State standards of need often bear little relation to actual payments, and complicated formulae using rateable reductions and maximum payments are applied to calculate actual benefits. Minute adjustments are made to reflect changes in the composition of the family and the ages of its members, or as special needs arise. The resulting paperwork inundates social workers. The baroque administrative organization is fraught with error, and is largely incomprehensible to recipients and the public alike.

3. *Services*—The complex, localistic, and punitive character of the present welfare system destroys, in large part, the ability of the social worker to provide badly-needed services to the recipient family. Not only are social workers overburdened with paperwork, but they are also forced into the role of police-

men and guardians of the public purse—a role which has often been felt to be antagonistic to the client. This prevents social workers from becoming recipients' counselors. Thus most recipients are deprived of opportunities to talk with social workers and benefit from their professional training and skills.

4. *Inequitable Treatment of the Working Poor*—The most striking defect of AFDC, however, and the reason that it cannot be reformed simply by adding national standards or streamlining administration, is its artificial restriction of eligibility. Since 1935, AFDC eligibility has been confirmed by the uncritically-accepted notion that families headed by a full-time male worker do not need assistance. AFDC was accordingly designed for families headed by women and shaped by the belief female heads of households could not and should not be required to work.

The unfortunate truth, of course, is that the assumption on which AFDC rests—that the income of full-time workers is by definition adequate—is simply not valid for large numbers of families. In 1968, 39 percent of the poor families with children in this country were headed by full-time workers. Their poverty is seldom the result of a defect of character or a failure to try. It is rather the result of the inescapable fact that large numbers of jobs, for a variety of economic reasons, just do not pay an adequate wage—especially for persons with large families.

This Committee recognized in its 1967 work incentive amendments the importance of supplementing the income of working women. The so-called "30 plus ⅓" formula is the law today. But in no State is any Federally-assisted welfare available to families headed by full-time working men who earn poverty wages—the working poor. While these families may be in equal financial need with families who are helped, they are not entitled to receive federal public assistance under current law.

This is the heart of the problem of the working poor. AFDC eligibility involves exclusions which cannot be morally or rationally sustained. We have produced a system which reaches only 34 percent of the poor children in the country. We have backed ourselves into a situation in which we will help men who don't work (under the AFDC-Unemployed Fathers program), but we cannot help those who do work.

Under current law, it is easily possible for a man on welfare who does not work at all to be economically better off than a man who works full-time. But I believe that every man who is physically able to work should be required to do so, and that it should be in his interest to do so. Under present law, as a result of the 1967 amendments, AFDC–UF contains a work requirement. If a man complies with this requirement, however, he very often will be economically worse off than if he manages to evade the law. Thus we are telling him to penalize himself financially by taking full-time work. This is a greater sacrifice than we require of even the taxpayer in the highest bracket.

This inequity inflicted on the working poor is not rare. In 1968, over one and one-half million families—consisting of about 7.8 million persons—were headed by full-time workers and were still in poverty. Many of these people lived next door to welfare recipients who were economically better off than they were.

This unwise and unjust public policy has had predictable results in terms of social tension. First, an understandable discontent has been generated among those who are excluded and who see others no worse off than they being assisted. Second, ominous racial overtones have developed, since current AFDC recipients—those who are helped—are about 50 percent nonwhite, while the working poor—those who are excluded—are about 70 percent white. This country can no longer afford to have one of its most important and needed anti-poverty efforts viewed, by many of its citizens, as a divisive, unfair, and arbitrary failure. Such a view does not help to bring us together, does not promote understanding among people, and does not help to restore public confidence in the wisdom of our social policies.

5. *Work Disincentives.*—A further consequence of the exclusion of families headed by working men from AFDC is that it produces wrong-way work incentives—incentives which encourage less work, not more. We have created a program which penalizes rather than rewards work, a result out of character with our cultural heritage. There are, in fact, three different types of disincentives to work built into AFDC, as Secretary Finch pointed out in his testimony on April 29.

First is the problem created by the 1967 amendments as they relate to State need standards: A working woman is not eligible for welfare support, under present law, if her earnings are in excess of the State-defined need standard. However, a working mother who happens to be earning less than the need standard becomes eligible for supplementation of her wages even beyond the need standard through application of the "30 plus ⅓" earnings incentive formula. Once on welfare, this woman could easily have a total net income of earnings plus welfare which is higher than the income of the woman who has only earnings. In some states a mother of three children can earn as much as $9,000 a year and still qualify for welfare supplementation by virtue of the "30 plus ⅓" rule and the other exemptions (work-related expenses, health insurance, and mandatory payroll deductions, to mention three) that States may allow in addition to the Federally-mandated "30 plus ⅓" rule.

Second, the current welfare program has a built-in incentive for men who are employed part-time to keep their work effort limited and not seek full-time employment. Under the AFDC-Unemployed Fathers program, only families headed by fathers working no more than 30 hours per week (or 35 hours, at each State's option) are eligible. Thus, a father on welfare is better off working, under the "30 plus ⅓" formula, only if he doesn't work more than 30 hours per week. If he works more than that, he is suddenly no longer "unemployed" under the regulations, and he loses the supplementation provided under the "30 plus ⅓" formula. This measurement by hour means that men are often worse off working full-time than they would be either not working at all, or working part-time and receiving a welfare supplement. Nor is the problem solved by simply changing the regulation to decrease the number of hours used to define unemployment, for that only moves the notch to a lower point on the earnings curve, leaving men with an incentive not to seek even part-time jobs which entail more than the permissible number of hours of work.

Third, a work disincentive is produced by the exclusion from AFDC of male full-time workers, which I have already described. Many of these men would fare better on welfare than they do by working. In fact, any male head of a four-person family earning less than $1.85 per hour in a full-time job in Illinois, or $2.16 per hour in Massachusetts, or $2.23 per hour in New York, would have more cash if he were on welfare. Such a work disincentive, which is the result of a public program, rather than of any free-market forces, is not justified by any countervailing social policy that I can discern.

6. *Family Breakup Incentives*—The exclusion of the working poor from Federally-aided assistance has yet another perverse effect—encouragement for families to dissolve, or for couples never to marry. In situations in which a full-time working man is not making as much as his wife or the mother of his illegitimate children could receive in welfare benefits, the couple is better off financially if the man leaves the home.

The family stability problem, to be sure, is very complicated. It has many causes rooted in the complex social problems of industrialization and urbanization. We do not understand all the intricacies of family dissolution, nor do we have data that show a definite cause-and-effect relationship between welfare and family instability. But we do know that over 70 percent of the fathers of families currently on AFDC are "absent from the home," and that the present welfare system provides a prima facie incentive for break-up. Our current welfare law clearly discriminates against those intact, poor families who are making substantial efforts to work themselves out of poverty. This seems vicious and irrational. Socially, it is a self-defeating policy—one which the poor themselves see as exacting the pound of flesh of family break-up as the price for income supplementation.

7. *Adult Categories*—The present system also produces severe problems for the adult assistance categories, although the crisis here is more muted. The same geographical inequities and administrative complexities exist for these categories as exist for AFDC. The adult programs also contain other features which are of more serious import.

In many States, the programs of Old Age Assistance, Aid to the Blind, and Aid to the Permanently and Totally Disabled are funded at truly pitiful levels. Most of the recipients in these categories cannot be expected to work or receive substantial assistance from relatives or friends, but the system nevertheless allots them only tiny sums.

Also, the States control eligibility rules and administrative procedures, resulting in anomalous variations in assets tests, rules on relatives' responsibility, and work incentives from State to State.

B. THE BASIC PRINCIPLES OF FAMILY ASSISTANCE

Confronted with the glaring deficiencies of the existing welfare "system," the President concluded that nothing short of fundamental structural reform would do. He could not in good conscience propose new patches on a jerry-built system defective to its foundation.

I want to emphasize again that this Administration did not enter office determined to put into effect the specific kinds of welfare reforms which we have proposed. Neither the philosophy of the President nor our currently restricted budgetary situation would have permitted us to propose such revolutionary and expensive legislative initiatives unless we were convinced that they were inescapably necessary.

The reform principles underlying Family Assistance are thus in every instance traceable to the foregoing analysis of what is wrong with AFDC. I have elaborated those wrongs in the hope that the Committee would see that the recommended solutions flow from the basic defects of current law. I can summarize our cornerstone principles as follows:

1. *Uniform national standards* through establishment of a floor under welfare benefits, requirement of a new financial division of labor between Federal and State levels of government, and national eligibility rules;

2. *More efficient administration* through simplified application and benefit calculation procedures, separation of services from cash benefits, consolidation with other related programs, and Federal administration;

3. *Strengthened work incentives and requirements* through the elimination of "income notches," expanded training and day care, and mandatory work registration:

4. *Inclusion of the working poor* to achieve

basic equity and anti-poverty effectiveness; and

5. *Reform of adult categories* to achieve more equitable and efficient programs.

I would like to discuss each of these fundamental points briefly before taking up the central question of the working poor in greater detail.

1. *Uniform National Standards*—Family Assistance will replace the 54 different State and territorial AFDC programs with a single program for families. We would also substitute a single integrated adult category system for the more than 150 different programs of aid to the aged, the blind, and the disabled.

We must recognize that Americans are mobile people, and that problems in one State have effects elsewhere. Poverty and welfare are national problems requiring national solutions. Foremost in any such national solution must be an effort to assure that citizens who live in different States do not receive grossly different treatment at the hands of their governments. We must ensure that a minimum level of welfare support exists nationwide, for the problems of low-paying States like Mississippi today are the problems of high-paying States like New York—and indeed, of the whole country—tomorrow. Family Assistance establishes such minimum support levels; $1600 per year (plus about $860 in food stamps) for a family of four, and $110 per month for individuals in the adult categories.

But promulgation of a nationwide minimum benefit is not enough, because low-paying States could abolish their family program, rather than raise payments to the Federally-mandated minimum. To avoid this problem, Family Assistance ensures the provision of a minimum benefit by full Federal financing of that portion of the payment. The States, assisted by 30 percent Federal matching up to the poverty line, can then assure more adequate total benefits by supplementing the minimum payment.

This two-tier system has a further advantage over AFDC: it limits the present open-ended Federal funding commitment. The Family Assistance Plan returns to Congress the control over spending which it should rightfully have. The basic payment to a family of four is limited to $1600 per year in Federal funds, and no matching is provided for above the poverty line in supplemental payments. The States are protected in this arrangement through a "hold harmless" provision, which assures that they will not be required to spend more on welfare in the future than they spend in fiscal 1971, adjusted for cost-of-living increases. Many States will, in fact, experience substantial fiscal relief.

Finally, the national uniformity provisions require the establishment of a single set of eligibility rules and program standards for all States. With a single major exception—variation in levels of State supplementation—we will have an income support system which treats citizens in fundamentally the same manner no matter what States they are in.

2. *More Efficient Administration*—National uniform eligibility rules making possible another vital reform: simplification and streamlining of the notorious welfare paperwork and administrative morass. Family Assistance terminates the present practice of basing benefits on minute investigations and computations of family budgets. Eligibility for aid would be determined on a simplified basis, which would include crosschecks of earnings data and sampling of recipients' reports as protection for the system.

Strong incentives are provided for States to contract with the Federal government to administer the supplementary payments, thereby achieving economies of scale on a nationwide basis. Moreover, our latest amendments would allow States to contract with the Department for consolidated administration of all public assistance cash programs, including food stamps and Medicaid eligibility determinations.

3. *Social Services*—Although I will make a separate presentation on the Administration's proposed social service amendments this Thursday, I would like to touch on them briefly now. Family Assistance would provide a new system for clients to be referred to State and county social service agencies from which they could obtain needed work-enhancing social services and counseling. These amendments require a complete separation of welfare eligibility functions and social services delivery, and incorporate a major program expansion in the area of foster care and adoptions.

Particularly important, in my estimation, is the proposed part B of the new Title XX. It provides that if a Governor submits a consolidated plan which incorporates his social service program and one or more other HEW service programs, he may transfer up to 20 percent of the total funds from any one included program to another. This permits the States, for the first time, to shift Federal service funds among program categories to better meet their own State and local needs and priorities.

We believe that the new programs will revolutionize the current social services situation. The social worker will no longer be the policeman or the paper-ridden clerk, but will, in many places for the first time, be able to spend most of his or her time and energy counseling, advising, and generally assisting clients.

4. *Inclusion of the Working Poor.*—As the members of this Committee know, important issues are the most difficult ones. We think the single most important issue which must be faced if we are to have meaningful welfare reform is whether an income supplement for the working poor is essential. This is a difficult question for some of you. Many arguments support a negative answer. I believe, however, that an affirmative answer to that question is inescapable. Four principal considerations seem compelling to me:

(a) *The need to provide equity.* First, very simply, coverage of the working poor eliminates the harshest inequities of the present system. If we require that men must work to be eligible for assistance, how can we in good conscience fail to ensure that full-time workers are better off financially than people who don't work? Failure to supplement the incomes of full-time workers can make it profitable for them not to work. A system which encourages evasion of work requirements is unjust and counterproductive. After carefully weighing the pros and cons, we are convinced that to achieve equity in the system and for our low-income population, we must include the working poor in Family Assistance.

(b) *Reinforcement of the free market system.* Second, we believe that granting public income supplements to low-wage workers is the only effective way of dealing with the poverty and inequities to which this group is subject while at the same time preserving a free market system. Our economy creates unparalleled opportunities for workers, but simultaneously creates disadvantages for a minority of workers. A significant number of jobs at the low end of the wage scale is an unavoidable result of a free market economy in which wages are set primarily by worker productivity and competitive forces.

From this perspective, it is not unreasonable for the government to assume greater responsibility for providing those persons who are bearing some of the brunt of our economic vitality with more income protection. Far from undercutting market incentives, a well-designed program of income supplements for the working poor bolsters the free market economy.

(c) *Work Incentives.* Third, quite aside from arguments based on equity, it is impossible to establish a proper system of work incentives and at the same time exclude the working poor. This Committee has been properly concerned that a consistent set of work incentives be designed, and our latest proposals are substantially directed toward that goal. Inclusion of the working poor in the cash maintenance and Medicaid programs—they are already included in the food stamp and public housing programs—is necessary to ensure that people will always be better off by working more.

(d) *Antipoverty Effectiveness.* Fourth, we should extend income supplements to the working poor to attack fundamental problems of poverty. As the Committee knows, 39 percent of the poor live in families headed by a full-time worker. At the same time, AFDC reaches only 35 percent of the poor children in the country. Family Assistance, on the other hand, will reach 65 percent of all poor people and 100 percent of all poor families with children. FAP payments to working families with children will move almost 2 million persons across the poverty line, and an additional 500,000 persons across the low-income line.

This Committee is also familiar with the effects of poverty on family life, personal achievement, and social stability. We know that low incomes critically affect the diets families purchase, and that malnutrition among children produces mental retardation and poor school performance. This undercuts efforts to upgrade and enrich their education.

Just as our various manpower programs should be viewed as investments in human resources, the Family Assistance Plan should be seen as an investment in the future of our children.

In recent years, we have expanded family counseling programs, enriched compensatory education, and instituted rehabilitation programs for criminal offenders and juvenile delinquents at high per capita costs. These efforts are greatly needed, but they will be less effective than they might otherwise be unless we also take greater and more direct actions to increase the income of the poor and the children of the poor.

5. *Strengthened Work Incentives and Requirements*—As the Committee knows, no principle in the Family Assistance Plan is more important to this Administration than strengthening the work incentives of the current welfare system. I have already mentioned that AFDC involves three critical "income notch" or work disincentive problems. Family Assistance as modified by our amendments transmitted on June 11 completely eliminates all three of these problems.

Moreover, those amendments and the commitments which accompany them will go still further, as I will explain later, and eliminate the notch problems caused by other programs, such as food stamps, public housing, and Medicaid.

Finally, to make the work incentives and requirements effective, we have included a comprehensive program of manpower training and child care, with over $600 million in additional funding. We plan to train thousands of FAP recipients each year, teaching them new skills and upgrading old ones. We also plan to provide day care for every FAP family which needs it, both while its breadwinner is engaged in training and after he has taken a job.

Building on the initiatives which this Committee undertook in 1967, the Family Assistance Plan relies on both incentives and a strengthened work requirement. Recipients must register for and accept work or work training to receive FAP benefits. If they do not comply with this requirement, they will lose $500 per year in benefits. I want to reemphasize that each and every able-bodied adult recipient, with limited ex-

ceptions strictly defined in the bill, is required to enter training or employment.

6. *Incentives for Families to Remain Together.*—Because we have included the working poor in our income supplementation, improved work incentives, and established penalties and requirements which are consistent with the basic philosophy of income maintenance, we believe that we have substantially reduced—and in many cases eliminated—the incentives for families to break up if they wish to supplement their incomes with public assistance.

Let me again emphasize that determining cause and effect in this area is difficult. But I think we can all agree that the *prima facie* economic pressures on intact, poor families would be greatly reduced by Family Assistance cash benefits and the supporting programs of manpower training, day care, and social services.

7. *Adult Categories.*—We have improved the adult categories in two significant ways. First, we have provided a national set of eligibility standards and a national minimum level of income for all recipients of these categories of aid. This will mean a great deal in simplifying administration, increasing dignity of the recipients, and eliminating much of the poverty which now plagues these people. I might add here that under this bill, an aged couple's minimum income from all sources would be greater than a poverty level income, and that a single aged individual's minimum income would be more than 80 percent of the poverty level.

The second major improvement in the adult categories is establishment of nationwide eligibility rules, following the same principles as Family Assistance, to replace the present complex of State-by-State variations.

C. JUNE 11 AMENDMENTS

Mr. Chairman and members of the Committee, I have tried to set forth the essential elements of the analysis which led this Administration to propose the Family Assistance Plan. Further intensive discussion with the House Committee on Ways and Means produced the bill which was the subject of hearings before this Committee which began on April 29th. Those hearings focused attention on the inter-relationships between the Family Assistance Plan and other programs providing assistance to poor people—Medicaid, food stamps, and public housing. The fact that the interaction among these programs had the effect, in some instances, of undercutting incentives for work and self-support was brought into sharp relief. This Committee and the Department of Health, Education, and Welfare accordingly agreed that the Administration would reexamine the Family Assistance Plan in order to devise, if possible, means of eliminating these disincentives. The result was the Administration amendments and proposals forwarded to you on June 11th. In developing these proposals, we have tried to reinforce the principles derived from our earlier studies, and I think we have succeeded.

1. *Family Health Insurance Program.*—As the Committee knows, the current Medicaid program has serious defects which complicate Family Assistance:

Families among the working poor which are headed by males are typically excluded, while families headed by females and non-working males are included. The result is that working people are less well off than those on welfare, and many families are better off if the father leaves the home.

Welfare recipients suddenly lose entitlement to Medicaid coverage once they work their way off the assistance rolls. The result is an income notch, or a strong disincentive to work.

Benefits and eligibility rules vary widely and inequitably from State to State.

We have not at this time been able to perfect in its entirety a program to replace Medicaid for the population covered by the Family Assistance Plan. We have, however, committed ourselves to a fundamental reform along insurance lines which will:

Cover all poor families with children, bringing equitable treatment to the working poor;

Require a modest contribution from participating families, which will be scaled to increase with income so that a work disincentive "Notch" is not created; and

Provide a Federal floor of medical services nationwide which States could supplement in a manner similar to that under Family Assistance.

This legislation will be submitted to the Congress for its consideration no later than February, 1971. Merely because this proposal is not yet developed in specific is no reason, of course, to delay action on the Family Assistance Plan—a reform which is needed now and stands on its own feet.

2. *Food Stamps.*—The present food assistance programs not only create wasteful and unnecessary administrative overlap with the Family Assistance Plan, but also produce income notches and work disincentives. This problem is intensified because food stamp benefits do not smoothly decline to zero under the current schedule. Thus, a recipient can still lose more of his food purchasing power than he gains from increased earnings, as his wages rise above the eligibility point.

The Administration proposal to correct these defects would:

smooth the stamp schedule by administrative action so that no work disincentive notch remains;

simplify administration by permitting Family Assistance recipients to "check off" on their applications the cash to be applied for the purchase of stamps, with cash and stamps (or a voucher for stamps) sent to them in one transaction; and

unify administration at the Federal level by a reorganization plan, shifting administration of food stamps from the Department of Agriculture to the Department of Health, Education, and Welfare.

3. *Public Housing.*—The public housing issue arises from the fact that this locally-administered program has, in some cities, provided subsidies which have not been structured to decline as personal income rises. A family may suddenly lose entitlement to its substantial in-kind benefits at the eligibility ceiling, and the loss may more than offset the gain in earnings. (This is not a numerically substantial problem in connection with Family Assistance; only about six percent of recipients throughout the country will occupy public housing.)

The Administration had already recognized this problem, however, and proposed a solution in the Housing Act of 1970. Under that bill, a family would pay 20 percent of its net income under $3500 and 25 percent of its income above that amount, up to the fair market rental charge, as rent. As its income and rent increase, the housing subsidy would steadily decline to zero, without any sudden termination of benefits, and without a work disincentive. A draft of this provision has been forwarded to this Committee for its consideration.

4. *Unemployed Fathers Provision.*—During the spring hearings, the Committee noted that under the House-passed bill a work disincentive and equity issue regarding the AFDC-UF category remained. Families headed by males who worked full-time would receive only the Federal Family Assistance benefit, while those in the "Unemployed Fathers" category (that is, male heads of families who are unemployed or working less than 30 hours per week) would receive both Family Assistance and State supplementary benefits, an amount equal to what they receive under current AFDC law.

The Administration has proposed eliminating this problem by abolishing the Federal matching assistance for recipients in the Unemployed Fathers category—about 90,000 families out of a total AFDC caseload of almost 2 million families. As a result, all male-headed families would be treated alike, and an unbroken set of incentives would apply. We realize that there will be some reduction in benefits for the 90,000 male-headed families currently on AFDC-UF. However, the basic Family Assistance and food stamp package of $2460 for a family of four, plus a subsidized health insurance plan, represents a substantial gain for families with unemployed fathers in the 27 States without an Unemployed Fathers program now.

The potential loss to some recipients makes this feature one of the most controversial of the changes. I would therefore like to explore alternative options we considered with respect to the Unemployed Fathers program, and explain why we rejected them as unsatisfactory.

The first solution we considered was redefining eligibility by reducing the ceiling on the number of hours one could work and still receive Family Assistance. Lowering the hour limitation does not eliminate the notch problem, however—it only moves the notch to a lower income level.

Another solution we considered was mandating extension of State supplementation to the working poor. This would eliminate the differential in treatment between part-time and full-time male workers, but would cost roughly one billion dollars in fiscal year 1971 alone. Neither the States nor the Federal government now has the resources to take this step.

D. CONCLUSION

We believe that these amendments make related welfare programs supportive of Family Assistance, and help consolidate the real gains in equity, work incentives, anti-poverty effectiveness, and national uniformity made by Family Assistance. These are standards which the public rightfully expects the policies and programs of its Federal Government to meet.

Our proposal will produce many new and desirable features which the present system either lacks or contains in inadequate measure.

First, it will provide a unified system of eligibility determination, referral, services, and incentives for the recipient. The services will include counseling, manpower training, child care, and medical care. For the first time in our history, all of our poor children and most of our poor adults will be treated as whole human beings, rather than as parts of human beings eligible for only categorical benefits.

Second, and most important, is the preventative thrust of the entire program. Our poor people will get the cash and service benefits they need most, when they need them, and where they need them. This will prevent untold misery and despair and save untold billions of dollars as today's children of poverty grow up.

I have tried to explain and recreate for you some of the reasons we have made the decisions on the welfare reform which is before you today. We have presented, for your consideration, a program designed by reasonable men to meet a critical series of problems. It is, to be sure, not perfect. But then, it has been designed by men, and we are not perfect.

The problems demand the best that is in us, and we have given this issue our best efforts. I am convinced of the need for an income maintenance system to replace the current nonsystem.

We must remember that this system cannot solve the problems of severe labor dislocation, inadequate coverage of other social insurance programs (such as unemployment insurance and Social Security), or inadequate education. This program can only be expected to give us a new perspective from which to examine current and future welfare problems, and a new foundation upon which to build.

The issue of income maintenance and Family Assistance is exceedingly vast and complex. Finding solutions within it is an exciting challenge with great implications for the future of this Nation's poor, and indeed, of us all, I am prepared, Mr. Chairman, to work throughout this summer with the Committee and its staff to help draft a bill that improves the current welfare law. I pledge to make every resource of the Department of Health, Education, and Welfare available to help the Committee meet the challenge.

THE NEED FOR QUALITY CHILD DEVELOPMENT PROGRAMS

Mr. MONDALE. Mr. President, there is an increasing awareness throughout the country of the lack of adequate day-care services. Numerous articles have been written about how there are only a little over 600,000 licensed day-care spaces to serve the 4 million children under age 6 whose mothers work, as well as untold millions of other preschool children who could benefit educationally and nutritionally from quality day-care programs.

A particularly good review of this problem, entitled "Day Care: Demand Outrunning Growth," written by Nancy Hicks, was published recently in the New York Times. I ask unanimous consent that the article be printed at the conclusion of my remarks. Besides reviewing the need for day care, and describing the existing programs and proposals for day-care services, this article highlights the basic policy issue in the day-care child development field. It said, quite correctly, that—

The most basic decision ahead is whether day care will be custodial care or a form of early education.

It is my firm belief—reflected in the bill I introduced last year to expand and impose Project Headstart—that the greatest need for child care is to establish programs that provide the health, nutrition, and educational services that will permit millions of young children to reach their full potential. We know right now that the lack of proper nutrition, health care, and educational stimulation is crippling the potential of millions of American children. Child devlopment experts such as Dr. James McVicker Hunt have estimated, for example, that proper environmental stimulation in the early years can increase a child's IQ by as many as 30 points. Creative research efforts like the infant research project here in Washington, D.C., have shown that proper educational stimulation can present a 15- to 20-point IQ decline among ghetto youngsters that might otherwise occur.

I am convinced that we need to expand our day-care services, but that these services must emphasize education, health, and nutrition components, or we will be failing our children and our country. The creation of inexpensive, sterile, institutionalized babysitting centers could be a tragic mistake.

The PRESIDING OFFICER. Is there objection to the unanimous consent request by the Senator from Minnesota?

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

DAY CARE: DEMAND OUTRUNNING GROWTH

(By Nancy Hicks)

Universally available day care for American children is inevitable, experts in the field say. They note that women, who make up 38 percent of the work force, want and need it, and that many politicians back it.

But widespread disagreement over goals and over methods of implementation is hindering planning. This, in turn, means that day care is not becoming available at nearly the rate needed.

There are more than 11.6 million working mothers in the country today, more than 4 million of these with children under 6 years old. However, only 640,000 licensed day care spaces are available. More than one-third of these are privately run.

"Some mothers have always worked and arranged to have their children cared for," said Jule M. Sugarman, chief of New York City's Human Resources Administration, which supervises the city's day care programs.

"But people often live with whatever setups they can arrange. As soon as something else comes along, they take it. This is what is happening with day care," said Mr. Sugarman, the former acting head of the Office of Child Development of the Department of Health, Education and Welfare.

But it is becoming obvious to educators, psychologists and social scientists that before any major expansion comes about, serious problems must be overcome. The most basic decision ahead is whether day care will be custodial care or a form of early education.

Ideological leaders in the field have decided that day care is to be more than adult supervision geared, for example, to merely making certain that children do not stick their fingers in electric sockets while Mother is working. If these leaders' goals are realized, then expansion will have to be slow and expensive.

It will require the training of a cadre of personnel to teach children and to work with parents. Centers would have to be built or renovated. A "quality program" also would have to provide meals, medical services and research units that would study the effects of group education on very young children.

Using the current average Federal expenditure for early childhood programs, it is estimated that this combination of services would cost $1,600 a year a child. This compares with an annual school cost of $870 a year a child, according to the latest figures of the National Education Association.

Even with supportive services and sound educational programs, some psychologists fear, day care for the very young might become impersonal and institutionalized.

Some earlier studies of child-rearing environments—including those conducted by Dr. Eleanor Pavenstedt, a Tufts University psychoanalyst, on failure-to-thrive infants—have shown that these characteristics retard development.

But against these financial and ideological concerns is a pressing need.

A Department of Labor study in 1964 showed the arrangements that 6.3 million working mothers made for their 12.3 million children under age 14.

MANY WITH RELATIVES

Half of the children were cared for in their own homes, usually by another relative. One third were cared for in someone else's home. Thirteen per cent were watched by their own mothers during work, as might happen with a proprietor of a small store. Close to one million children, or 8 per cent, cared for themselves. These are the so-called "latch-key kids" who wear their house keys around their necks. Only 2 per cent of the mothers were able to find group day care centers.

The disparity between supply and demand has brought together traditionally warring factions in politics and education and set in motion a day care movement. Workers for women's rights are petitioning employers to begin on-premise centers for their children. Community groups are meeting at night to plan all-day and after-school centers in their neighborhoods. Mothers are setting up cooperative babysitting arrangements aimed at teaching the child as well as providing custodial care.

More organized efforts are being waged by groups like The Day Care and Child Development Council and the National Council of Negro Women, both in Washington.

Legislators have introduced a variety of bills into Congress to fund expanding services.

Economists and social scientists offer some specific reasons why day care has become such a popular issue. They include the following:

The dramatic increase in the number of working mothers, which has created a day care need that has outpaced the ability of society to handle it through informal arrangements. Forty per cent of mothers work today, compared with 1 per cent in 1940, according to Department of Labor figures. These figures are expected to increase by 30 per cent more by 1985.

The recent acceptance by industry and husbands of the movement of women out of the home and into the labor force.

Changes in the American family which used to be large and centrally located but which today is so widely spread around the country that the mother often needs day care, sometimes for illness or family crisis, aside from the workday applications.

HEADSTART AS MODEL

Estimates that in the next few years, one child in 12 will grow up in a family with only one parent, because of divorce and other factors.

Acceptance by mothers of reports alleging the importance of very early education. This has particularly created support by centers that stress teaching.

Within this educational framework, there are several existing programs that could provide models for larger programs.

Head Start, the Federal pre-school program for poor children, provides many all-day educational settings that would equal day care for a working mother. Boards of education in localities have pre-school programs that serve the same purpose.

Departments of social services offer day care for working mothers under Title IV of the Social Security Act of 1962, which provided funds for these centers.

More than 120,000 children are being cared for in what are called Family Day Care Homes, which are sponsored jointly by local social services agencies with money from the Federal Government. Under this arrangement poor mothers are taught to care for children by educational specialists who provide them with equipment in their homes and "lessons" to teach the children. In this way, that mother becomes a skilled worker in addition to providing a service.

While the above are all public programs, voluntary and private groups provide variations on the same themes.

The Office of Child Development has assumed the job of looking at the various programs and setting the standards for what day care in America should be.

ZIGLER FAVORS CHOICE

Its director, Dr. Edward Zigler, one of the original Head Start planners, likes the varied approach now being used because it gives

mothers a choice of settings. As a back-up, however, the Office of Child Development is testing some of these approaches in 32 parent-child centers developed by several universities.

"We really can't set up more day care overnight," Dr. Zigler said. "We have neither the staff nor the facilities to do so. We must expand existing frameworks. The Head Start orientation is good. A giant step would be the passing of the family assistance plan."

This embattled legislation is the President's plan to reform the nation's welfare system. It includes day care expansion. While many educators oppose the compulsory work provision of the plan, they see administrative commitment to 450,000 new day care spaces as a first step in expanding services.

"It is absolutely mandatory to develop a new cadre of people whose training is directed at raising children," said Dr. Zigler. "The Russians have them. They call such people 'upbringers.'"

The Russians, Israelis and Swedes have for years had mass day care programs for working mothers. While cultural differences have made it impossible to transfer their programs directly to American situations, they have shown that such widespread programs are possible to operate.

There is a consensus among the educators and economists studying the situation that if day care is going to work on a universal basis, the Government is going to have to pay for the majority of it simply because the size of the problem is larger than the private sector's ability to solve it.

A number of Congressmen have introduced bills that would create day care in addition to the family assistance plan.

Representatives John A. Brademas, Democrat of Indiana, and John R. Dellenback, Republican of Oregon, have introduced a bill that would repeal Head Start and hand control of operations over to a state agency that would receive most of its money from the Federal Government.

A bill proposed by Senator Walter F. Mondale of Minnesota calls for the expansion of Head Start over the next five years from a $320-million a year program to a $5-billion a year program.

A third bill, proposed by Senator Russell B. Long of Louisiana, would get up a Federal Child Care Corporation that would create, but not pay for services.

Private efforts to solve the problem have been met with some skepticism. Several years ago, entreprenuers, including several football stars, talked about setting up franchises. But because of the expense of running quality programs, most have left the field.

One private effort has received some praise from educators, however. This is the Educare project of the Universal Education Corporation of New York. It has signed a contract with the Pennsylvania State Department of Education to set up centers in four cities and hopes to expand from there.

Private industry has provided facilities for the children of employes on a very limited basis. A 1968 survey by the Department of Labor showed that fewer than 150 industry-sponsored centers were available and more than 100 of these were in hospitals.

The Amalgamated Clothing Workers Union in Baltimore and Chicago has extensive programs, however. So do KLH Research and Development Corporation of Cambridge, the Whirlpool division of RCA, and the Department of Labor itself.

GREAT SALT LAKE MINERALS, BERYLLIUM INDUSTRIES PROGRESS IN UTAH

Mr. BENNETT. Mr. President, it is always a pleasure to see the tangible results of a goal for which one has worked. Today a dream for many of us from Utah begins to be realized as one of the first commercial attempts to "mine" the Great Salt Lake is officially inaugurated.

The extraction of important minerals from the northwest arm of the famous lake is a testament to the wisdom of Congress, which helped to make the operation economically feasible when it adopted my amendment last year granting depletion rates ranging from 10 to 22 percent for the various minerals in Great Salt Lake. It also is a testament to the foresight and hard work of the Great Salt Lake Minerals & Chemicals Co. The firm conducted 8 years of research, testing, engineering, and construction in preparation for today.

The ceremonies today are specifically for this operation west of Ogden, Utah, where water from the brines of the Great Salt Lake is being evaporated in huge ponds. Many tons of potash salts, magnesium chloride, and sodium sulfate will be extracted from this operation. However, other ventures on the lake are also progressing and undoubtedly will help to contribute to Utah's economic well-being, as well.

Interestingly, the same issue of one of my State's leading newspapers that brought word of progress on the Great Salt Lake carries an adjacent report of another unique Utah mining operation—that of the Brush Beryllium Co., in Juab County.

The company, whose operation was also facilitated by congressional action last year that retained the depletion allowance for beryllium at the same 22 percent that an amendment of mine provided back in 1964, has made tremendous strides in a relatively short time. The latest word at the Utah berylluim operation—the only one of its kind in the Nation—is that the Brush Beryllium Co., has successfully test-processed a lower-than-average-grade ore from its Roadside Mine in Juab County. This indicates that open pit operations can be continued for a longer time than previously anticipated.

Mr. President, the boon to the economy of Utah and to the present and future mineral and metal needs of the United States through these developments will be significant indeed. I take this opportunity once more to congratulate publicly the industries involved and to thank the Senate for its cooperation in helping to make possible this important work.

I ask unanimous consent that the two articles published in the Salt Lake Tribune of November 26 be printed in the RECORD.

There being no objection, the articles were ordered to be printed in the RECORD, as follows:

COMPANY TO START MINING GREAT SALT LAKE PONDS

(By Robert H. Woody)

The first venture to "mine" the Great Salt Lake will formally begin operations in a ceremony Dec. 3.

It will mark the culmination of eight years of research, testing, engineering and construction by Great Salt Lake Minerals and Chemicals Co. west of Ogden.

Here water from the rich brines of the northwest arm of the Great Salt Lake is being evaporated in huge ponds.

The resulting precipitate is to yield about 240,000 tons of potash salts; 100,000 to 200,000 tons of magnesium chloride; and 150,000 tons of sodium sulfate.

COMPANIES INVEST

The venture represents an investment of nearly $30 million by two corporations—Gulf Resources and Chemical Corp., which holds a 51 percent interest in GSIM&C and Salzdetfurth, A.G., of Hanover, West Germany, which holds a 49 percent interest.

Top officers of both companies as well as jointly held operating company will attend the ceremonies along with government and business leadership of the state.

There are also other ventures on the lake.

On the west side of the lake, near Rowley, Tooele County, National Lead Co. is moving ahead on a $70 million evaporation pond system and electrolytic refinery to produce magnesium and chlorine as well as certain chemical byproducts.

FIRM TESTS ORE

Brush Beryllium Co. successfully test processed to lower-than-average-grade ore from its Roadside Mine in Juab County.

The test was conducted over a six-week period during the third quarter.

According to Dr. Raymond A. Foos, vice president of research and development, Brush tried a .42 percent grade ore compared to a normal run of .6 to .7 percent at its mill near Delta, Millard County.

Present open pit operations can be continued for a longer time than anticipated before more costly underground operations need be undertaken.

DESIGN AND DEVELOPMENT

Before being named to his present post, Dr. Foos was closely connected with design and development of the mill.

Brush began milling operations in 1969.

Its intent in developing the Utah ore—the only domestic ore body and the largest in the world as far as is known—was to assure large U.S. users of an adequate long-term supply of beryllium, Dr. Foos said.

Until now ore had been imported from Africa and South Africa in the beryl form—a crystal which is hand cobbed from host rock.

Brush, he said, also hopes to reduce the price of domestic beryllium principally by maximizing the economics of ore handling.

THE CONTRIBUTION OF THE "MAYFLOWER" PASSENGERS TO THE SEARCH FOR VALUES

Mr. ERVIN. Mr. President, on November 14, 1970, Mr. Paul P. Hoffman, assistant archives administrator of the State of North Carolina Department of Archives and History, delivered an address before the Society of Mayflower Descendants in the State of North Carolina at Raleigh, N.C., which he entitled "A Search for Values." In his address, Mr. Hoffman pointed out in eloquent fashion the contributions which the *Mayflower* passengers made to mankind's search for the ultimate values of life. For this reason, the address merits preservation and dissemination.

I ask unanimous consent that it be printed in the RECORD.

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

A SEARCH FOR VALUES

Ladies and gentlemen of the Society of Mayflower Descendants in the State of North

Carolina, and distinguished guests. I feel highly honored and privileged to address you this evening on the occasion of the 350th anniversary of the landing of the *Mayflower* at Plymouth. I think it appropriate that, on this special occasion, we review the causes and motivations for the group of people that we know as Pilgrims to remove from their homeland to another civilized land and eventually to the barbaric coast of New England. The official Mayflower prayer reveres "courage in the face of hardships." but the significant point here is "why face or develop the courage to face seemingly needless hardships?" In other words, what were the *Mayflower* people seeking? What was this great search for values that drove them to the hardships of settling one of the most geographically inhospitable areas of a new continent?

Let us look, for a moment, at the England in which these people were raised and the specific influences of their early lives. William Bradford, William Brewster, John Robinson, and other of the leaders were raised in the reign of Elizabeth. There is not time here to deal with the Elizabethan Age in detail, indeed many hundreds of years have been devoted to attempts to adequately portray the Age of Elizabeth, but suffice it to say that the serious disruptions of Henry VIII and Mary were, for the most part, over. The Age of Elizabeth, then, was a calmer period than that which preceded it or than that which succeeded it. A time of consolidation and reflection is an appropriate description. Elizabeth was determined to maintain a strong crown at any cost, and the politics of such an aim determined a religious settlement tolerant of Protestantism, or an environment in which puritanism was able to grow and develop. This is not to say, however, that England was a protestant country, for there is good evidence to support the proposition that at Elizabeth's accession, France was more protestant than England. Until 1570, then, religious options were open, but in that year the Papal Bull deposing Elizabeth set England on the course she has followed to this day. Underlying these religious considerations it is important to bear in mind a constant rise in status of the gentry and middle-classes and a constant decline in the power and influence of the Aristocracy.

Where, then, do the people of the *Mayflower* fit into the scheme of things? From the founding in 1606, in the obscure Nottinghamshire town of Scrooby, of an Independent Church the group can be noted by its rural character and its yeoman or middle-class character. In the words of William Bradford, they had been "used to a plaine countrie life and the innocent trade of husbandry." Aside from some local mocking and a slight brush with ecclesiastical authorities, they lived a peaceful life, but perhaps in anticipation of troubles to come, opted to follow the example of another neighboring congregation and remove to Amsterdam, Holland, in that day, being probably the most tolerant country in existence. It is not my purpose simply to gloss over the cause of their departure by saying that they "opted" to go, it is possible to say that they were *not* "harried from the land," but I have been unable to find an adequate causal reason for their departure to Holland in 1607. This is a point in the definition of values that I wish to pursue later.

The trip to Holland, although frought with some troubles, was not difficult, and the Scrooby group settled in Leyden, the old university city, successfully. They remained there for thirteen years and met with considerable success and had won the admiration of the Dutch as well. Nonetheless, in 1620, seemingly at the peak of success, we find the group considering leaving the Netherlands for the new world. The reasons as given by Bradford in *Of Plimouth Plantation* were the difficulty of making a living, the unlikelihood of attracting others, the possibility that they themselves would disperse, and the worldly temptations which beset their children. Motives then that were partly patriotic, partly economic, partly religious, and partly moral. Lump these with the departure from England and you have a portrait of a fiercely independent and highly idealistic group of people. Independence and idealism, however, do not often represent money, and it was necessary to enter into a contractual business arrangement to secure transportation to and sustenance in the new world. The details of this were worked out together with an informal recognition of religious toleration and freedom from King James I. It is interesting to note that this first permanent colony in New England, was the child of two parents: On the one side the grasping businessman with his desire for gain, who risked a large sum and made heavy losses; and on the other side the higher motives of some of the actual emigrants, whose character, sense, and patience rescued the enterprise from disaster. Despite many difficulties related to departure, a total of 102 passengers arrived at Cape Cod on November 19th 1920, of which one-third were of the original group from Leyden. A decision was made to settle at the nearest suitable spot, knowingly outside of the jurisdiction of the Virginia Company, and, therefore also outside the bounds of their own patent. This, another evidence of fierce independence, and as time would tell, prudence as well. Before landing the famous Mayflower Compact was drawn up which, before this group, I feel no need to pursue in depth. The settlement was finally begun on December 21 at Plymouth.

The first winter, although unusually mild, was wrought with much sickness and many deaths, but there were always six or seven to nurse the living and bury the dead. These acts of kindness and understanding were the sustenance of the colony in its first year. Despite them, when the first supply ship arrived the next autumn only one-half of the original company was still living.

Successful relations with the Indians and successful trading for fur carried the colony during its first year. In fact the Bible and the beaver were the two mainstays of the young colony. The former saved its morale, and the latter paid its bills. Additional immigrants arrived on the *Fortune* for which the Pilgrims were unprepared, but as another of their values in their general search for value, they were made welcome and the provisions on hand were stretched for them. In fact, later, after Thomas Weston, one of the original backers of Plymouth, withdrew his support and sent out a colony to trade on his own account, dropped over sixty unruly colonists on the mercy of Plymouth for some months where they were treated with kindness. This colony, as a point of comparison, was to fail largely because it did not develop the sense of values which Plymouth had developed. The final example was the loan made by Plymouth to Weston after the failure of the colony so that he could set himself up as a trapper. In short, then, Plymouth, as a matter of policy, greeted and treated all who came as brothers. Kindness became a modus-operandi and an important element in the overall success of the enterprise.

Another threat was from internal dissent as propigated by John Oldham, and the hypocritical clergyman, John Lyford. We cannot go into detail on this, but the situation was handled first by futile attempts at suasion but finally by banishment. There is no case known to me of overreaction to a threat, but rather a moderate approach employing as little force or coersion as was necessary to get the job done.

By 1625 Plymouth, although the largest settlement in New England, was outnumbered by the other permanent settlers, who were likewise founding New England. There was, however, one matter which caused the Pilgrims great anxiety, namely their ill-defined relationship with the adventurers in London whose claims were still good until legally extinguished. It was necessary to come to terms with this. Negotiations were carried on and it was agreed that all claims of every description were to be canceled by the payment of £1800, in annual installments of £200 each. The payment of this sum, together with £600 of additional debt, was undertaken by Bradford, Brewster, Standish, and Winslow, with four others in the colony and four friends in England, in exchange for a monopoly of the colony's trade for six years. This eliminated the proprietary elements and the settlement became legally what it had, for all practical purposes, been from the start—a corporate colony. A new patent for Plymouth was granted in 1630 which assured their independence and boundaries. The powers of government continued to rest upon the compact signed aboard the *Mayflower* ten years earlier. But in four of the most important elements in the larger migration—the bringing of families to form permanent homes, the peculiar form of church government, the individual ownership of freely acquired land, and the severing of business and legal relations with any company in England—the Massachusetts leaders but followed the ways laid out by the simple founders of Plymouth.

On what, then was the success of Plymouth based? I put it to you, that the success of the colony was based upon the values of foresight, tenacity, fortitude, faith, moderation, tolerance, kindness, sticking together, and a seeming inherent quality of knowing what to do. The independence that drove men from Scrooby and from Leyden appears to me to be a kind of restlessness that is associated with men of high ideals and men not easily pleased. It is this sort of man who conquers continents, it is this sort of man that founded Plymouth and made it work.

The Deputy Governor of this organization has asked me to make recommendations for activities for this Society. I do not presume to tell you how, but I can say that it is the sort of values that I have tried to point out in this talk that have made this country great, and I would recommend that this group, with its proud heritage, do whatever is within its power to disseminate knowledge of these values as widely as possible to the youth, who are the future leaders of this country.

Ladies and Gentlemen, I thank you!

THE TEXTILE ISSUE—FACT AND FICTION

Mr. MILLER. Mr. President, Stanley Nehmer, Deputy Assistant Secretary of Commerce for Resources, provided some penetrating insights into the impact of imports on the textile industry in a speech before the National Association of Wool Manufacturers here in Washington on November 18.

I feel that what Mr. Nehmer had to say, especially in countering the superficial and erroneous statements which are abounding, will be helpful during the Senate's consideration of trade legislation. I ask unanimous consent that the address, entitled "The Textile Issue: Fact and Fiction," be printed in the RECORD.

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

THE TEXTILE ISSUE: FACT AND FICTION
(By Stanley Nehmer)

I

I am pleased to have the opportunity to meet with you today, at a time when Congressional consideration of legislation which can affect your industry is moving toward its final stages in this session of Congress.

The solution which the Administration seeks to the problem of burgeoning and disruptive textile imports is the textile legislation now before the Congress. The Administration has taken that position with reluctance because we have always felt and still feel that the preferred way to deal with the textile import problem is through negotiated agreements with our principal foreign suppliers. But, in the absence of any constructive negotiated solution, legislation represents the only means to bring an end to this long-standing, frustrating problem. Secretary of Commerce Stans advised the House Ways and Means Committee on June 25 that the Administration supports the enactment of the textile provisions of the trade bill.

In recent weeks, and particularly during the last week, a number of statements have been made and articles printed on the textile situation. Many of these have shed much heat, but little light, on the textile import issue. We have had much fiction, but few facts. I would like to take this opportunity to comment in particular on one of these statements, prepared for an economics seminar, which received considerable attention in the press. I am referring to the comments of Governor Andrew F. Brimmer of the Board of Governors of the Federal Reserve System concerning import controls and domestic inflation as it relates to the textile issue.

But before getting to the basic questions raised by Governor Brimmer's analysis, I want to emphasize that my comments will be confined to the textile features of the trade bill and the textile issue. They do not in any way represent my judgment or that of the Administration as to other features of the trade bill or as to the position of the Administration on the bill as a whole. Secretary Stans and others in the Administration have expressed our views and deep reservations about many aspects of the trade bill in their recent testimony to the Senate Finance Committee, and I need not repeat that this morning.

II

The key to an understanding of the Administration's support of the textile quota provisions of the trade bill was stated by Secretary Stans to the Senate Finance Committee on October 12:

"The basic thrust of the textile provisions of this bill is in the direction that we have pursued for many months—the negotiation of viable international textile agreements. The quota provisions of the bill would be superseded by bilateral or multilateral textile agreements and may be waived for non-disruptive imports or where the President may find it to be in the national interest not to impose quotas."

This reading of the bill is not arrived at lightly. It is based on our direct and extensive participation in the drafting of the textile provisions of Title II of the trade bill, and it recognizes that the Ways and Means Committee adopted changes suggested by the Administration in this Title during the course of its very thorough and extensive deliberations.

Secretary Stans and other Administration witnesses had urged modification of the bill originally introduced by Chairman Mills to provide for exemption of non-disruptive goods. This and other changes were developed during the course of hearings, and were adopted by the Committee. A central feature of these changes is to assure a flexible instrument that can be used to bring about negotiated agreements. The Ways and Means Committee itself supports this view of the bill in its report by stating that "it is intended that, insofar as may be possible, the limitation of these imports will be accomplished through the negotiation of voluntary agreements provided for under Section 202 *and that the quota provisions of Section 201 will assist in the negotiation of such agreements* as well as to provide protection for the domestic market and workers in cases where such agreements are not concluded." (Emphasis supplied.)

We have said over and over again that we will never cease to negotiate on the textile issue, even if quota legislation is enacted. The public record and the record of the Ways and Means Committee are clear to all who wish to avail themselves of the hard fact of our position on this question.

But Governor Brimmer has not consulted the record. How else to explain his statement which at once recognizes that, under the provisions of Title II the President may exempt non-disruptive articles, that he may waive quotas when he finds it in the national interest to do so, and that negotiated agreements automatically supersede quotas—and yet offers the following as the *basic working assumption* of his analysis:

"It was assumed that—if quotas were imposed—the amount of imports authorized would be that stipulated under H.R. 18970. In 1971, imports would be held to the 1967–69 average; then, beginning in 1972, the amount authorized would be increased by 5 per cent of the amount authorized in the immediately preceding year."

Governor Brimmer bases his entire estimate of the cost of the textile portions of this bill to consumers on this assumption. If valid, it would mean that 1971 textile imports would represent a rollback of about 25 percent from current levels. This is not fact; it is fiction. Indeed, Governor Brimmer even fails to note that cotton textile imports, which this year will account for some 1.6 billion yards, out of total imports of some 4.4 billion yards, are automatically exempted from quotas by the bill so long as we participate in the Long Term Cotton Textile Arrangement.

In the face of the record, in the face of a clearly stated Administration intention, and in the face of the realities of our textile trade and our textile policy, in which we have always provided substantial access for imports to our market, he assumes that there will be no exemptions for non-disruptive articles, and that either no agreements will be negotiated or, if any agreements are negotiated, there would be no increase above the 1967–69 average provided for in such agreements. That does not make sense.

And where does this wrong assumption lead Governor Brimmer? Following a fairly elaborate analysis which encompasses estimates of 1975 demand versus 1975 imports on the basis of these quotas, and a price analysis about which I shall comment later, we are shown an alleged cost to consumers of $1.8 billion for these textile quotas. At this cost, which he feels would have an inflationary impact on the economy, Governor Brimmer concludes that a solution other than import quotas is needed to provide the help to workers and firms in the industry which he agrees is needed.

III

Governor Brimmer's proposed solution is not new. Alarmed at the possible cost of $1.8 billion to American consumers, he recommends that we ". . . adopt more effective programs to provide re-training and transitional benefits or financial assistance for those who are displaced by competitive forces over which they have no control—whether the forces originated at home or abroad." He offers *no* analysis of his proposed solution. Indeed, from his paper one would assume that an adjustment assistance program for textiles is free, and that American tax payers are in some way different from American consumers.

But our experience thus far with adjustment assistance and our estimates for the future in textiles are quite to the contrary. Before getting to that, however, we should perhaps establish a basic line of logic. First, we should recognize that consumers pay taxes. Second, we should recognize that adjustment assistance or any other kind of assistance costs money. Third, we should recognize that such money comes from the Treasury Department which gets it basically from tax revenues. A conclusion begins to emerge, namely, whatever money an adjustment assistance program costs will be borne by tax payers, a worthy group difficult to distinguish from American consumers.

Now, perhaps we should look at how much an adjustment assistance program might cost in dealing with a problem of the scope and nature of that which confronts the textile industry and its workers. The textile-apparel complex directly employs some 2.3 million workers in some 35,000 separate establishments located in every state of the Union. On the basis of our experience with the automotive arrangement with Canada, we have estimated that adjustment assistance per 100,000 workers certified as eligible to apply for such assistance would cost in the neighborhood of $265 million a year. This assumes that of those certified, only 75 percent finally qualify and receive assistance. Of that 75 percent, only one-fourth receive training allowances. I use the 100,000 figure because it has a peculiarly current significance. From January of this year through September, the latest month for which we have data, textile and apparel employment in the United States was down by 100,000 jobs. A total of 125,000 lost jobs in textile and apparel by the year's end is certainly a real possibility.

Obviously not all of the jobs were lost to import competition, but just as obviously a great many of them were, since American consumption of textiles did not decrease, but the import share of that consumption increased. It is a relevant figure to consider. But we should not assume that a 100,000 or 125,000 job loss will be the end of our textile issue in the absence of a sound solution to the import problem. It can reasonably be predicted that additional job losses of a similar magnitude will continue to occur over the next four or five years in the absence of controls on textile and apparel imports. This annual figure of $265 million would be repeated several times over.

And what about firms? Adjustment assistance to firms also requires money. Our experience in cases of assistance to firms and the kind of capital requirements that might be involved there is less than in the area of worker assistance, simply because there have been fewer successful applications. We do know, however, that on September 29, 1970, the Small Business Administration announced a plan of assistance to the Emil J. Padar Co. (producer of barber chairs) which provided for loans totalling $4,125,000. Other adjustment assistance proposals are being considered by the Commerce Department at the present time. While their cost will vary significantly, I know of at least one that is expected to exceed $1 million.

The textile-apparel industry is composed of some 35,000 establishments owned by some 30,000 firms. Obviously, many of these firms will need assistance. Some of them perhaps will need as much assistance as the Emil J. Padar Co. Others will need less. Surely some will require more.

Little imagination is required to forecast that the application of figures in the order of magnitude of $1 million per firm to a very small percentage of these firms, i.e. 2 or 3 percent, produces rather large dollar outlays by the Government for an adjustment assistance program.

For example, assuming 30,000 firms, and assistance for the stated percent at the indicated level, we see:

1% at $1 million = $300 million
2% at $1 million = $600 million
3% at $2 million = $1.8 billion

Note that this 3% is only 900 firms, and a $2 million loan is less than one-half of what was deemed necessary to do the assistance job required for a barber chair manufacturer. Obviously the Brimmer solution would bring us to the threshold of a major financial undertaking that staggers the imagination.

Perhaps we should again note that, as Secretary Stans has stated, "The textile industry is too big for any kind of solution that we would be able to apply internally." Consumers, as taxpayers, would bear the burdens of such a program.

Indeed, this is perhaps the key distinction between the textile and shoe cases. The 100,000 jobs lost in textiles and apparel this year equals 50% of the total U.S. employment in the non-rubber footwear industry. Rather than 30,000 firms, there are 675. So different in size are these problems that they do, in fact, take on a difference in kind.

We believe a reasonable internally-oriented program *can* meet the problems of the shoe industry. The Administration has put forward such a program. In addition, the Tariff Commission's injury investigation now underway at the request of the President will help us to fill in gaps where import relief may be needed for particular products.

IV

Let us return briefly to another part of Governor Brimmer's analysis. He assumes that the unit value of imports (at retail) is about $6 as compared to a domestic value of about $10. He further assumes that the effect of the quota is to require that each item not available from imports be obtained domestically. Thus, the buyer of a unit who cannot obtain a $6 unit because of the quota must obtain a domestic replacement at $10. Cost of quota? $4 per unit. Net result based on his demand projections and on his import-supply projections? $1.8 billion.

But here again, I think we are dealing with a false assumption. Namely, that all imports and all domestic articles cover the same price spread in unit value. This ignores the fact that imports are generally more concentrated in value terms than is domestic merchandise which covers in significant quantity the entire range of price and quality. In short, the unit value comparison is not realistic. The $6 item that the consumer replaces with a domestic item is not replaced with a $10 item, but with an item of the same quality whose unit value is likely to be much closer to $6 than to $10.

Every dollar of reduction of that $10 unit in Governor Brimmer's analysis reduces the $1.8 billion cost figure by twenty-five percent. Thus, if a $6 item is replaced by a $7 domestic item the $1.8 billion cost drops to $450 million. You may have noticed that this is far below any reasonable estimate of the cost of an adjustment assistance program.

Governor Brimmer also fails to account for the cost to the Treasury of lost revenue from taxpayers who used to work in the textile and apparel industry but are forced into adjustment assistance payments, and from firms which used to make a profit in that industry but no longer do so. Our estimates of the lost wages alone for 100,000 workers amount to more than $500 million a year, or more than $625 million a year for 125,000 workers. And this is cumulative, so that, in the absence of meaningful restraints on imports, by the fifth year alone, it could be somewhere between $2.5 and $3.0 billion. Obviously, this loss to the economy is reflected in lost expenditures by these people, as well as in nonpayment of taxes. From contributors to our tax revenue and economic activity, these people shift to recipients of public assistance.

These figures on workers and firms do not reflect community losses sustained as a result of this loss of buying power, increased welfare costs, and lost local tax revenue from unemployed workers and closed plants. Over a five-year period, we could conceivably be dealing with an economic impact measurable in tens of billions of dollars.

As a final note, Governor Brimmer also largely assumes that the only real force holding down textile-apparel inflation is imports, and that a lessening of this pressure means equivalent upward price movement. But we are looking at an extremely competitive industry. Apparel, the focus and example chosen for his analysis, is without doubt the least concentrated major American industry. Its largest firm accounts for but 2 percent of the industry sales and its 8 largest together account for only 15 percent. Firms in this industry clearly face the knife-edge of competition, with or without imports.

There are other technical deficiencies in Governor Brimmer's analysis which I will not pursue in detail at this point, but which further undermine his conclusion.

For example, Governor Brimmer's method of calculating the cost of quotas on apparel depends *completely* on reducing the entire range of apparel items and pieces to a single "average price" measure. He does this by taking a *poundage* figure for all retail apparel purchases and dividing it into the total value of such purchases for both domestically produced items and for imports. But there is absolutely no relationship in the market place between the weight of an apparel item and its price. Anyone who looks at his wife's clothing bills knows this.

Also, we know that many of the factors relied upon in Governor Brimmer's method are not the constants he assumes them to be. This is true, for example, of the composition of the consumer's price index basket of goods and services. The only constant about this basket is that it changes all the time as per capita incomes rise and new consumer goods appear on the market. Six years is a long period for which to assume zero change in areas as dynamic as incomes, tastes, and actual consumer expenditures.

Governor Brimmer's method rests on arbitrary assumptions which introduce a serious systematic upward bias into his results and on crucial measurements which are technically unacceptable. Finally, there are also inaccuracies in his summary of the provisions of the bill, which cast additional doubt on the soundness of the paper. In short, good cloth cannot be woven from bad yarn.

V

What can be said, then, about the effect on prices of the textile provisions of the trade bill?

First, we should recognize that textile and apparel imports will continue at high levels under the bill. Instead of the disruptive 47 percent growth in imports of man-made fiber textile products which occurred in the first nine months of this year over the same period of 1969, which was 25 percent higher than the 1968 level, which was 52 percent higher than the 1967 level, we should see a smaller and non-disruptive rate of growth in such imports.

Second, our experience with regard to cotton textile imports which have been subject to control since 1961 under international agreements, has been that prices have risen only slightly. In 1960, the year before these arrangements began, the wholesale price index for cotton products (1957–59 = 100) stood at 104.4. In September 1970, it was at 106.4. During the same period the index for all industrial commodities increased from 101.3 to 117.1.

Third, the key to the future of prices of textiles and apparel lies in maintaining a viable, competitive domestic industry, that is, in the competition of 30,000 firms for the consumer's business. If imports should further reduce the size of this industry significantly, we can all view with alarm the impact on the consumer.

VI

Thus, I do not accept Governor Brimmer's analysis of the textile situation or his recommendations for a solution to the textile import problem. In my view, public debate on the trade bill and the Congressional debate we shall witness this week are not well served by an analysis which starts from false premises and carries them through to extreme conclusions. One point made by Governor Brimmer is his often repeated caveat, lost in some public reports, that his "estimates are obviously tentative and should be interpreted with considerable caution." I agree with that, and how!

We can only hope that fact, not fiction, will prevail on this issue in the coming weeks.

A TRIBUTE TO WALTER J. HICKEL

Mr. STEVENS. Mr. President, most of the Members of this great body will remember the stormy days in January 1969, when the Senate considered the nomination of then Governor of Alaska Walter J. Hickel to be Secretary of the Interior. Governor Hickel was accused of having close ties to the oil and gas industry and with having a callous attitude toward our natural environment. On the day the Senate voted to confirm Governor Hickel I spoke in his defense and I predicted to the Members of this body that Governor Hickel "will become a great Secretary of the Interior and . . . will guard his Nation's resources well." My prediction has been borne out.

Soon after the new Secretary took office the substrata above an oil pool in the Santa Barbara channel ruptured and natural pressure in the pool forced between 1 and 3 million gallons of oil in the waters above, some of which floated to shore and severely damaged miles of beautiful southern California beaches. Secretary Hickel flew to the scene and made a personal inspection, consulted with experts and then made the tough decision to shut down all offshore operations in the area. He then asked the U.S. Geological Survey to draft a substantially stronger set of drilling regulations and put them into effect despite industry opposition. He followed this with a regulation making oil companies strictly liable for spills from oil platforms in offshore Federal areas.

And this was not an isolated incident. He continued his drive to protect the environment. He blocked construction of a proposed Miami jetport that might have severely damaged the Everglades National Park. He convinced the Army Corps of Engineers to divert water into the park to save it from destruction.

The Secretary also took innovative new steps by recommending the creation of a new system of urban parks, proposing a ban on billboards on Federal lands, supporting a strong coal mine safety bill, banning the use of DDT by Federal

agencies under his control, and ordering the prosecution of mercury polluters and oil companies violating regulations in the Gulf of Mexico.

His record, of course, will not satisfy everyone—no one could. But as Spencer Rich of the Washington Post put it recently, "Take him all in all, and most conservationists agree that he has done a good job in the public interest."

Over half a century ago, one of America's truly great conservationists, President Theodore Roosevelt, said something which I think Secretary Hickel's critics, and in fact all critics, would do well to bear in mind. He said:

It is not the critic that counts, not the man who points out how the strong man stumbled or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly, who errs and often comes up short again and again; who knows the great enthusiasms, the great devotions and spends himself in a worthy cause; who, at the best, knows in the end the triumph of high achievement and who at worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

The Nation's loss is Alaska's gain, for Wally Hickel is coming home. As Alaskans meet the challenge of wisely developing our resources while protecting our clean air, clean water, and quality of life, we will have the guidance and wisdom of Wally Hickel to aid us. A unique man, a strong man, an Alaskan, Walter J. Hickel loves his State and country and his voice will continue to be heard.

BRUCE SAYS REDS WILL NOT NEGOTIATE

Mr. DOLE. Mr. President, there was an interesting story in yesterday's newspapers, a story that puts in their proper perspective all those complaints that every time the President acts in Vietnam he hurts negotiations in Paris.

If you will recall, the United States has taken nearly every step possible, short of outright surrender and abandonment of its allies, in an effort to bring about meaningful negotiations with the North Vietnamese.

But also, from time to time, in an effort to save American lives or prevent military disaster, President Nixon has acted in a manner that tells the North Vietnamese we have not retreated, we have not surrendered, and we are not a paper tiger.

You may remember the incursion into the North Vietnamese sanctuaries in Cambodia last spring.

Or, you may remember the latest daring effort to rescue American prisoners of war rotting in North Vietnam.

And the cries of anguish it brought forth.

I recall the words of the junior Senator from Maine last Tuesday, November 24, when he said:

What I am suggesting is that if we embark on that kind of policy, of reaching in from time to time to get a handful of prisoners back, we may exacerbate the situation, we may be risking an escalation of the war, we may minimize the prospects of a negotiated settlement and we may further delay the day when we may bring them all back.

The tone and the temper of the Senator's remarks are that we are engaged in meaningful negotiation and that the North Vietnamese are willing or have been willing to discuss the matter of prisoner exchange or even decent prisoner treatment.

This, of course, is not the case at all.

Mr. President, you may remember, the President has offered a total prisoner exchange: all North Vietnamese for all Americans. In terms of numbers, this would be clearly to the advantage of the North Vietnamese. Yet they have ignored the proposal.

Mr. President, what negotiations is the Senator from Maine talking about in realistic terms?

If we read yesterday's Washington Post, there are none.

Let me quote from an article by Anatole Stub, of the Washington Post foreign service:

PARIS, Dec. 1.—David K. E. Bruce, the chief U.S. negotiator at the Vietnam peace talks, said today that "there have never been any true negotiations" in the nearly two years of the Paris conference.

The U.S. envoy told a news conference that the talks had provided "a propaganda field day" for North Vietnam and the Vietcong, and that "that is all that has been going on."

Bruce said there has been "no indication whatever" that the Communists were ready to "engage in true negotiation." Instead, he said, the Communist side has stuck to its two preconditions—total U.S. withdrawal and replacement of the Saigon government—which, if accepted in toto, would according to them result in a "negotiating posture."

The Communist preconditions remain unacceptable to the United States, Bruce said.

Mr. President, I do not doubt that it is in our own best interest to continue to try to bring about some kind of meaningful negotiations with the Communists.

But from the evidence at hand, it appears that there is little hope that the Communists will voluntarily free any American prisoners in the immediate future.

I wonder how long the critics of the President's action—safe here in their own snug comfortable lives—would ask their fellow Americans in those Communist prisons—and their wives and children—to be patient?

SENATE REFORM

Mr. HARRIS. Mr. President, Senate reform is a subject which I hope will be increasingly discussed and supported in the Senate and in the country.

To further that discussion and, hopefully, to increase support for reform, I ask unanimous consent that a memorandum I have prepared for circulation to Senators be printed in the RECORD.

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

MEMORANDUM FROM FRED R. HARRIS, SENATE REFORM

I. NEED FOR REFORM

During the last six months—and particularly in the weeks which immediately preceded the 1970 elections—I had occasion to travel around the country quite a bit and to talk with people from all backgrounds. The principal hallmark of the 1970 elections was the feeling on the part of many Americans that it didn't really matter what politician was elected.

A great deal has been written and said about the alienation of young people and the alienation of black people and other minorities. I believe that there is a growing and dangerous feeling on the part of many of the great mass of plain people in this country that the political process is not responsive enough to the public will and cannot act with sufficient urgency on the pressing problems which face us.

I find it in my own family. A relative of mine has suffered a catastrophic illness, and despite the fact that this couple has worked as hard as they could all their lives, they cannot pay their medical and hospital bills. My father, a very small farmer, rightly believes that he had a legitimate complaint about the need for tax reform. Too many people like these are convinced, correctly, that they have just complaints about the way things are, but they seriously doubt that anything much is really going to be done about these complaints.

Put this together with the same kind of despair that so many young people and members of minority groups feel, as they contemplate the need for national action on a broad range of social problems, and the necessity to do more than just talk about these problems confronts each public official in America.

Those of us in the Senate have a special responsibility to try to modernize and reform the one institution to which we belong—the Senate. If we are to help restore and renew public confidence in the political process and in our political institutions, I believe it is imperative that we act now to make the Senate more responsive to the public will and more nearly an instrumentality for carrying forward the majority view in the Senate.

Accordingly, I have discussed these matters with a number of people—Senators and others—who are knowledgeable and concerned about Senate procedures. I believe there is strong and growing sentiment for reform. Thus, what follows is a listing of some of the issues which should be considered by the Senate—and particularly by the Senate Democratic Caucus—for action at the beginning of the 1971 session. These ideas are circulated, not as final positions, but as the springboard for further discussion, refinement, revisions and additional suggestions. This effort in no way intends to be critical of the Senate leadership—and certainly not of Senator Mansfield—but of the system itself and of its outdated and archaic rules and procedures. The U.S. House of Representatives—and the House Democratic Caucus—have begun to institute important reforms. I believe it is time for the Senate, also, to move toward modernization and reform.

II. STEERING COMMITTEE

Of crucial importance will be the selection of three new members of the Democratic Senate Steering Committee, which makes committee assignments. Vacancies will occur because of the retirement of Senators Dodd, Holland and McCarthy. It has been the procedure in the Democratic Caucus in the past to move toward better representation on the Steering Committee of the regional and ideological makeup of the Senate Democratic Caucus. This should, of course, be carried forward in 1971.

These three vacancies should be filled with progressive Democrats to improve the ideological balance of the Steering Committee and to make the Steering Committee more nearly reflect that balance in the Democratic Caucus. The vacancy created by the retirement of Senator Dodd should be filled by a progressive Democratic Senator from the Northeast, and the vacancy created by the retirement of Senator McCarthy by a progres-

sive Democrat from the Mid-West—to continue the same geographical or regional representation in these two instances.

However, the vacancy created by the retirement of Senator Holland should be filled by a progressive Democrat from the West. The present regions and the states which make them up—important for the purposes of regional balance on the Steering Committee—have more or less arrived at in the past informally, apparently. Oklahoma and Texas are listed in the Southern region for this purpose. I believe that such a listing is erroneous, because some years ago the Senators from both of these states decided to meet with the Western Caucus, rather than the Southern Caucus, and because the interests of their people are more nearly parallel to those of the West.

Placing these states in the Western region would mean that the Northeast would continue to have 9 Democratic Senators, the South would have 15, the Mid-West 14 and the West 16. Thus, the Mid-West, West and South would each be entitled to 4 Steering Committee seats.

Put another way, no Southern Democrat Senator would lose his spot on the Steering Committee. Instead, the under-represented Western Democrats would pick up a fourth seat on the Steering Committee when this vacancy is filled.

The three vacancies on the Steering Committee should be filled before new Committee assignments are made for the 1971 session.

Moreover, the Steering Committee assignments should be subject to individual votes in the Democratic Caucus. (More on this later in respect to the need for increased importance to be assumed by the Democratic Caucus.)

III. COMMITTEE RATIOS

It is generally conceded that the Finance, Judiciary and Appropriations Committees, especially, are not ideologically representative of Senate Democrats, being heavy on the conservative, rather than the progressive, side. How committee ratios are determined for these committees and for the Foreign Relations and other important committees will be highly important. If ratios are worked out on these committees in such a way as to reduce the number of Democratic seats that would otherwise be available, it will be impossible to achieve more nearly an ideological balance which is truly representative. Agreements with the Senate Republicans on committee ratios should take this into account.

Moreover, the size of these committees under the Legislative Reorganization Act—as seems permissible under that law—should take into account the Senators who are "grandfathered" in as members of more than one major committee.

In other words, a committee which would otherwise be reduced from 17 to 15 members, under the Legislative Reorganization Act, but which has two "grandfathered" members, should temporarily remain at the present membership of 17 in order to accommodate those specific memberships.

The Appropriations Committee should remain at 14 Democrats and 10 Republicans; the Finance Committee should remain at 10 Democrats and 7 Republicans; the Foreign Relations Committee should remain at 9 Democrats and 6 Republicans; and the Judiciary Committee should remain at 10 Democrats and 7 Republicans.

The appointments to these committees particularly should be from among the progressive, rather than conservative, Democrats in the Senate so as to more nearly conform the membership of these committees with the ideological balance in the Democratic caucus.

IV. SENATE DEMOCRATIC CAUCUS

Since Democrats will continue to be the majority party in the Senate in the 1971 session, they have a special burden of responsibility to the public. It is they who designate the Senate leadership, committee chairmen and principal staff, and schedule the work of the Senate in committees and on the floor.

Because of this special public responsibility, the Senate Democratic Caucus is highly important. If it is to become more responsive to the public will, the Senate Democratic Caucus must be upgraded in importance, visibility and influence.

The Caucus should meet regularly, at least once a month. Even better, would be a weekly luncheon.

Attendance will depend upon the Caucus actually having something to do. Senators will attend if important decisions are being made. The Caucus should meet in public, because it will be doing the public's business.

The Steering Committee should report committee assignments to the Senate Democratic Caucus, not directly to the Senate floor. Most often, and particularly initially, these assignments would probably be approved as a matter of course. But the right of the Caucus to vote on individual assignments, should it desire to do so, should be established.

Most important, the Senate Democratic Caucus should be given an opportunity every two years to vote on Steering Committee recommendations for all committee chairmen. Again, at least initially, these chairmanships would probably be approved almost as a matter of course. Even this, however, would have a highly salutary effect and would tend to cause committee chairmen to become more responsive to the will of the majority in the Senate, particularly in regard to holding hearings and meetings and considering legislation.

V. PARTY LOYALTY

The Senate Democratic Caucus should face up to the question of what its position should be concerning committee assignments and Senate positions for those who are elected to the Senate or re-elected to the Senate as other than nominees of the national Democratic Party. In particular, this issue presently arises through the re-election of Senator Harry Byrd, Jr. of Virginia, not as a Democrat, but as an Independent. The issue has nothing to do with Senator Byrd as an honorable and dedicated Senator and person.

It does involve such questions as whether or not it will be possible to build and maintain national Democratic parties throughout the country if the Senate Democratic Caucus ordinarily grants full membership in the Caucus to those who seek election or re-election under other party labels or under no label. Moreover, this can be very important insofar as the needed growth in the power and importance of the Senate Democratic Caucus itself.

Senators with whom I have discussed this difficult matter have raised serious questions—some based upon law, some on fairness and some practicality—about acting retroactively in regard to Senator Byrd. Moreover, the first decision is his as to whether or not he seeks to continue his membership in Democratic Caucus. There is quite a bit of feeling that at the very least the Senate Democratic Caucus should lay down some prospective rule which would govern situations such as this in the future. I believe that the Senate Democratic Caucus should authorize a special committee to make recommendations to it concerning this matter.

VI. SENIORITY

The seniority system is one which has grown up by custom and tradition in the Senate and is most often, and rightly, attacked.

I believe that there is, correctly, a growing feeling in the Senate and in the country that the seniority system must be changed.

There is considerable support for the idea—operative elsewhere in the government—of a mandatory retirement age for committee chairmen, an age when they would be required to step down from the chairmanship but could remain as a member of the committee. Some supporters of reform of the seniority system argue that this is not the best method for accomplishing reform. I believe that this might be a step in the right direction if nothing better could be agreed to immediately.

A better and more logical way to reform the seniority system—and at the same time enhance the importance of the Senate Democratic Caucus—would be to require that committee chairmen be voted upon each two years by the Caucus, as suggested earlier.

Further, I believe that we should signal our responsiveness to the growing concern about the seniority system by voting in the Senate Democratic Caucus to set up a special committee on reform of the seniority system to report back on a date certain. This would serve the good purpose of helping to focus Senate and public attention on this problem and would generate debate and discussion about it in the Senate and in the country, both during the deliberations of the special committee and at the time its report and any substitutes for it were considered by the Senate Democratic Caucus.

VII. APPOINTMENT OF CONFERENCE COMMITTEES

Conference committees in the Senate are now, almost as a matter of course, appointed on the basis of seniority on the Senate committee involved. While the Senate conferees always do the best they can to represent the Senate position in conference, Senate conferees are often Senators who have not supported the majority Senate view on the major issues involved in the conference.

I believe that there should be greater representation on many of the Senate conference committees of those who have voted in the majority on the principal questions which are the subject of the conference.

I think that this should be the subject of discussion in the Senate Democratic Caucus, and I would hope that some general statement of policy on this matter, recognizing the need to vary the seniority rule on conference committees, would be adopted by the Caucus. This matter should also be the subject of consideration and recommendation by the special committee on reform of the seniority system, which should be created by the Democratic Caucus, as I stated earlier.

Moreover, I believe that Senators who are of like mind on this issue—both Democratic and Republican—should at an early date choose a piece of legislation in the Senate concerning which the appointment of conferees may be crucial and where the seniority system for choosing Senate conferees will not result in the selection of a majority of the conferees from among those who have supported the Senate position on the major questions involved. Then, when the matter of the appointment of the conferees in that case comes up in the Senate, Senators should join together to require the election of conferees by the Senate itself, as the rules provide. Success in such an effort, or even a strong and determined, but unsuccessful, attempt could, I believe, have salutary effect and could lead to a change in the way conferees are appointed.

VIII. FILIBUSTER

Of course, the power of the minority of the Senate to thwart the will of the majority through the use of the filibuster rule is the greatest anachronism in the Senate rules and the greatest barrier to majority rule.

Again, in 1971, the ruling of the Vice President as to whether or not the Senate is a continuing body with continuing rules will be crucial.

But, however that ruling goes, a determined and spirited fight will and should be

made to change Rule 22. As in the past, this should be a bipartisan effort. The leaders in this fight in the past have performed most commendably, and they should be encouraged. Whether or not the fight is successful at the beginning of the session in 1971, it is important that the public spotlight once again be focused on this archaic rule, and it should be demonstrated that at least a majority of the Senate wants to change it.

I personally would like to see the rule changed to a requirement of the vote of a bare majority to cut off debate. There is merit in the suggestion, however I and other Senators feel, that once again we should try to change the rule to a provision that three-fifths, rather than two-thirds of those present and voting, can invoke cloture, if it can be clearly demonstrated, as in the past, that this position would have greater support in the Senate and would more likely be able to attract sufficient votes to make the effort successful.

CONCLUSION

This discussion of needed reform in the Senate is by no means exclusive. Some Senators may agree on some of the matters discussed and not on others. Some Senators will have different or additional suggestions. I hope that this memorandum will elicit greater discussion of the important issues involved.

Most of all, I hope that we can build increasing support in the Senate, particularly among the members of the majority party which has special public responsibility, for a major new and concerted effort toward reform. The Senate is a great institution, but it must change with the times. And I firmly and sincerely believe that the times demand that the Senate become a more responsive instrumentality of the will of the people.

FOREST GROVE GLEEMEN AND GIRLS CHORUS OF OREGON

Mr. PACKWOOD. Mr. President, it was with great pleasure I recently learned that the Forest Grove Gleemen and Girls Chorus of Oregon has been invited to appear at the International Singing Festival in Vienna, Austria. Being selected to go to this festival is a great honor and a compliment, both to the Forest Grove singers and to our Nation.

This group is a nonprofit singing society from Forest Grove, and it has contributed 20 years of noteworthy service as well as listening pleasure to Oregon communities. Their activities include supporting scholarships for young singers, raising funds for community activities, and sponsoring an all northwest barbershop ballad contest.

Their appearances in Vienna will be July 1 through July 4, and they also plan to continue their tour with appearances in London, Zurich, and Rome.

Mr. President, I should like to mention here that these singers are the kind of goodwill ambassadors all nations listen to—for they generate peace and understanding through a universal language of song to which all nations are attuned.

WHAT HAPPENED TO THE "MOTHER OF EXILES"?

Mr. BAYH. Mr. President, nations find their proper place in history, not because of the extent of their borders, not because of the treasure piled up in their vaults, but because of what they stand for. Greece does have glory because it unfettered human thought. Rome does have grandeur because it left us the priceless legacy of the rule of law. Our own Nation has served as an inspiration to others; it has extended hope to the otherwise hopeless, because it has stood for freedom and the rights of man. To many millions overseas the real symbol of this country is not Old Glory but the Statue of Liberty with its light held up for a world to see. The Mother of Exiles has symbolized our deep concern for human rights by saying to the world:

Give me your tired, your poor. Your huddled masses yearning to breathe free. The wretched refuse of your teeming shore. Send these, the homeless, tempest-tost to me, I lift my lamp beside the golden door.

Last week a Lithuanian sailor aboard a Soviet vessel in American territorial waters responded to that symbol. But this seeker of freedom found the golden door barred by callousness, indifference, and bureaucratic insensitivity.

A fellow human being sought freedom and it was denied to him. Not only was this unfortunate, known to us only as "Simas," defrauded by being denied what he believed we stood for, not only have we confounded the hopes of millions behind the Iron Curtain who still yearn for freedom, but our Nation has lost by this shameful act. Our symbol of liberty has been stained and besmirched, and by our own hand.

Naturally, we will now have investigations. There may even be the 50th or the 100th or the 500th commission established to study this matter and some months later to present its findings to the archives.

But this event is too important to be left to the slow grinding of bureaucratic wheels. It goes to the very heart of what we stand for and merits the effective mobilization of our concern and compassion.

In an editorial published in the Washington Post of December 3, 1970, the President is urged to intercede directly with the Soviet Union to secure the release of "Simas," so that this Nation may at least partially redeem itself in world opinion and, more important, in its own opinion.

Further, if the Soviet Union refuses to release "Simas," I suggest that our Ambassador to the United Nations be instructed to place this matter before the General Assembly on Human Rights Day, December 10. Many Americans are sincerely concerned by the gradual erosion of effectiveness of the United Nations over the past quarter of a century. I submit that one of the reasons for this unfortunate decline is that we have failed to use the United Nations as the moral voice of mankind. The words of the preamble of the Universal Declaration of Human Rights are deeply moving:

Recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world.

Let us give life to those words. Let us ask other members of the United Nations to determine whether the brutal treatment accorded the freedom-seeker "Simas" accords with the sentiments of the Universal Declaration of Human Rights.

Our own commitment to freedom, the brave words utttered so often by the United Nations, mean nothing unless they reach out and are able to touch the individual. The President has many means at his disposal to secure effective action to free "Simas" and I suggest the urgency of mobilizing those means.

Mr. President, I ask unanimous consent to have printed in the RECORD the editorial entitled "Simas," published in today's Washington Post.

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

SIMAS

No more sickening and humiliating episode in international relations has taken place within memory than the American government's knowing return of a would-be Soviet defector to Soviet authorities on an American ship in American territorial waters off Martha's Vineyard last week. Here was a man, known only as "Simas," who had jumped across 10 feet of open water to a Coast Guard cutter (named Vigilant), which a Russian ship was approaching for fishing talks; who asked for but was denied political asylum because of an unbelievable breakdown in judgment and compassion on the part of both the State Department and the Coast Guard; who went down on his knees in prayer and then fought with his fists to be kept from being dragged back to the Russian vessel by Russian crewmen; who was given not a word or a gesture of assistance from the Americans who for hours witnessed his struggle; and who was finally rowed back, bound, to captivity and to God knows what other misfortune by *American* sailors in an *American* "lifeboat." The mind closes, the heart clogs at contemplation of this fantastic parable of our times. It is a profound stain upon every person who, by omission or commission, had a role in it.

Of course the President ordered an investigation, which evidently is not to be made public, but a more hollow one could not be imagined. For what is required is not just the usual kind of inquiry which concludes, if it is not more or less a whitewash, that certain procedures which should have been followed were not followed and that various individuals exercised bad judgment. There should be, on all levels and by individuals examining themselves, a deep look at the values and the condition of our society, whatever it is that allows a man's freedom, if not his very life, to be sacrificed needlessly, carelessly, by an unfeeling bureaucratic machine.

Moreover, we believe it to be appropriate politically and essential morally for President Nixon to make a direct intercession with the Soviet Union for the release of "Simas," and his family. The American government's embarrassment should not be allowed to obscure the Soviet government's fundamental duplicity in inventing a criminal charge against the sailor in order to balk his defection and then in seizing him against his will. The collective shame and indignation of the United States can be of no help to that poor man unless it is expressed in a specific urgent plea for his liberty.

AMBASSADORS BRUCE AND YOST ON PRISONERS OF WAR

Mr. GRIFFIN. Mr. President, on Tuesday there were two important developments regarding the plight of American prisoners in Southeast Asia.

Ambassador David K. E. Bruce held a press conference in Paris and provided the latest comprehensive report on Communist treatment of Americans. He called that treatment "shameful."

Ambassador Bruce said:

The truth is that the other side has failed in virtually every respect to treat our prisoners of war decently, or in accordance with internationally accepted standards of civilized behavior.

The other development was the approval by the Social Committee of United Nations of a resolution which calls for humane treatment of all war prisoners, including those in Vietnam.

Sixty nations voted in the U.N. for the resolution. This is a significant expression of concern by the world community about Communist treatment of prisoners. Only 13 nations, mostly in the Soviet bloc, opposed the resolution, and there were 34 abstentions.

Ambassador Bruce, in his press conference statement, called special attention to the Communist failure to provide information about those captured or missing in South Vietnam and Laos. A few propaganda broadcasts and one letter are the only communications available to the outside world on these men.

The Communists, said Ambassador Bruce, show no concern for their own men and flout our concern for ours.

He listed 13 types of Communist violations of the Geneva Convention. The Ambassador also provided the latest tabulation of Americans missing in Southeast Asia, the number acknowledged by the Communists to have been captured, the total number of letters received, and the number of writers.

As of November 1970 some 2,700 letters have been received from 332 writers.

Following the vote by the U.N. Social Committee, Ambassador Charles Yost emphasized that the size of the majority which voted for the POW resolution "shows that . . . treatment of prisoners weighs on the conscience of the world."

Mr. President, I ask that the text of Ambassador Bruce's opening statement at his Paris press conference, his tabulation of North Vietnamese violations of the Geneva Convention, the latest statistics on Americans held in Southeast Asia; the text of the United Nations General Assembly's Third Committee resolution on prisoners of war; and a statement by Ambassador Yost, be printed in the RECORD.

There being no objection, the items were ordered to be printed in the RECORD, as follows:

TEXT OF OPENING REMARKS BY AMBASSADOR DAVID BRUCE AT PRESS CONFERENCE ON PRISONERS OF WAR ON DECEMBER 1, 1970

Ladies and gentlemen, in view of the amount of press and public attention presently being given to the problem of American prisoners of war in Southeast Asia, I thought it might be useful to meet with you and answer questions on this subject.

Recent events have once again focused world attention on the plight of our prisoners, the action to rescue American prisoners at Son Tay was one example, certainly the most daring and dramatic, of the many efforts the United States Government and American people have made on behalf of our missing or captured men. All of these efforts reflect grave concern over their fate. There is no issue on which the American people are more united and more determined.

This concern is the result of the other side's shameful attitude on the prisoner of war question. Just last week one of their spokesmen asserted again that North Viet-Nam treats our captured men leniently and humanely. But the record, unfortunately, shows otherwise.

What is humane about keeping hundreds of families in agonizing doubt by refusing to identify the prisoners they hold, and to provide full information on the men they know to be dead.

What is lenient about keeping prisoners incommunicado for years, and, even now, allowing little or no communication between many of them and their families?

What is humane about refusing to permit impartial inspection of prisoner of war facilities?

And what is lenient about failing to release sick and wounded prisoners of war, and those held captive a long time?

The truth is that the other side has failed in virtually every respect to treat our prisoners of war decently, or in accordance with internationally accepted standards of civilized behavior. The most recent evidence of this is the distressing news that more of our men have died in captivity. We know that some of these men were alive in North Vietnamese hands after being shot down, because they were identified as such through the other side's own propaganda media. But we have no information on how or when they died, nor do we have official confirmation of their death.

If the record is bad enough concerning our men captured or missing in North Viet-Nam, it is even worse in regard to those captured or missing in South Viet-Nam and Laos. Except for a few propaganda broadcasts, we have never had any information from any source whatever on the fate of these men. Over all these years exactly one letter has been received from a person in this category. We know that several prisoners in South Viet-Nam have been murdered, and we fear for the fate of many others.

It is clear that the other side has deliberately chosen to flout their international legal obligations under the 1949 Geneva Convention, and their moral and humanitarian obligations to the prisoners and their families. They have chosen to try to use these men, and our deep concern for them, as bargaining pawns to achieve their political objectives. This is unconscionable and unacceptable. This is inhumane to the prisoners themselves. It is also inhumane to their families.

Here in Paris we have pursued the prisoner question as a matter of the highest urgency. Those of you who have been reporting these meetings know that we have raised this subject in over half of the plenary sessions at the Majestic Hotel, and we have frequently made it the sole subject of our statements. We have made clear from the outset that the treatment and release of all prisoners of war is a fundamental issue which cannot be ignored and need not await resolution of other problems. As you know, I have presented formally to the other side President Nixon's proposal on October 7 for the immediate and unconditional release of all prisoners of war on both sides—an offer on our part to release more than 36,000 of their men, including over 8,000 North Vietnamese soldiers, in return for probably less than 5,000 American and South Vietnamese prisoners held by the other side.

The reaction of the other side has been totally negative. They show no concern for their own men and flout our concern for ours. They have refused even to discuss the prisoner of war question unless and until we agree first to their basic preconditions to negotiation. This is a crude and unacceptable attempt at blackmail. It has added greatly to the solicitude the American people feel about the fate of our men.

In this matter of prisoners, I do not reflect a uniquely American position, but a universal position as set forth in the Geneva Conventions.

Hanoi and the Viet Cong must understand, in unmistakable terms, that their past and existing attitude on the prisoner of war question is intolerable. We will continue to pursue the twin objectives of humane treatment and early release of our men by all means available to us. Our men and their families deserve nothing less.

DRV VIOLATIONS OF 1949 GENEVA CONVENTION RELATIVE TO THE TREATMENT OF PRISONERS OF WAR

(To Which the DRV Acceded in 1957)

Art., requirement and DRV performance:

13. POWS must be humanly treated, protected; reprisals against POWS prohibited.

Paraded in streets, forced to make statements, some torture.

21. POWS not to be held in "close confinement."

Many POWS held in solitary confinement for years.

23. Mark POW Camps as visible from air, give information on camp locations.

No markings on camps: locations concealed.

26. Provide sufficient food, prevent loss of weight, take account of normal diet.

Released POWS state that standard fare consists of pumpkin soup, rice, bread, pig fat. All POWS underweight and suffering from malnutrition.

30. Adequate medical care.

Much evidence of inadequate medical care (photos, released POWS): prisoners dying in camps.

34. Regular religious services.

Only evidence is films of some Christmas service.

70. Write to family within one week of capture.

Some have not written for five years.

71. Minimum of 2 letters and 4 cards a month.

Average of 2-3 letters per year (none at all for some).

72. Free receipt of parcels.

DRV states that POWS can receive a package every other month. Evidence indicates delivery is irregular, parcels sent to "dead" not returned.

109. Immediate repatriation of seriously sick and wounded. Release of POWS long held in captivity.

No regular release of sick and wounded or long held POWS; state of health or duration of imprisonment has not appeared to be a determining factor in those releases which have taken place.

120. Advice of deaths in captivity, full official information on circumstances, cause burial, grave identification.

Bare assertion of death through unofficial and irregular channels. No details.

122. Advise promptly names of all POWS held.

Never released official or complete list.

166. Neutral inspection of all camps, interview of POWS without witnesses.

No inspection: propaganda interviews only.

U.S. POW'S AND MIA'S IN SOUTHEAST ASIA

Following is statistical information on U.S. POW'S and MIA'S in southeast Asia at Ambassador Bruce's special press conference on POW'S.

American prisoners of war and missing in action in Southeast Asia (as of November 23, 1970):

BY COUNTRY

	Missing	Captured	Total
NVN	403	378	781
SVN	463	78	541
Laos	227	3	230
Total	1,093	459	1,552

STATISTICAL RECAPITULATION BY YEAR LOST

	1964	1965	1966	1967	1968	1969	1970	Total
Missing	4	54	206	249	284	200	96	1,093
Captured	3	74	93	160	113	11	5	459
Total	7	128	299	409	397	211	101	1,552

CAPTURE ACKNOWLEDGED BY ENEMY

	By mail	By propaganda	Total
NVN	331	18	349
SVN	1	19	20
Laos	0	1	1
Total	332	38	370

MAIL STATISTICS

	As of January 1969	As of November 1970
Total letters received	620	2,700
Total number of writers	103	332

Only nine American prisoners held in North Vietnam have been allowed repatriation by the Hanoi Government. Most of these men had been prisoners for less than 2 years. Seventeen known prisoners have been murdered or have died in Viet Cong captivity. The physical condition of the men who have been released has been far below normal standards.

THIRD SOCIAL COMMITTEE—POW RESOLUTION

1. POW resolution, A/C.3/L.1808/REV.2 as amended, cosponsored by Belgium, Dahomey, Dominican Republic, Greece, Haiti, Italy, Madagascar, New Zealand, Philippines, Thailand, Togo, and United States, was adopted in the third committee on the U.N. General Assembly on December 1 by vote of 60 (U.S.)—16–34. Full report will follow septel.

2. Text of resolution follows:

The General Assembly,

Recalling that the preamble of the United Nations charter affirms faith in the dignity and worth of the human person,

Recalling that the United Nations has as one of its purposes achievement of international co-operation in solving international problems of humanitarian character and promotion of respect for human rights,

Reiterating the obligations of states members for the urgent termination of all armed aggression as envisaged in articles 1 and 2 of the charter and in other relevant documents of the United Nations,

Noting the obligation of states members under the charter of the United Nations to promote universal respect for, and observance of, human rights,

Recalling resolution 2444 (XXIII) and 2597 (XXIV) requesting the Secretary-General, in consultation with the International Committee of the Red Cross, to continue to study, inter alia, (I) steps which could be taken to secure the better application of existing humanitarian international conventions and rules in armed conflicts; and (II) the need for additional humanitarian international protection of civilians, prisoners and combatants in all armed conflicts,

Believing therefore that the treatment accorded to victims of war and armed aggression is a concern of the United Nations,

Noting resolution XI adopted by the XXIST International Conference of the Red Cross at Istanbul calling upon all parties to the 1949 Geneva Convention relative to the treatment of prisoners of war to ensure that all persons entitled to prisoners of war status are treated humanely and given the fullest measure of protection prescribed by the conventions, and that all parties involved in an armed conflict, no matter how characterized, provide free access to prisoners of war and to all places of their detention by a protecting power or by the International Committee of the Red Cross.

Considering that direct repatriation of seriously wounded and seriously sick prisoners of war and repatriation of interment in a neutral country of prisoners of war who have undergone a long period of captivity constitute important aspects of human rights as advanced and preserved under the Geneva Convention and the United Nations Charter.

1. Calls upon all parties to any armed conflict to comply with the terms and provisions of the 1949 Geneva Convention relative to the treatment of prisoners of war so as to ensure humane treatment of all persons entitled to the protection of the convention and, inter alia, to permit regular inspection in accordance with the convention of all places of detention of prisoners of war by a protecting power or humanitarian organization, such as the international committee of the Red Cross;

2. Endorses the continuing efforts of the International Committee of the Red Cross to secure effective application of the convention;

3. Requests the Secretary-General to exert all efforts to obtain human treatment for prisoners of war. Especially for the victims of armed aggression and colonial suppression;

4. Urges the compliance with article 109 of the convention, which requires repatriation of seriously wounded and seriously sick prisoners of war and which provides for agreements with a view to direct repatriation or internment in a neutral country of able-bodied prisoners of war who have undergone a long period of captivity;

5. Urges that combatants in all armed conflicts not covered by article 4 of the Geneva Convention of 12 August 1949, relative to the treatment of prisoners of war, be accorded the same humane treatment defined by the principles of international law applied to prisoners of war;

6. Urges strict compliance with the provisions of the existing international instruments concerning human rights in armed conflicts and urges those who have not yet done so to ratify or accede to the relevant instruments in order to facilitate in all aspects the protection of the victims of armed conflicts.

STATEMENT BY AMBASSADOR CHARLES W. YOST ON POW RESOLUTION

The United States is profoundly gratified that the Social Committee of the General Assembly in its consideration of the question of Respect for Human Rights in Armed Conflicts has overwhelmingly approved this broadly sponsored resolution on prisoners of war.

It makes clear the very real concern of the world community for the humanitarian treatment of all who find themselves in captivity, anywhere, during times of conflict. It reaffirms the fundamental principle that prisoners are entitled to certain basic protection, care, communication with their families, and repatriation.

Beginning in the mid-nineteenth century with the noble work of Henri, Dunant, the Swiss humanitarian who founded the Red Cross movement, civilized states have recognized that all those who find themselves in captivity or internment, often through no fault of their own are inherently entitled to decent treatment as human beings. In our century, in the heat of conflict, this principle has too often been overridden for political or propaganda ends. This has been and is a clear denial of those basic human rights set forth two decades ago by the United Nations in the Universal Declaration of Human Rights, and codified with respect to times of conflict by the series of Geneva Conventions. Virtually every nation-state and member of this world organization has subscribed to these principles, but in many areas the principles are not, unfortunately, followed in practice.

Today's vote shows that this treatment of prisoners weighs on the conscience of the world. It is gratifying that the Social Committee has approved this resolution. We hope that it will receive even broader affirmation in the Plenary.

The United States is of course most deeply concerned over the treatment in North Vietnam and elsewhere in Southeast Asia of the more than 1,500 of its citizens and servicemen who are missing in action. We have positive evidence of the inhumanities to which they have been subjected. Their families have long suffered—in some cases for over five years—by the silence imposed upon their loved ones. We are equally concerned for the fate of all other prisoners, wherever they may be, who suffer similar deprivation and indignities.

My Government, and its allies, have sought scrupulously to observe the provisions of the Geneva Convention, have made all our detention facilities accessible to the International Committee of the Red Cross, and have moved swiftly to correct any inadequacies of treatment of prisoners brought to the attention of authorities by representatives of that impartial humanitarian Swiss agency.

It is our hope that today's expression of conscience by this committee, along with the reiteration by the Secretary General on November 25th of his appeal for humanitarian treatment of prisoners and detained newsmen in North Vietnam and elsewhere, will lead to the acceptance of the humanitarian offices of the Red Cross wherever it has been denied access. We hope it will prompt release of accurate lists of captives, repatriation of sick and wounded, and restoration of communication among families.

Indeed, if member states will continue to lend their good offices, we believe this resolution provides a way for rectification of this grave violation of human rights. By internment in neutral third countries, by exchange of prisoners from both sides, by providing full access to all prisoners by humanitarian agencies, by restoring communications with families, real and practical steps can be taken toward ending this blot on the world's record of respect for human rights. If today's action by the United Nations helps to accomplish this, it will be a shining proof of the devotion of member states to the humanitarian pledges of the Charter.

CONSUMER AGENCY LEGISLATION

Mr. RIBICOFF. Mr. President, on Tuesday the Senate, by a vote of 74 to 4, overwhelmingly approved S. 4459, the Consumer Protection Organization Act. But yesterday, on a tie vote of 7 to 7, the House Rules Committee refused to send a similar bill to the floor for consideration by the entire House. Thus the lack of a single vote threatens to deprive the 435 Members of the House of an opportunity to act on this important legislation.

The Senate action shows there is broad

bipartisan support for this legislation. In turn, it reflects a widespread feeling across the Nation that consumers want and need the additional protection the bill would provide them. Yet the majority well may be thwarted for want of a single vote in one committee.

Mr. President, the consumer agency bill which passed the Senate is fair and well balanced. It advances the public interest without harming legitimate private interests. Senator JAVITS, who has worked long and hard for this bill, joins me in the hope that a way will be found to bring the House bill to the floor of the House, so that the whole House will have a chance to vote on it.

S. 4445—A BILL BY SENATOR PACKWOOD TO REDUCE OR ELIMINATE AGRICULTURE-RELATED POLLUTION — ADDITION OF COSPONSORS

Mr. PACKWOOD. Mr. President, I find it significant that President Nixon's first official act of 1970, and of the new decade, was to sign the National Environmental Act, on that occasion he declared that improving the quality of the environment is a major goal for the Nation and warned that "unless we move on it now, we will not have an opportunity to do it later."

With typical American enthusiasm the citizens of our land have launched countless action and study groups. They have organized some new environmental protection organizations, and have revised the charter and character of some existing ones, I salute these efforts, but in our zeal to start something new I fear we may be overlooking the obvious potential we already have in present programs. In some cases all that is needed is to take some new approaches and infuse some new initiatives in our existing programs.

That is the intent of Senate bill 4445, which I introduced on October 7. This bill would update the Soil Conservation and Domestic Allotment Act, as amended, and broaden the authority of the agricultural conservation program to permit sharing the cost of agriculture-related pollution prevention and abatement measures.

Mr. President, the Department of Agriculture has long recognized the important role of rural America in the Nation's environment. Its programs have progressively helped farmers to make a greater contribution to more enjoyable and healthier living. In particular, the agricultural conservation program has proved itself to be a most effective instrument for stimulating additional conservation of soil, water, and woodland, and wildlife on farmland in all of the agricultural counties of the 50 States, Puerto Rico, and the Virgin Islands. In fact, about 1 million farms and ranches have been participating in the program each year.

Last year in my State of Oregon alone, over 5,000 farms benefited from the agriculture conservation program receiving $2,269,594 in Federal funds on a cost-sharing basis.

Mr. President, for years there has been a growing concern about farm programs which result in huge subsidy payments to a small number of large farm operations. Now the Congress has moved to place a $55,000 limit on crop payments. In contrast to this, beneficiaries of the ACP have always been widely spread, with a limit of $2,500 per farmer. For Oregon, the average payment is about $450, I know of no program which better lends itself to support for the family farm and smaller operations, and which in fact has provided such broadly distributed benefits.

At present, cost-sharing is being provided for agriculture-related pollution prevention or abatement practices that also conserve soil and water. But the expanded authority provided by S. 4445 would permit sharing the cost of authorized practices without requiring that they also provide significant soil and water conservation benefits.

Certainly, no program already in existence, or that could be formulated, would contribute more to the control of water and air pollution in rural America than the cost-sharing provisions authorized in the Soil Conservation and Domestic Allotment Act.

In the case of water pollution, the greatest problem in our streams is sediment. No other program has been so effective in keeping soil out of the Nation's rivers and streams as the cost-sharing program that the Department of Agriculture carries out with farmers and ranchers. Alfalfa, clover, and other legumes hold soil in place and allow maximum insoak of precipitation without runoff. Terracing, strip cropping, and planting forest trees hold water in place and allow better management of this important resource. Every farm pond and small lake is a water treatment plant. They offer an opportunity for soil particles to which chemicals are attached to settle out of the water and into the soil itself.

In the case of air pollution measures, good ground cover of grass, legumes, and trees have helped to recycle oxygen back into the atmosphere. What could be more important at a time when doctors and clinics are warning us of the dangerous rise of emphysema and asthma and other respiratory diseases. Fresh air can no longer be taken for granted. We must plan the use of our resources wisely in order to assure an adequate supply of oxygen in our atmosphere.

Mr. President, I think it is clear that the cost-sharing programs presently authorized under the Soil Conservation and Domestic Allotment Act have been quietly waging war on pollution for years. It is apparent to me that they have not been given their due credit in the field of pollution abatement.

Testifying on the role of Government programs in the antipollution field before a House Appropriations Subcommittee earlier this year, Mr. Milton Fricke, chairman of the Water Resources Committee for the National Association of Conservation Districts, said:

> We think it rather strange that pollution people are seemingly getting such a good press and here the things that we have been doing all these years are being forgotten. If we just had a few more tools we could have done many of the things that they are asking for in another program and we would hate to see another program started.

Mr. President, Senate bill 4445 would make available many of the tools that Mr. Fricke asked for. Let me cite some examples:

First. In many States across the Nation, one of the principal methods of protecting fruit and vegetable crops from frost damage involves the use of smudge pots in orchards, vineyards, and fields. Smudge pots give off smoke along with the heat they are designed for, which often create a severe air pollution problem. S. 4445 would authorize cost-sharing to prevent or eliminate air pollution by such smoke.

Second. In pruning and thinning operations, both in woodlands and orchards, the slash and other wastes are generally burned as a fire prevention and insect and disease control measure, and in some cases to prevent water pollution. The smoke that results from burning often creates a severe air pollution problem. Cost-sharing to eliminate or reduce this hazard by disposing of these waste materials without burning would be authorized under the provisions of S. 4445.

Third. In areas where the production of grass and legume seed are heavily concentrated, and in some rice-producing regions, heavy crop residues are left on the ground after harvest. In Oregon and other States, farmers customarily burn off these residues as a farming management and disease and insect control procedure, thereby creating air pollution problems. S. 4445 would authorize sharing the cost with farmers on pollution control practices to prevent or abate this type of air pollution.

Fourth. Many farm livestock and poultry barns and feedlots or other operations, even under good management, often cause water, air, or land pollution problems. Some corrective measures are presently authorized. However, others, which are much needed are not. S. 4445 would eliminate the need to make detailed determinations of eligibility such as would now be required in many individual cases, and would make possible new and innovative solutions to this growing problem. A feedlot with 60,000 head of cattle is no longer unusual in many areas. A feedlot of this size has the sewage equivalent of a city of more than 1 million inhabitants. If manure is applied at the rate of 10 tons per acre, the annual waste from a 60,000-capacity feedlot would cover approximately 10,000 acres of land. Studies are now underway to determine the maximum amounts of animal wastes that can be applied to the land without reducing crop yield or quality.

Fifth. Farm pesticide and other chemical containers and miscellaneous other waste materials often create land or water pollution problems when they are discarded. Sanitary and safe disposal, of itself, may not also conserve soil and water, but is desirable and needed in the public interest.

In all of these and in other similar cases of farming practices and operations corrective measures and satisfactory equipment to prevent or reduce pollution are known. However, converting to and operating such suitable alternative methods and equipment may be too expensive for individual landowners and operators to accomplish by themselves using only their own resources. Farm families must be concerned first with food, clothing, housing, education, transportation, and taxes. Only after these items are taken care of are most farmers able to move on to the longer term economic, social, and environmental considerations. Also, some of the most-needed antipollution practices themselves may not significantly conserve agricultural soil and water.

If farmers are forced by law and regulations to install air and water pollution prevention practices for the benefit of the public without cost-sharing assistance, a large percentage of them may be forced out of farming and the cost of food and fiber to the American consumers will rise.

Senate bill 4445 would provide authority for cost-sharing assistance to help with the very substantial cost of changing to nonpolluting equipment and methods where the public, not the farmer, is the principal beneficiary.

Mr. President, I have noted with great concern that the President's budget for fiscal year 1971 does not include funding for the ACP. It seems ironic that at a time when there is so much emphasis on ecology and improvement of our environment that we should abandon or reduce an established program which has produced so many conservation and environmental benefits. In view of the strong support for the ACP in the Congress and in the country, I hope that the administration will give further consideration to the continuation of the agricultural conservation program with new emphasis and redirection toward environmental improvement and the problems of agricultural pollution.

The problem of pollution from agricultural sources deserves urgent attention and assistance, I am confident that through this bill we will effectively help the farmers, ranchers, and woodland owners of America to provide a better environment for all of us.

Mr. President, I add the following Senators as cosponsors of S. 4445: the Senator from Kentucky (Mr. COOPER), the Senator from Wisconsin (Mr. NELSON), the Senator from Michigan (Mr. HART), the Senator from Oklahoma (Mr. HARRIS) and the Senator from Hawaii (Mr. INOUYE).

HUNGER IN AMERICA

Mr. KENNEDY. Mr. President, 1 week ago today Americans across this land sat down at tables laden with the bounty of the most productive agricultural system in the history of the world. For families fortunate enough to celebrate Thanksgiving 1970 in that way, it was an enjoyable day. Yet, millions of Americans could not and did not observe Thanksgiving Day with a feast. In fact, many American families barely had enough food for subsistence.

Hunger in America is terribly widespread and totally unnecessary. Too many witnesses have reported to those of us serving on the Senate Select Committee on Nutrition and Human Needs about numbers of children as well as adults who are not getting enough food to sustain life.

Through its efforts, that committee has served to alert and inform the Nation of the critical demanding needs faced by 27 million Americans who do not eat because they are poor.

We on the Nutrition Committee have sought ways to serve those who are needy. Federal assistance programs that are normally intended to serve hungry people are too often administered in a manner that is unjust, inept, or both. The result is that too few people get the help they deserve.

Last week, on Thanksgiving Day, the Senator from South Dakota (Mr. MCGOVERN), the very able and effective chairman of the Nutrition Committee, issued "A statement on hunger in America."

In it he raises questions about why millions of children still go hungry in school; why families cannot get the food they need when our farm stockpiles are continually overflowing with surpluses.

These are the questions, Mr. President, that we on the committee have asked many witnesses. Although some answers have been provided, there remains a formidable task ahead for the committee.

The continued existence of substantial conditions of hunger and malnutrition are inexcusable, humanly unconscionable and economically and socially short-sighted. For those reasons, the battle against hunger must be continued.

I submit that we in the Senate can best continue that battle through the work of the Nutrition Committee. For, during its short life this committee has done more than any other to systematically document and explain the needs and demands of those who suffer because they are hungry.

The Select Committee on Nutrition must continue. There must be a completion of the work that has begun.

In Senator MCGOVERN'S Thanksgiving statement, he has further explained actions that we must take to bring an end to hunger in America.

I ask unanimous consent that the statement of the Senator from South Dakota be printed in the RECORD.

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

A STATEMENT ON HUNGER IN AMERICA

(By Senator GEORGE MCGOVERN)

Today, Thanksgiving 1970, most Americans partake in and give thanks for the bounty they are fortunate to share in this nation. Two years ago, when I began, as chairman of the Senate Select Committee on Nutrition and Human Needs, the fight against Hunger in America, I had hoped to be able to report on a day such as this that not one of our fellow citizens was still without adequate food for his table.

Unhappily, I am unable to make that report for, as millions of us joyously gather with our families, other millions of our fellow citizens continue to suffer from hunger and malnutrition and the illness that follows in their wake.

This is not just an unhappy situation. It is tragic and unforgivable. As a senator from South Dakota, a great farm state, I am acutely aware of the nation's agricultural productivity. America's poor are still hungry not because there is no food to feed them. They are hungry because our people and our government have not yet marshalled the will and resources to end this needless suffering.

That this nation can do what it wills done, there can be no doubt. Ten years ago, President John F. Kennedy pledged we would put a man on the moon by 1970—and we did. It cost $30 billion and we traveled 480,000 miles through the blackness of space, but we did it. In 1956, the Eisenhower Administration pledged us to a system of interstate highways that would comprise the most extensive transportation network built by man. It cost $40 billion and we cut through mountains and crossed great rivers, but we did it.

In May of 1969, the President of the United States pledged that "the moment is at hand to put an end to hunger in America itself for all time." Last Christmas, the President pledged that by this day, Thanksgiving, 1970, every needy child in America's public schools would be fed a free or reduced price lunch.

Neither of these pledges has yet been met. More than 12 million Americans still go hungry at home. As many as four million children still go hungry in school.

Today, each American should ask why this is so. Why a nation capable of fulfilling the most phenomenal technological feats, is incapable of fulfilling its pledge to feed all of its people?

I have my own explanation which I hope some of my fellow citizens will find helpful. Since the President specifically pledged last Christmas, following the Administration's Conference on Food, Nutrition and Health, that by this Thanksgiving every needy school child would receive a free or reduced price lunch, I will discuss the failure to fulfill that pledge first. This failure is all the more disheartening because last spring the Congress enacted P.L. 91–248, a sweeping reform of the National School Lunch Act, which provides that every needy child *shall receive* a free or reduced price lunch. The Congress not only passed the reform, but it actively sought the most feasible regulations possible while committing itself to adequate funding of the program.

At the time the Administration made its pledge, there were 4,066,000 children receiving free or reduced price lunches; the Administration estimated that 6.6 million children, an additional 2,534,000, should actually receive lunches by this Thanksgiving. *Yet the latest available statistics indicate that far from reaching the additional two and a half million children, the program has practically stood still.*

Participation, as of the end of this September, was 4,139,860, an increase of 73,860. This increase represents 2.9% of the Administration's goal; the total of 4,139,860 is 63% of the goal. I, for one, do not consider that goal to be adequate. I agree with Congressman Perkins, chairman of the House Education and Labor Committee, that there are in reality 8.9 million needy children. Using that figure as a benchmark, it means we are really only reaching less than half of our hungry school children.

Thus, a solemn pledge by the Administration has turned out to be about 3% food and 97% empty promise. This is a bitter lesson in the fumbling processes of America's government for millions of her school children.

The Administration, rather than candidly owning up that it has badly missed the mark, is trying to dispute and explain away these figures. First, they claim that the September figure represents a gain of 20% over

September a year ago when participation was 2,960,000. Is this now the measure of success rather than the original goal of feeding every child? If so, then by next September we will be reaching 4,967,832 children, still about 1,600,000 short of the original goal. This is not good enough.

Other reasons offered by the Administration for the poor participation figures for September are: 1) the new regulations to accompany the recent amendments to the National School Lunch Act were not published until September 4 so school officials could not implement them effectively during that month, 2) last spring Congress changed the definition of who is covered by the School Lunch Act and 3) the September figures are not typical.

Each of these reasons is without sound basis.

(1) The regulations: Congress approved a final version of the School Lunch Amendments in April 1970, one month before the President signed the Amendments into law. The Department of Agriculture had one full month to begin drafting the proposed regulations before the Act even became law. Yet, the Department did not issue the proposed regulations until two months after the amendments became law. The Department may claim that the delay in issuing final regulations was caused by the necessity to permit the Congress and the public to suggest changes in the regulations but the critical delay actually occurred in the issuing of the proposed regulations themselves.

(2) Definitions of Eligibility: The Department knew that the definition of who was to be covered (eligible) under the Act was the responsibility of the Secretary of Agriculture in April when Congress approved the final version of the amendments. Any confusion this September over eligibility is clearly the Department's responsibility.

(3) September Figures: September is the month when the bulk of the schools' basic administrative business, including registering children for the lunch program, is taken care of. It is normally a burdensome month but this year it was somewhat worse due to the failure of the Department to present the state officials with the new regulations until five months after final passage of the school lunch amendments. State school lunch directors from all over the nation have conveyed their displeasure to me over this unnecessary delay. There may be some improvement in the figures for October but it is unlikely that whatever increase takes place will approach the goal.

The record clearly shows that we have failed to fulfill our pledge to feed every needy school child primarily because of a lack of Administration follow-through.

Now let me discuss the failure to fulfill the pledge to feed every family. When the President sent his hunger message to Congress in May of 1969, only 6.9 million of an estimated 25 million hungry Americans were receiving food assistance—3.2 million with food stamps and 3.7 with surplus commodities. The President committed the Administration to reforming and expanding the food stamp program, making it the government's primary weapon against hunger, until it reached every needy family. The Senate, taking him at his word, passed a Reform Food Stamp Act in September of 1969 which provides the program and the funds to do the job. When that measure passed the Senate over a year ago, there was a surge of hope throughout the country that we were really about "to put an end to hunger in America itself for all time."

Now, however, we face the incredible prospect that the Congress may adjourn without completing action on food stamp reform but simply extend the operation of the present inadequate program. The prospect may come to pass because of obstructionism by certain powerful members of the House of Representatives and because of an unwillingness on the part of the President and Administration officials to challenge that obstructionism.

The House Agriculture Committee has reported a food stamp bill to the House Rules Committee but the Rules Committee has not given the bill a rule for action on the House floor. It is likely that the House Rules Committee will not meet to give food stamps a rule thereby arbitrarily preventing the House as a whole from passing on this vital measure. I believe it is imperative that the President make clear, publicly or privately, that the time is long past for full House consideration of this major piece of anti-hunger legislation.

If the President permits this Congress to adjourn without completing action on food stamp reform, he will have signalled a major retreat from his promise to bring an end to hunger and malnutrition in this rich nation. If we are to move significantly beyond the 11.7 million persons now receiving food stamps and commodities, if we are serious about helping all 25 million of our hungry citizens, we must have food stamp reform and we must have it now.

I have indicated my disappointment with the progress we have made so far against hunger in this country, as well as my disappointment with the Administration's follow-through on its pledge to feed every hungry school child and every hungry family. They say they have done more than any previous Administration—and it is true. But they have had a clear responsibility to do more. For never have the facts about hunger in America been so clear. Never before have we had scientific evidence indicating the tragic medical effects—stunted bodies and retarded brains—of letting our people go hungry. It is no longer good enough to say we have done more. The time is long past to do it all.

I do not wish to demean the Administration's efforts since it took office. Hunger in America is not a partisan matter. Indeed, I praised those efforts last Christmas, in no small part because of the school lunch pledge and an apparent seriousness of intent regarding food stamp reform. Now, however, I see a disturbing gap between promise and performance.

It is time for the President and Administration officials to close that gap by gearing up their anti-hunger efforts. It is time to stop looking backwards at the limited progress that has been made and time to look forward at how much is yet to be done.

The Administration should admit that we have failed to fulfill the school lunch pledge and move determinedly to ensure that it is met—and speedily. If further action is required of the Congress, for instance to provide even more funds for feeding facilities in schools that have none, then the Administration should seek that action.

The Administration should bring all its influence to bear to get House action on food stamp reform instead of passively standing by while the best hope for feeding America's hungry families, including almost 17 million persons (those not now receiving food stamps and those now on surplus commodities who should be receiving stamps instead) is quietly killed by conservative opposition.

The Administration should revise its restrictive budget estimate for food stamps this year of $1.25 billion and accept the $1.75 billion appropriated by the Senate, an amount that will permit further expansion of the program instead of forcing the Department of Agriculture to keep it in check. The Administration's original budget request is now demonstrably inadequate. At the current rate of expansion, the food stamp program could reach almost 11 million persons by the end of this fiscal year. The cost of this program will be $1,650,000—$400 million more than the Administration is requesting. Further, there are still one thousand counties with surplus food programs, several hundred of which want to switch to food stamps. The $1.75 billion appropriated by the Senate will be sufficient to cover the natural expansion of the food stamp program through the remainder of the fiscal year and permit some of the surplus food counties to switch to food stamps. And, for the next fiscal year, the Administration should request at least $2.5 billion for the food stamp program, the amount authorized by the Senate.

The truth of the matter is that we are still a long way from ending hunger and malnutrition in this great and powerful nation. I believe that the single greatest source of that pressure in the past few years has been the Select Committee on Nutrition and Human Needs. For this reason, I believe the Select Committee's existence should be extended for another year, a year in which we can assure fulfillment of the fight against hunger. I know I will be joined in this effort by all my colleagues in the Senate who have fought so hard during the past two years to end hunger and still see it as a noble goal for this nation.

	Participation	Gains or progress [1]
December 1969 (Nixon pledge) [2]	4,066,000	[3] 73,860
September 1970 (most recent available) [4]	4,139,860	
Goal promised December 1970, 6,600,000 [5]	6,600,000	[6] 2,534,000
Goal estimated (Perkins)	8,900,000	

[1] 2,460,140 gap in promise and delivery.

[2] Percent of pledge being met = $\frac{73,860}{2,534,000}$ = 2.9 percent.

[3] Net gain since pledge.

[4] Percent of needy receiving F/R price lunches now according to administration goal = $\frac{4,139,860}{6,600,000}$ = 63 percent.

[5] Percent of needy receiving F/R price lunches according to Perkins estimate = $\frac{4,139,860}{8,900,000}$ = 46 percent.

[6] Increase needed from December to now to accomplish pledge.

Note: Conclusion. The promise of the administration to see that every needy child gets a F/R price lunch by Thanksgiving 1970, was 2.9 percent food and 97.1 percent promises.

Food stamp program cost, fiscal year 1971—July 1970–June 1971

	Bonus cost
July $6.9 million	$98,098,155
August $7.2 million	102,901,845
September $8.2 million	116,000,000
October [1] $8.5 million	[2] 123,250,000
November [1] $8.8 million	[2] 127,600,000
December [1] $9.1 million	[2] 131,950,000
January [1] $9.4 million	[2] 136,300,000
February [1] $9.7 million	[2] 140,650,000
March [1] $10 million	[2] 145,000,000
April [1] $10.3 million	[2] 149,350,000
May [1] $10.6 million	[2] 153,700,000
June [1] $10.9 million	[2] 158,050,000
Total	1,582,850,000
Additional monthly increase based on geographical expansion of the program	62,500
Total bonus cost from October through June	7,252,000
New total	1,590,102,000
Additional administrative cost [3]	60,000,000
Final total	1,650,102,000

[1] Estimated 3% monthly increase.

[2] Estimated per person bonus cost of $14.50 per month.

[3] USDA estimate.

A REPORT BY THE DEPARTMENT OF DEFENSE ON THE RESULTS OF AN INVESTIGATION OF DRUG ABUSE IN SOUTHEAST ASIA AND A STUDY BY DR. MORRIS D. STANTON OF THE U.S. ARMY

Mr. DODD. Mr. President, subsequent to hearings of the Senate Subcommittee to Investigate Juvenile Delinquency in August of 1970 into the critical drug abuse problem in our Armed Forces, the Department of Defense dispatched an investigative team to Southeast Asia to conduct an extensive study on drug abuse problems among servicemen in that area of the world.

On September 15, 1970, in a letter from the Department of Defense I was given a briefing on that mission and informed that the Juvenile Delinquency Subcommittee would be apprised on the results of that inquiry upon the return to the United States of this team which was headed by Jerome A. Vacek of the Marine Corps.

I have now received the report of the Department of Defense Drug Abuse Control Committee team on its investigation in Southeast Asia and submit it for the consideration of the Senate.

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

OFFICE OF THE SECRETARY OF DEFENSE,
Washington, D.C.

Memorandum for Deputy Assistant Secretary of Defense (M&RA).

1. Pursuant to the instructions contained in reference (a), a Drug Abuse Control Committee Task Force consisting of the below-named members departed the United States on 29 August 1970 for the purpose of inquiring into all aspects of drug abuse among United States military personnel in the Pacific area. In accordance with the subsequent request of the Chairman, Department of Defense Drug Abuse Control Committee, the Task Force also inquired into drug abuse incidents among dependents who are presently residing in or near military installations in the Pacific area.

Mr. Jerome A. Vacek, Team Leader, Marine Corps.

Captain George H. Sult, Assistant Team Leader, Navy.

Lieutenant Colonel Darrell L. Schlotterback, Air Force.

Major William A. Ward, Army.

Mr. Joseph F. Jenkins, Customs—Bangkok.

Mr. Judge A. Dickson, A White House Fellow, OSD.

2. No difficulties were experienced by the Task Force in the conduct of its mission, and the personnel of all commands visited were most cooperative in assisting the Task Force.

3. Awareness of the multitude of problems associated with all facets of drug abuse was apparent at all commands visited. Nevertheless, the Task Force noted a number of inadequacies, summarized below, which appeared to impede the Department of Defense Drug Abuse Control Program.

4. Information concerning drug abuse control educational programs in the Pacific area is contained in Part I of this report. All commands, with the exception of a few isolated units, recognize the drug abuse problems confronting them and have taken earnest action in the form of education, training, enforcement and, in some cases, amnesty programs, in an attempt to meet the challenge.

Nevertheless, in many instances, it was considered that interest and information concerning drug abuse diminished the further down the chain of command you go. As noted in Part I, drug abuse programs implemented or directed at Command or Division level seemed to be ideal and meaningful—in fact almost perfect. However, as the Task Force progressed down toward unit levels, these idealistic programs appeared to filter out and in some cases are completely lost. In short, in many cases, the necessary information is not reaching the trooper with any impact. Moreover, in too many instances, the "stereotype of the establishment" is presenting drug information. As a general observation, the unit commander or first sergeant is not able to properly communicate with the eighteen or nineteen year old serviceman. "A representative of the establishment is 'turned off' immediately." Attachment 3 to this report is also relevant in this regard. Formalized lecture-type classes to the lower enlisted ranks appear to have more disadvantages than advantages, especially when the size of these classes may reach as many as 200–300 personnel. Formalized printed material in drug abuse, and its overall effect as a deterrent to illicit drug usage appears to be limited. Generally speaking, it is not being read by the servicemen in the lower ranks. Command emphasis to the lowest level is required for any drug abuse training program to be truly successful. The best guidance and policy available is useless unless it is insured that its principles are being implemented at the lowest level. Drug abuse education and training should be made an area of interest for command and IG inspections. Peers should be used when feasible to present drug education and training. The Task Force found many young servicemen who have the interest in drug abuse and possess the intelligence and personality to communicate with the young serviceman of today. Medical authorities, chaplains and other professionals should be incorporated into training sessions. Ex-drug users—if sincere and available—should prove beneficial to any training endeavors. Formalized lecture-type classes may be presented to senior noncommissioned officers and officers, however, informal conference type presentations appear to be more effective for the troops. A question-answer approach among small groups seems very desirable for a free exchange of ideas and opinions. A younger individual of the peer group age should be utilized when and where possible. Educational material for the young serviceman must be more appealing and imaginative.

5. Part II of this report concerns DoD Dependent School education and training. Efforts at drug abuse control within these schools are only beginning. The development of effective policies and programs must be a serious consideration of all administrators from the DoD level to the individual school principals. Schools, policies and programs must be totally integrated with the drug abuse control policies and programs of the host military commands. Counseling and clinical treatment resources as well as disciplinary policies must also be thoroughly integrated by the schools and the host military command.

6. Part III of this report brings to light certain military customs deficiencies, particularly on Okinawa. The Task Force considers that the establishment of military customs units, preferably joint, throughout the entire Pacific area is of paramount importance, and would greatly enhance curtailing the drug abuse problem in Asia. At present, military customs inspections for incoming and departing military affiliated personnel in Thailand and Okinawa are limited. Specific details in this regard are set forth in Attachment 1 to this report, and commented on in greater detail in Attachment 3. In Korea, Vietnam, and Japan, austere customs units have been organized and are performing their assigned missions in a satisfactory manner, taking into consideration their limited manpower resources. The R&R processing centers in Vietnam are doing an outstanding job of inspecting all personnel.

7. As evidenced by the contents of Part IV, the liaison and coordination between the investigative agencies of the various services must be improved in drug investigations. There appeared to be a lack of communication and exchange of information on drug trafficking, drug sources, and methods being employed to investigate drug offenses. The majority of the drug investigations were initiated as the result of other type violations (unauthorized absence, assault, theft, etc.). More covert, aggressive action on the part of investigative agencies is required to ferret out drug sources and abusers. The Task Force learned that the average time lapse experienced by most commands awaiting the results of the identification of narcotics, dangerous drugs, and marijuana by the criminal laboratories normally was two to three weeks. In some cases, six week delays had been experienced. This problem should be researched further to determine the cause for the excessive delays and action taken to alleviate the situation. Marijuana detecting dogs were being employed throughout Asia by the commands visited. Law enforcement officials and others characterized the animals as "The greatest thing since Peanuts!" The most frequent, and only, complaint in this area was the insufficient number of dogs available for use. Their deterrent effect appeared to be their greatest asset. Each command should be queried to determine the number of additional dogs required and the Services should take immediate action to procure additional marijuana detecting animals.

8. Whereas current directives require that appropriate entries are to be made in a service record book of each serviceman who receives a drug abuse orientation prior to departure to WestPac, there is no evidence of such compliance. The details of this matter are set forth in Part V of this report.

9. There is a significant drug abuse problem among servicemen and dependents in Asia. In particular the misuse of opiates is increasing. (See Part VI.)

10. Part VII contains a discussion of statistical reporting. The continued use of the documented measures of "cases investigated" by service investigative agencies and "actions taken" by military commanders is recommended. The measure of "cases investigated" has two disadvantages: (1) It inflates the number of actual drug abuse incidents because some allegations are found to be unsubstantiated when investigated; and (2) it provides no measure for drug abuse incidents which do not come to the attention of service law enforcement agencies. Nevertheless, the Task Force recognized the fact that these recommended measures are superior for broad application and interpretation when compared to isolated unit samples or multiple estimates of drug abuse freely given in most locations visited. In this connection, it was the judgment of the Task Force that the detailed reporting of "cases investigated" and "actions taken" cannot provide a precise definition of the scope or magnitude of the problem. However, these measures can sufficiently identify trends related to the problem and these trends can provide an adequate basis for drug abuse control programs.

11. Part VIII contains a discussion of eradication programs. The only command visited that was actively pursuing an eradication program was the Military Assistance Command, Vietnam. They had previously used helicopters in conjunction with Vietnam National Police to locate and destroy marijuana fields. In addition, a bounty is currently being paid the Vietnamese National Police for each marijuana plant de-

stroyed. More detailed comments concerning the aforesaid program are contained in Parts IV and VI of this report.

12. Part IX provides information concerning the amnesty program. Various forms of the amnesty program were in effect throughout the commands visited. Some of the programs were defined in generalities without specific guidance on the various aspects of the program. Any amnesty program officially sanctioned by the military should be defined in detail to include specific guidance in the following areas: (1) Disposition of security clearances, retention of military occupational specialties, line of duty determinations, and retention of incentive pay for those personnel electing to request amnesty; (2) which individual in a unit may grant amnesty; (3) notification of the amnesty seeker's unit commander; (4) maintaining official individual records; (5) the prerequisites for amnesty; (6) and the disposition of personnel who voluntarily leave the amnesty program prior to the completion of recommended treatment. In addition, any amnesty program should be complimented by a vigorous law enforcement program.

13. Part X provides an in-depth report on the drug abuse control program at Clark Air Base, P. I. It describes one of the outstanding programs in the Fart East while pointing up the need for commanders to mobilize all of their related staff resources to combat drug abuse among the military, civilian employee, and dependent populations.

14. Attachment 1 specifically addresses drug abuse control problems on Okinawa.

15. Attachment 2 provides a program outline for a Vietnam Drug Suppression Strike Force.

16. Attachment 3 contains quotes, summarized comments, and observations obtained through personal interviews with approximately 900 officers and enlisted men of all grades and ranks. The comments have sustained a minimum amount of editing in order to preserve the spirit of the original communication. This summary is principally the work of the DoD member of the Task Force who had the role of conducting individual interviews with the "troops." This attachment also contains comments relating to customs and legal matters as they affect the drug abuse control program.

17. It is recommended that copies of this report be forwarded to the Assistant Secretaries of the Military Departments (Manpower and Reserve Affairs) for the purpose of considering and commenting on the Task Force's recommendations and that the Assistant Secretaries disseminate copies of the report to cognizant commands of their Services for such action as deemed appropriate.

Very respectfully,

JEROME A. VACEK,
Chairman, Department of Defense
Drug Abuse Control Committee.

DRUG ABUSE IN SOUTHEAST ASIA

I. OBSERVATIONS AND EVALUATION OF DRUG ABUSE EDUCATION AND TRAINING

A. Hawaii

1. An evaluation of training and education in Hawaii included Navy, Marine Corps, and Air Force activities.

2. In substance, Navy and Marine Corps activities follow the guidelines for drug abuse training and education as set forth in Sec Nav Inst 6710–1A and MCO 6710–1. Until May 1970, there had been no noticeable increase of drug abuse incidents. However, because of the prevalence of dangerous substances on Hawaii, particularly marijuana, all Marine Corps activities embarked on an aggressive program to educate all Marines of the dangers and consequences involved in the wrongful use, possession and sale of dangerous drugs, opiates and marijuana.

3. A member of the Naval Investigative Service Office, Hawaii, provides lectures to Marines at six-month or lesser intervals. Marine Corps CID personnel provide similar services. DOD films and handouts are used along with posters obtained from DOD or commercial sources. Some posters are designed and distributed locally. Service newspapers carry monthly editorials on the pitfalls involved in drug abuse incidents.

4. A more aggressive program, to include the formulating of drug abuse councils and teams is contemplated in the near future.

COMSERVPAC, COMSUBPAC AND COMCRUDESPAL have traveling teams which visit all units within their type commands and provide drug abuse training seminars.

5. A PACAF Drug Abuse Committee has been established with representation from the Offices of Surgeon, Chaplain, Judge Advocate, Security Police and Special Investigations. A Hickam Air Force Base working group with essentially the same membership has also been established. Among the working group membership, the Chaplain completed the National Training Center in Drug Abuse Education Program at Adelphi University, 22 June–17 July 1970. The PACAF Drug Abuse Committee, with the assistance of the Chaplain has proposed a program of PACAF workshops to train additional training personnel who would in turn return to their home bases and conduct drug abuse control programs. This program would have the ripple effect desired of the National Training Center in Drug Abuse programs. Two pamphlets have been published, both entitled "Honest Appraisal of Drug Abuse." One edition is for single airmen and the other is for families. The pamphlets are distributed during an in-processing orientation. A counseling service for drug abusers has been established and 24-hour-a-day telephone contact is available through the medical duty officer or the chaplain duty officer.

B. Okinawa

1. The Marine Corps, Army and Air Force each implement drug abuse policy as it relates to education and training from high level Drug Abuse Control Councils. The councils consider the fact that drug abuse in any shape or form contributes to the problems of discipline, morale, chronic insubordination and increased criminal behavior—all of which may contribute to the derogation of the combat readiness of the respective services.

2. All commanders conduct meaningful educational and training programs. In view of the rapid personnel turnover in Okinawa, it appeared that commanders were sufficiently alert to schedule their presentations as often as necessary. Sergeants and below in the Marine Corps are shown one training film related to drug abuse each month. Drug abuse presentation teams, which are described below, are responsible for making presentations to both military and civilian communities.

3. In view of the limited period of time spent in Okinawa it was impossible to review and evaluate the educational and training criteria for each service. Nevertheless, those evaluated appeared to be programs that met the requirements levied by the Department of Defense and instructions provided by the respective service secretaries, i.e., commanders ensure that all personnel are fully informed of the dangers of drug abuse and that all officers and staff noncommissioned officers become fully involved with their supplementary role in information and education programs. Moreover, it appeared that informal liaison and comments/recommendations in furtherance of various drug abuse programs were especially encouraged.

4. Chaplains appeared to ensure that the moral aspect of drug abuse were included as an integral part of Moral Guidance Programs. Other staff officers were exerting maximum effort toward maintaining a viable, effective drug abuse program. The drug abuse programs included originality, inventiveness and contact with other governmental and civilian agencies dealing with drug abuse.

5. Drug Abuse Lecture teams consist of enlisted personnel in order to avoid any authoritarianism and to emphasize peer group communication with the young user or wouldbe user. From information elicited from key drug abuse officials, it was apparent that drug abuse on Okinawa is a problem which will not be countered by staid, stereotyped measures. Inventiveness, originality and persistence appear to be essential as well as recognition of the fact that the challenge is one which must be combated at every level of command.

6. The services utilizes printed matter developed and distributed by the Department of Defense, Orange County (California) Sheriff's Department and commercial enterprises. No problems have been incurred in procuring printed matter, films, etc. No improvements to the matter made available through Department of Defense courses was offered.

7. It was suggested by those responsible for training of service personnel on Okinawa that kits which contain *simulated* substances which depict handrolled cigarettes of marijuana, opium, etc., *not* be used. Similar remarks and suggestions were made in Vietnam and Thailand.

C. Thailand

1. Both Army and Air Force elements located in Thailand are pursuing an educational and training program which relates to drug abuse. There are Drug Abuse Councils which have been formulated with the view of eliminating the serviceman's involvement with all illicit substances and explaining why drug abuse cannot be condoned within or outside of the military. Membership of these councils consists of enforcement, medical, clergy and administrative representation.

2. Earlier this year, the Army and Air Force established Drug Abuse Suppression Orientation Teams whose initial mission is to travel throughout Thailand and orient and educate all non-commissioned officers on the drug abuse problem. Subsequent missions included presentations to all junior officers. The teams' missions are to present factual military-oriented instructional material in each area represented with the objective of simply presenting facts to their audiences. The teams avoid presenting information which could be construed as threatening their listeners. The team members cover information which concerns the following:

a. Types and effects of drugs (concentrating on stimulants, depressants and marijuana, since these are the most widely used by the military drug abusers in Thailand) and how the non-commissioned officers can cope with the problem (to include knowledge of common hiding places, recognition of users symptoms and what to do if he suspects a person of being a user).

b. Medical aspects, to include psychological and physiological effects of drugs on the user, possible recurring or permanent mental and physical problems resulting from drug use and treatment.

c. Legal aspects, i.e., punishments defined in the UCMJ.

d. Administrative actions that may be taken against the drug user and their effects on the user, or abuser, upon return to civilian life.

e. The Chaplain or his assistant describes the impact of drug abuse on standards of morality and ethics; future family life.

3. The teams leave copies of their lesson plans with each unit commander upon completion of each presentation. The material can be used by unit personnel for further unit level instruction.

4. In discussing educational and training material with cognizant personnel, it was learned that no difficulty was experienced in procuring DOD or other material from their sources. No complaints were made concerning the information used in various training cycles. However, one Air Force activity (388th Tactical Fighter Wing) publishes a "Security Police Drug Abuse Briefing Kit for Supervisors" which was described as an excellent source of information in assisting First Sergeants and supervisors in informing their subordinates of the social, medical and legal damage which can result from the improper use of drugs, including marijuana.

5. Air Force and Army commands in Thailand rely heavily on local publications to inform their members of the inherent dangers involved in drug abuse.

6. Those charged with monitoring the various drug abuse programs in Thailand were highly motivated and showed a genuine interest in their assignments. One junior officer quipped that perhaps "we should clean our houses out back in the States first" averring that judges were prone to give recalcitrants the opportunity of enlisting in a service in lieu of serving in jail for an offense(s) committed in civilian communities. These were characterized as the misfits who invariably find themselves in trouble with the military in drug abuse instances. This same person stated that "top level" interest in drug abuse in the military has been most gratifying in effectuating good programs.

D. Vietnam

1. In recognition of the fact that virtually all types and forms of dangerous drugs, opiates and marijuana are readily available in the Republic of Vietnam, command emphasis has resulted in a wide variety of training and educational programs which are tailored to meet the needs of the unique rquirements of each, individual service and components thereof. Methods and procedures vary considerably from service to command. It was noted that Department of Defense educational and training material was being used, along with other innovations developed locally.

2. For the most part, it was found by the Task Group that most of the installations of all services have formed Dangerous Drug Suppression Councils whose members were carefully selected in order to combine ideas and take advantage of the expertise of staff positions having a functional area which includes cognizance of or concern with drug abuse. These councils generally meet once a month to insure a coordinated program, determine the effectiveness of current measures, and to encourage new ideas attendant to drug suppression. Membership of these councils consists of the clergy, enforcement, legal and medical representation. These councils concern themselves with the following drug abuse related subjects or tasks:

a. The overall approach to the local program.

b. The nature of the drug abuse problems in Vietnam, and trends.

c. How drugs and other illicit substances are being obtained.

d. The effects of drugs on the abusers, his unit and the command.

e. The medical aspects (physiological and psychological effects; personality of the abuser before, during and after involvement; follow-up evaluation, etc.).

f. The role of the chaplain and the church.

g. Modern mores.

h. Current laws, prosecution, sentences, administrative discharge procedures.

i. Amnesty and rehabilitation.

j. New approaches to counseling (layman, medical, ecclesiastical, past users).

k. The effects of narcotics on other crimes.

l. Develop material designed to curb the use of drugs and the physical and legal ramifications or drug abuse; ascertaining that this material is published and appropriately disseminated through all communications channels for the widest possible distribution.

3. Military personnel serving in Vietnam in grades of E–4 and below receive drug abuse orientation on at least a quarterly basis. Some commands place emphasis on training E–5's and above in detecting and reporting suspected drug abusers; however, there were indications that educational and training criteria in this area were superficial.

4. The services in the Republic of Vietnam have a substantial number of Drug Abuse Control Teams which are comprised of legal, medical, clergy and enforcement specialists. These teams travel to virtually all commands on at least a quarterly basis, giving presentations on all facets of drug abuse and why it cannot be tolerated in a military society. Inasmuch as these presentations are informal in nature, a free exchange of questions and answers follows each presentation. These teams have been described as very helpful, particularly in those instances where team members are able to communicate with their peers.

5. There were no complaints of not having received Department of Defense training and educational paraphernalia. Some activities have, however, elected to produce their own posters, averring that the posters produced by the Department of Defense were bland and had no impact. Two major activities elected to purchase handouts (in the form of comic books) and posters from civilian sources.

6. Two of the most widely used and sought films used in Vietnam are "The Florrie Fischer Story" and "Marijuana" both of which are procured from commercial sources by the Department of Defense.

7. All service newspapers and television networks frequently carry incidents of interest which relate to drug abuse and the harmful effects of illicit involvement. Many commanders feel that educational and training endeavors are seriously hampered by what they interpret as irresponsible articles appearing in the "state-side media" which profit from an artificially created climate of emotionalism regarding marijuana. Some commanders likewise commented that troops becoming aware through the media of prominent Americans being arrested for marijuana offenses and the imposition of minimal or no sentences against these offenders has, to a degree, compromised effective and meaningful drug educational programs. It was further stated on more than one occasion that regardless of how elaborate existing training programs may be, there are a substantial number of individuals who began their marijuana usage prior to their enlistment or induction and, notwithstanding administrative and disciplinary sanctions which presently exist, would continue to use it because of its potency, price and availability.

E. Korea

1. During abuse educational and training programs within the Eighth Army are designed primarily in informing the personnel of the inherent dangers involved in the use of marijuana. In this connection, it should be noted that a major contributing factor regarding marijuana is the fact that there is presently an absence of effective ROK legislation governing its use and possession. Prosecution of Korean Nationals trafficking marijuana is impossible at this time. However, on 16 July 1970, the ROK National Assembly passed the "Habit Forming Drug Control Law" which becomes effective on 16 October 1970. At that time, control will be possible.

2. Educational and training programs within the Eighth Army consist of lectures, briefings, and distribution of posters, movies, printed articles and "spots" on both radio and television. Drug abuse has been made a priority topic of discussion in the newly formed drug suppression councils. These are conducted quarterly as a special mission of the Character Guidance Councils throughout the command. A special narcotic section is responsible for presenting effective lectures at all echelons within the command, including parents, teachers and students.

3. A special two-block course of instruction on marijuana and other illicit substances is included in the training schedule at the NCO Academy at Camp Casey and at the Advanced Combat Training Academy at Camp Yong in the DMZ.

4. More recently, the Eighth Army has received six additional drug abuse movies for use in conjunction with lectures and unit training programs. No problems have been experienced in obtaining films and other training materials produced by the Department of Defense; however, there has been a preference toward using films entitled "Marijuana" and "The Trip Back."

II. OBSERVATIONS AND EVALUATION OF DOD DEPENDENT SCHOOLS

A. Clark Air Base, Philippine Islands, and Kadena Air Base, Okinawa

1. A drug abuse control problem does exist within the DOD Dependents Schools and countermeasures in the form of control programs are just now beginning to take shape. This is an area that has been almost void of policy statements. At the two locations where in-depth discussions with military and schools officials were carried on, Clark Air Base, Philippine Islands, and Kadena Air Base, Okinawa, school administrators had not received the Assistant Secretary of Defense (M&RA) policy statement on the subject of drugs, alcohol, and tobacco abuse which is to be contained in a DOD Overseas Dependents Schools curriculum manual.

2. At both locations, two drug education packets, prepared by the Directorate for Dependents Education, ASD (M&RA) have been received and were considered very helpful in preparing for a drug abuse control program within the schools. At Clark Air Base, a school counselor who has completed the program of the National Training Center in Drug Education at San Francisco State College has been assigned the task of developing a drug abuse control program. At Kadena Air Base, the Assistant Superintendent for Personnel who has completed the program of the National Training Center in Drug Education at Adelphi University has been assigned the task of developing a drug abuse control program.

3. Discovered drug abuse among students is increasing. At Clark Air Base, 15 dependent cases were opened for investigation during calendar year 1969; 31 have been opened in calendar year 1970. At Kadena Air Base, juvenile dependents accounted for approximately 10% of 108 cases opened in 1968; 20% of 134 cases opened in 1969; and 28% of 124 cases opened in the period January–August 1970. To maintain a perspective it must be considered that this experience is from a Clark Air Base schools population of approximately 7,500 and an Air Force schools population on Okinawa of approximately 8,000.

4. There is a requirement for DOD policy statements concerning the problem of drug abuse in Dependents Schools including the nature of training to be provided schools administrators, staffs, and students; the use of counseling and guidance resources to treat drug abusers; the use and extent of disciplinary measures; and the nature and extent of coordinating relationships with military commanders and the military community. There is a requirement that this basic policy be uniform throughout the world.

5. The range of disciplinary measures which may be applied to drug abusing students is extremely limited and was found to consist primarily of suspension from school by authority of school administrators

or reassignment of the family, with or without the sponsor, from an overseas location to the United States by authority of the military commander.

6. Counseling and guidance resources available to the DOD Dependents Schools and supported by military referral clinics have not been adequately employed to combat drug abuse within the schools. There must be a realization that suspension from school, although sometimes necessary for the common good of all students, isolates the suspended student physically and psychologically from the peer, teacher, counselor, administrator, and clinical guidance group which could continue to provide positive, rehabilitative assistance in the normal school setting.

7. Transfer of the drug abuser's family from overseas to the United States, found to be used sparingly and only after the most serious consideration of the common good, if used routinely, compounds the problem and simply shifts it to a new location.

B. RECOMMENDATION

Efforts at drug abuse control within the DOD Dependents Schools are only beginning. The development of effective policies and programs must be a serious consideration of all administrators from the DOD level to the individual school principals.

III. OBSERVATIONS AND EVALUATION OF MILITARY CUSTOMS PROCEDURES, INCLUDING THE EXTENT OF EMPLOYMENT OF DETECTION DEVICES

A. Vietnam

1. Concerted efforts have been made by all services and commands to stem the flow of narcotics, dangerous drugs, and marijuana into and out of the country. The 90th Replacement customs activity at Camp Alpha, Tan Son Nhut Air Base, has sound and effective procedures for all incoming and outgoing R&R personnel. Detailed inspections of baggage and other items are accomplished by well-trained military personnel of the Army and Air Force. The pockets of departing individuals are required to be emptied while baggage is being inspected as an example of the detailed inspection being done. Amnesty boxes are being employed and give the individual an opportunity to discard any contraband prior to the customs checks. Inspections of R&R personnel is 100 percent. The use of random checks were not observed.

2. The arrival and departure of Permanent Change of Station (PCS) personnel and personnel on temporary duty (TDY) at Tan Son Nhut Air Base does not receive the 100 percent customs check that the R&R personnel do. By necessity, only random-type inspections are being conducted. Personnel are warned and reminded what items are considered to be contraband and amnesty boxes are available.

3. Random customs inspections are conducted at Da Nang and Cam Ranh Bay Air Bases for all incoming and outgoing personnel on PCS and TDY. Although not specifically observed, the team was informed that 100 percent of the R&R personnel departing Da Nang receive customs inspections at "Freedom Hill" R&R Center.

4. The number and location of Bucky X-Ray machines in Vietnam was actually never determined. Apparently the Bucky X-Rays once owned by the Army were recently transferred to the Air Force for use in APO's. The response to their effectiveness ranged from "useless" to "good." Maintenance and parts replacement appears to be a major problem. Their portability is limited and concern was expressed over the dangers of radiation from their use.

5. Recommendations:

a. That uniform joint customs policies, standards, and procedures be established country-wide in Vietnam.

b. That joint customs units, composed of all services on a percentage basis, dependent on the service population in the area, be organized at each port of embarkation and debarkation. These customs units should inspect on a random basis and those personnel selected for inspection should be given detailed inspections. Aircraft and crew members should be included in these inspections.

c. That a maintenance contract for the Bucky X-Ray machines be procured to insure that those machines owned by the military are working and available as required.

B. Thailand

1. Customs inspections by the military in Thailand are currently limited. USARPAC has directed that customs units in Thailand be formed from in-country resources; however, this has not been accomplished under the pretense that personnel cannot be diverted from their primary mission in order to perform customs functions. As the result of this approach, marijuana, dangrous drugs, and narcotics are being illegally exported from Thailand by military personnel to all parts of Asia, via baggage, cargo, and military aircraft.

2. There was no indicated use of the Bucky X-Ray.

3. Recommendation: That immediate steps be taken to form and organize joint customs units in Thailand to stem the uncontrolled flow of marijuana, dangerous drugs, and narcotics from Thailand to other Southeast Asian countries where US forces are stationed.

C. Okinawa

1. As the result of military legal interpretations, military customs inspections in Okinawa are limited. (See Attachment 1 to this report.) Consequently, a substantial amount of illicit substances are arriving on Okinawa from all parts of the world, particularly Thailand, in the company of US forces arriving in-country. Baggage arriving in Okinawa via MAC aircraft is merely offloaded from the aircraft, transported to a baggage holding area to the rear of the air terminal, where it is later claimed by the owner. During an observation of this procedure, two (2) M–16 rifles were observed being off-loaded at the holding area with nothing more than a baggage claim check attached to them. The physical protection of baggage is minimal. Local Okinawan labor was used to handle all baggage and check claims against baggage checks, and this was accomplished haphazardly.

2. Until recently no checks of any incoming or outgoing aircraft, MAC or military, were being made. Once, periodic checks were initiated, several large quantities (225 lbs) of marijuana were discovered.

3. The Bucky X-Ray is being utilized to a limited degree. The same limitations found in their use in Vietnam also were observed in Okinawa.

4. Recommendations:

a. That immediate steps be taken to form and organize joint customs units in Okinawa. Customs inspections should be conducted to enhance and protect the health, welfare, and morale of the US forces in Okinawa.

b. That the same Bucky X-Ray maintenance contract recommended for Vietnam be procured for Okinawa.

D. Korea

1. Limited customs inspections by the Air Force in conjunction with the Korean Government are currently being conducted. The authority for these inspections result from the Korean Status of Forces Agreement. The inspections are random in nature and depend on the whims of the Korean or Security Policeman at the port of arrival. Those personnel and baggage selected for inspection are given detailed inspections.

2. Eighth US Army is presently in the process of forming and organizing a ten (10) man customs inspections unit utilizing in-house military police strength. (A five man force is now operating.) This unit should be in operation by the end of September.

3. The Bucky X-Ray is not available in Korea.

4. Recommendation: That other customs units be formed and organized to operate at ports of embarkation/debarkation as required.

E. Japan

1. In general, the anti-drug program of the Government of Japan (GOJ) is pursued so vigorously that there is little in-country availability to US personnel of narcotics or marijuana. Dangerous drugs, however, are available at drugs stores throughout Japan if one knows what to ask for by trade name. Offenses that are uncovered are normally prosecuted in local GOJ courts. Upon conviction and imposition of sentence, generally suspended, the person, if under jurisdiction of the US, is removed from Japanese territory. Whether they are subsequently discharged as a result of such convictions varies with the particular services policy.

2. R&R and TDY personnel, along with other US personnel authorized US transportation, are processed into and out of Japan through military bases. These entries and exits are handled more casually by US designated "customs officers" and should be considered as a potential avenue for supplying US forces in Japan.

3. Recommendation: Joint inter-service inspection teams should be established and import-export processing procedures expanded and emphasized.

IV. OBSERVATIONS AND EVALUATION OF ADEQUACIES OF INVESTIGATIONS, LABORATORIES, EMPLOYMENT OF INFORMANT NETWORKS, AND MARIJUANA DETECTING DOGS

A. Vietnam

1. The CID in Vietnam is pursuing all reported violations of marijuana, dangerous drugs, and narcotics within their capability. However, the large number of violations reported to CID in conjunction with the limited number of accredited CID investigators may in some instances preclude the detailed investigation of all reported drug incidents. It also appears that some cases of possession and use of marijuana are never reported to police channels by those personnel observing the offense, but instead are being handled administratively through nonpunitive measures within the unit or by nonjudicial punishment in accordance with Article 15, UCMJ. The Army actively is policing the trafficking of marijuana, dangerous drugs, and narcotics through the use of informants, both military and local national. The availability of all types of drugs in Vietnam, plus aggressive and increased country-wide enforcement efforts, has increased the number of drug incidents in Vietnam, but does not indicate necessarily an increased drug usage factor.

2. The Marine Corps and Navy investigative procedures parallel those of the Army. However, again it appears that not all incidents of use or possession are being reported to police channels, but are being handled administratively by the units. Informant networks similar to those utilized by the Army also are being employed.

3. The Air Force OSI throughout Vietnam was selective in the use of their investigative resources, opening cases only when there was a substantive allegation. Some reports of use or possession are filed for later reference and investigated only if or when a fresh complaint is made or additional substantive facts become available. The limitation of OSI jurisdiction outside air bases requires coordination with other agencies. Informant networks were being employed.

4. The limited Crime Laboratory at Long Binh has decreased the processing time for criminal cases involving marijuana from a 2–3 week delay to as little as 40 hours. The average delay for processing of marijuana cases at the Crime Lab in Japan was indicated

as being 2–3 weeks. Some units in Vietnam have sent personnel to the Crime Lab in Long Binh for on-the-job training (OJT) in the identification of marijuana and they are now processing their own marijuana cases in 4–6 hours. These OJT personnel have been recognized as expert witnesses in unit courts. In other instances, hospital labs have been used for both marijuana and other drug identification.

5. The marijuana detection dogs, some of which have been trained locally, are being employed successfully throughout the country. Their "stay" capability is a weakness. It was indicated that they are effective for approximately 1½ hours per day because of the heat. The dogs currently are being used to search aircraft, mail rooms, baggage, vehicles, and in some instances personnel entering base camps. They definitely are a deterrent to smuggling activities.

6. Recommendations:

a. That additional specialization in the form of a joint drug suppression strike force composed of personnel from all services and Vietnamese National Police be organized and deployed throughout Vietnam to give expert guidance and assistance to the various service investigative agencies and to act as collecting agencies for drug traffic information. (See Attachment 2)

b. That investigators of all services being assigned to Southeast Asia be required to attend, and successfully complete, a drug identification and investigation course prior to shipment to Southeast Asia.

c. That additional marijuana identification facilities be located throughout Vietnam, ideally, one per military region, in order to expedite the processing of marijuana investigations and resultant prosecution procedures.

d. That the number and use of marijuana detection dogs be increased.

e. That the feasibility of utilizing Army Provost Marshal Investigators (PMI) or Military Police Investigators (MPI) to investigate simple marijuana cases be studied. These investigations could be supervised and verified by accredited CID in order to meet required standards. This procedure would release the accredited CID to devote more time and effort to the pushing and trafficking type investigations.

f. That more emphasis be placed on covert investigative techniques and operations to actively search out and investigate sources and trafficking.

B. Thailand

1. Due to the Status of Forces Agreement in Thailand, and the fact that the use or possession of marijuana in Thailand is a misdemeanor, covert, forceful pursuit of marijuana investigations in Thailand by the Army and Air Force seems to be frustrated. Many of the drug investigations initiated in Thailand result from other violations or apprehensions not specifically drug connected. A limited informant network, using both military and local nationals was indicated, but is not being vigorously pursued.

2. The CID detachment in Bangkok has a trained individual in the identification of marijuana. All hard drugs are sent to the Crime Lab in Japan for identification. The usual time delay is 3–6 weeks.

3. The Air Force is using a marijuana detection dog on a limited basis. The Army is scheduled to receive a dog in the near future.

4. Recommendations:

a. That more emphasis be placed on detecting and investigating sources of marijuana and drug supply. All service investigative agencies in Thailand should move from the passive role to the aggresive role in carrying out their drug suppression programs.

b. That additional marijuana detection dogs be procured and that they be used on a regular basis throughout the country.

c. That a joint marijuana identification facility be established in Thailand for use by all services.

C. Okinawa

1. Investigative efforts by all services are considered adequate. Aggressive informant networks have been established and are useful. The major problem is the lack of customs inspections, and the inability of the military to take appropriate punitive action against dependents and "passport civilians," many of who are ex-servicemen.

2. The Army and Marine Corps both have and employ the marijuana dogs to some extent; however, an unresolved legal question currently is hindering the employment of the dogs on Marine bases. However, corrective action in this regard was anticipated no later than 1 October 1970. The Air Force is utilizing other service dogs to periodically search incoming and outgoing military aircraft.

3. The Marine Corps has established its own marijuana identification capability and has enjoyed good results from it. The Army and Air Force use the Crime Lab in Japan exclusively.

4. Recommendations:

a. That additional marijuana dogs be procured and used on a more frequent basis.

b. That a joint marijuana identification facility be established and centrally located in Okinawa for use by all services.

c. That the political or legal ramifications prohibiting the prosecution of "passport civilians" residing in Okinawa be researched and resolved as soon as possible.

D. Korea

1. The Air Force policing of drug abuse is limited to its bases. They indicated that they do not have a drug problem of any size. The Army on the other hand is involved deeply in the pursuit of drug investigations and has received the cooperation of the Korean police in raiding and suppressing known marijuana and drug sources.

2. At present, the use, possession, or growing of marijuana under Korean law is not a crime. Therefore, marijuana is readily available throughout the country. In fact, marijuana is grown by the Korean farmers as an agricultural product for the use of its hemp. The flowering tops and leaves were considered a useless product until the American demand made it otherwise.

3. A Korean law, due to become effective in November 1970, will outlaw the use of marijuana as a drug but will not prohibit its growth for industrial use.

4. All drugs, including marijuana, are sent to the Crime Lab in Japan for identification. Estimates of time lapse ran from 6 weeks to as little as 10 days.

5. The team was led to believe that informants in Korea were not required, since they knew the sources of drugs. The biggest problem is speedy prosecution and Korean cooperation.

6. Recommendations:

a. That a joint marijuana identification facility be organized in Korea for use by all services.

b. That the use of "off-limits" be utilized to curb the use of Korean drug stores as a source of dangerous drugs.

c. That a monetary award system be implemented to enhance the Korean police to suppress drug suppliers.

E. Japan

1. Indications are that the drug problem in Japan is minimal when compared to other countries visited. This is attributed to the strict enforcement procedures by the Government of Japan. Their customs procedures are effective and act as a strict deterrent to the import of marijuana and drugs. Also, the harsh punishment dealt out by the Government has deterred widespread abuse by U.S. forces. Consequently, investigations by U.S. forces of drug offenses is less than any country visited. Investigations that have been conducted have been detailed.

2. The Crime Lab in Japan is utilized by all services and is considered adequate. Time lapse for marijuana is approximately one day while harder type drugs average 2.8 days.

3. Recommendation: None.

V. SPOT CHECKS OF SERVICE RECORDS TO DETERMINE IF SERVICE PERSONNEL RECEIVE DRUG ABUSE ORIENTATION PRIOR TO DEPARTURE TO WESTPAC AND NOTATION OF SUCH ORIENTATION WAS PLACED IN SERVICE RECORDS AS REQUIRED BY DOD DIRECTIVE 1300.11

A. General observations for all countries visited

1. As the result of discussing the subject matter with commanders at all levels in all countries visited, it was determined that, except in rare instances, entries were not being placed in Service Records to show that service personnel had received drug abuse orientation prior to their departure for SEA activities.

2. Notwithstanding the foregoing, numerous service personnel were asked by the team if they had in fact received such orientation prior to their deployment. In all cases, these service personnel stated that they had.

3. Recommendation: That the services be requested to reemphasize the necessity of commanders making inclusions in the Service Records of all servicemen who receive drug abuse orientation prior to transfer to WESTPAC, as rquired by DOD Directive 1300.11.

VI. EXTENT OF PROBLEM IN AREAS OF MARIJUANA, DANGEROUS DRUGS, AND OPIATES, INCLUDING DEPENDENT INVOLVEMENT/COOPERATION AND WORKING RELATIONSHIP BY MILITARY LAW ENFORCEMENT COMPONENTS WITH LOCAL CIVIL AUTHORITIES

A. Hawaii

1. The drug culture within the United States has extended its influence to the Honolulu environs. This is significant both as to substances used and availability. Therefore, the drug abuse prone military person has ready access to marijuana, the dangerous drugs, and hard narcotics as is common to the large cities of the mainland. As usual marijuana use predominates. According to information provided by a group of Marines, marijuana is as procurable in the Waikiki area of Honolulu as it is in Vietnam.

2. Unfortunately, dependent use contributes to the overall military problem. Aside from the deterrent fall-out derived from education, little or no minimal restraint can be exercised by the military in handling incorrigible, abuse prone dependents. Military controlled schools may disenroll a dependent and this course of action has been taken, but at best, this is not a satisfactory solution since the drug abuser is still left in the military community with apparent adverse results. Removal of the dependent and/or sponsor has proved to be the best solution. It is realized that some dependents who do not enjoy the Honolulu area will maneuver to cause their removal from the Islands.

3. Military Law Enforcement and Civil Authority Cooperation:

a. Civil and military law enforcement cooperation and coordination in the Honolulu area is being practiced with apparent mutual respect on each side.

b. The U.S. Army is bearing the burden of Hawaiian Armed Services Police support.

4. Recommendations:

a. Establish a Drug Abuse Council with motivated representatives from all services.

b. Combined investigative knowledge of pushers, substances, and areas.

c. Interrelate to take advantage of some of the excellent education and training now in practice by some commands.

d. Set up mandatory training for dependents involved in drug abuse. Subsequent drug abuse involvement will require return to mainland for sponsor and dependent.

e. Monitor and provide as required assistance for education in DOD schools.

f. Maintain statistics for drug abuse on military personnel and dependents.

B. Vietnam

1. Drug abuse is a U.S. military problem in Vietnam. Concern on the part of the Vietnamese centers around supplying the substances the U.S. drug abusers demand. Saigon prevails as the focal point for drug abuse traffic by virtue of:

a. Being adjacent to the delta region where marijuana is grown.

b. Its dense Local Nationals (LN) population where competition for the dollar keeps the price low and provides ready availability for the U.S. military.

c. Off base liberty for military personnel is routine.

d. Its being the hub or international and in-country transportation.

e. Insufficient enforcement.

f. Large numbers of drugstores for purchase of the amphetamines and barbiturates.

2. The substances most frequently used by U.S. military personnel are:

a. Marijuana—Vietnam, Thailand, Cambodia origin.

b. Dangerous Drugs—amphetamines and barbiturates of local source and French manufacture—a little LSD by mail from U.S.A.

c. Hard Narcotics—opium, heroin in crude form called "red rock." Also heroin in pure form with high percent of purity—85 to 98%. Some of the Local National pushers have called the powdered heroin cocaine. Hard narcotics are generally noted to be on the upswing as the steady marijuana user looks for more of an escape from reality.

3. Drug abuse substance availability decreases with an increase in distance from established bases. As one progresses from Saigon to the North, off-base liberty is not authorized; therefore Local National employees, etc., comprise the source for US military. At forward fire bases the accepted and recognized interdependency of each person provides self-policing for survival. The noncommissioned officers generally agreed that peer suppression and supervisory personnel would not condone drug abuse in the forward combat areas.

4. In the area of Nha Trang and Can Tho where off-base liberty again was authorized, drug abuse problems were more frequent.

5. As an overall observation of use within Vietnam of the various forms of drug abuse by US military personnel, the Saigon area is by far the most critical, next to the delta region, and last in usage is the area north of Saigon. To attempt to assign an overall estimate of persons who have been involved in drug abuse in one form or other and to any degree would be presumptuous. Any sampling or survey is indicative of use in that local area in-country and should be so understood. It is mutually agreed by all team members that the news media in the US have grossly inflated the extent of drug abuse by US military personnel in Vietnam.

6. Recommendations:

a. Continue education efforts. The combined drug abuse council established by COMUSMACV is essential for interservice coordination.

b. Impress USAF commanders with the actual facts of in-country drug abuse by their personnel through greater OSI activity.

c. Marijuana crop eradication through sophisticated detection and destruction of marijuana fields. As an interim measure give the Federal Bureau of Narcotics and Dangerous Drugs representative more helicopter support.

d. Use more marijuana dogs.

e. Tighten customs.

f. Review the desirability of off-base liberty for all in-country commanders against accessibility of drugs.

g. Use the combined investigative knowledge provided by the council to suppress distribution.

h. Control the sale of amphetamines and barbiturates at local drugstores.

7. Military law enforcement and civil authority cooperation. Observations:

a. Cooperation of civil authority as observed by the commanders in each area the team has visited has been favorable.

b. The effectiveness of civil drug abuse suppression forces varies with their training, numerical strength, local leadership.

c. While the Vietnam Bureau of Narcotics is under the Judicial Police Force, it still is relatively new and inexperienced. Its forces still are small in number.

d. Policing of rural/small towns left to local leaders.

e. National police force in Vietnam consists of about 88,000 individuals.

f. United States agencies, Federal Bureau of Narcotics and Dangerous Drugs, and military investigative forces all are helping the civil authorities to channel their efforts in drug abuse suppression.

g. Civil agents have seized heroin for the first time.

h. Civil police have been cooperating in marijuana crop eradication programs, particularly when U.S. resources are available.

8. Recommendations:

a. Continue assistance in education of civil agents.

b. Increase scope of eradication program.

c. Impress the civil authority with the dangers of drug abuse to U.S. military personnel through education and economic measures the U.S. may be forced to impose.

d. Establish a drug suppression strike force.

C. Thailand

1. Bangkok, Thailand, is a clearing house for all drugs in the Far East.

2. All drug abuse substances are readily available at cheap prices.

3. The scope of use of drug substances is about the same as in Vietnam except for the crude heroin in rock form. This is more prevalent in Thailand.

4. Marijuana grown profusely in-country. Very high THC content. Available for sale everywhere. About $1.50 a tailored pack. By Thai law marijuana traffic and use is a misdemeanor.

5. Drug abuse in Thailand as in Vietnam is a U.S. military problem. The Thais contribute to the problem by supporting the U.S. military demand.

6. Marijuana use predominates for an overall usage of about 90% of the total traffic.

7. Amphetamines of French and U.S. manufacture are available in all drugstores without restraint.

8. Barbiturates of U.S. manufacture also available in drugstores.

9. Heroin is on the scene in all forms:

a. Purple Rock—Luck Strike—common, 20% heroin.

b. Red Rock—less common, 20% heroin.

c. Black Rock—rare, 20% heroin.

d. White Powder—85% to 90% heroin.

10. Little to no pushing by U.S. military personnel for obvious reasons.

11. Some substances being mailed to U.S.

12. No marijuana eradication program.

13. The majority of U.S. military personnel do not have families in-country therefore dependent drug abuse is not a large problem. However, some dependents have been returned to CONUS.

14. Opium traffic in-country attributed to Laos source.

15. Recommendations:

a. Increase the number of marijuana dogs in-country.

b. The U.S. military forces should establish a combined drug abuse council to coordinate investigative effort, and interrelate between the services in all areas of drug abuse control.

16. There is little inter effort here since Thailand does not include drug abuse as part of its culture. Thailand's attitude toward suppression shifts the burden on the U.S. which brought the problem into the country.

17. The Thailand police have little interest in marijuana suppression.

18. One marijuana eradication sweep was made last year with dubious results. No further eradication plans are contemplated.

19. Known opium poppy fields exist in the highlands of North Thailand.

20. No tightening up of sales of dangerous drugs in drugstores is contemplated.

21. Recommendations:

a. Recognize that civil law enforcement of marijuana is nonexistent and increase U.S. military surveillance.

b. Establish a U.S. military drug abuse council at MACTHAI level to help coordinate the overall suppression efforts in-country.

c. Review off-base liberty program.

D. Okinawa

1. The Okinawa culture being of Japanese ethnic genesis is not drug abuse prone. Again, the problem of drug abuse in a foreign country is a U.S. military induced problem concerning U.S. forces and dependents.

2. Essentially, drug abuse substances are imported mostly by U.S. personnel—active duty U.S. military personnel, ex-U.S. military personnel and U.S. military personnel in some degree of unauthorized absence (deserters, absentees). Investigative personnel have determined that the large force behind the illegal import of drug abuse substances is centered around a group of ex-U.S. military personnel now in Okinawa for the express purpose of drug traffic. At least 12 have been identified but no action has been taken to deport them. Reluctance on the part of U.S. authorities to coordinate with Okinawa civil authorities is apparent in the lack of removing for cause, U.S. citizens of detrimental influence.

3. Marijuana is the major drug abuse substance. This apparently is smuggled in from Thailand and Vietnam on U.S. military and charter airplanes—predominately through Kadena, and Naha to a much less extent.

4. Dangerous drugs are available in all drugstores.

5. Small amounts of heroin and hard narcotics are being used.

6. Inspection of incoming baggage and passengers at Kadena and Naha is a U.S. problem. At present, limited inspection of a customs type exists. This is a critical requirement needed to stop drug and other illicit traffic.

7. Seven marijuana-trained dogs presently are on the island.

8. Dependent drug abuse also is part of the U.S. military problem. School age dependents of the U.S. forces number 15,000.

9. There is little overall coordination between the U.S. services to combat drug abuse.

10. As noted in Part I of this report, the USAF, the U.S. Army, and the USMC are moving towards good educational programs. The USAF has taken the lead in the Okinawa area with top level impetus.

11. Department of Defense schools have started drug abuse control education.

12. Recommendations:

a. Establish a U.S. forces drug abuse control council to coordinate:

(1) Investigative knowledge.

(2) Educational efforts for service personnel.

(3) Educational efforts within the DOD school system.

b. Set up an inspection system for all incoming personnel to Okinawa—prime objective to eliminating drug traffic.

c. Deport US citizens responsible for drug traffic.

d. Increase the number of marijuana detecting dogs in-country.

e. Set up a combined service laboratory for marijuana analysis.

f. Deport dependents involved in drug abuse who do not respond to educational efforts. Parents should be required to participate in a special educational program when their dependents become involved in drug abuse.

13. Military Law and Civil Authority Cooperation:

a. Civil authority cooperation with US military law is passive. There is no effort on the part of Okinawan police to curtail US military drug abuse or traffic.

b. Most drug abuse cases occur off base in the civil environment.

c. Of the 15,000 military dependents in schools, 8,000 are USAF sponsored. The Air Force estimates 30 percent of their drug cases are juveniles. Therefore, policing and apprenhension of dependents rests with US military investigative forces—CID, NIS, and OSI.

d. Okinawa has no civil customs type inspection effort which could be used to augment or contribute to required US military inspection of arriving aircraft.

14. Recommendation:

a. No active participation from Okinawa civil authorities should be anticipated in the area of drug abuse suppression, therefore, US military coverage should include all elements of suppression from customs type inspections of arriving aircraft through detection and apprehension of users.

b. Since the Okinawan government does not provide customs type inspection for arriving aircraft, it is urgent that the US take priority measures to stop the flow of drug abuse substances into Okinawa by military controlled flights.

E. Japan

1. In general, the anti-drug program of the Government of Japan (GOJ) is pursued so vigorously that there is little in-country availability of US personnel of narcotics or marijuana. Dangerous drugs, however, are available at drugstores throughout Japan if one knows what to ask for by trade name. Offenses that are uncovered are passed to the GOJ (or are developed by GOJ) and are prosecuted in local courts. Upon conviction and imposition of sentence, generally suspended, the person, if under jurisdiction of the US, is removed from Japanese territory. Whether they subsequently are discharged as a result, varies with the particular services policy.

2. Rest and recuperation (R & R) and temporary duty (TDY) personnel along with other US personnel authorized US transportation are processed into and out of Japan through military bases. These entries and exits are handled more casually by US designated "customs officers" and should be considered as a potential avenue for supplying US in-Japan forces.

3. Recommendation: Joint interservice inspection teams should be established and import-export processing procedures expanded and emphasized.

4. Crime Laboratory:

a. With the exception of the crime laboratory now established in Vietnam (which does not analyze narcotics), all forensic technical work for the Pacific theater is accomplished at Camp Zama. The lab and technician capabilities are quite excellent. Two situations occur, however, which if modified may enhance investigative and enforcement knowledge and capabilities in the narcotics field.

(1) Analysis of the material submitted does not result in a written report to the submitting criminal investigative unit giving a qualitative factor. As a result, the investigator has no idea whether the violator was dealing with 10 percent or 100 percent heroin, and cannot conclude whether he should pursue aggressively the investigation from the standpoint of trying to eliminate a dangerous trafficker and supplier (100 percent case), or whether the violator should just be processed for courts-martial (10 percent case). It would seem that based on this knowledge, the latter course would be the rule. In addition, the tendency is not to report other chemicals detected in the sample submitted unless they also happen to be an illegal narcotic prohibited by law or regulation. This strange position ensues even though the other material may be toxic and dangerous. As an example: We learned from various units visited throughout Asia that so called "Red Rock" heroin was alleged to contain a quantity of strychnine. This could not be confirmed from lab reports returned to the criminal investigative field units. Discussion at the Zama lab revealed that analysis *had* been performed on some samples and that it had been determined that the samples in question had contained 10 percent heroin, 40 percent daffeine, 2 percent strychnine, and 48 percent inert material. It is felt that all such information should be given to the investigative unit involved, formally, as potentially important for further investigative efforts and for its possible psychological effect. Such information could be significant as a deterrent factor if given to troops during their narcotic orientation and training programs.

(2) The criminal laboratory at Zama, or some other single place, should be charged with keeping substance statistical information for the entire Asia area. Such information as (a) the number of seizures made, (b) the quantity seized, (c) the purity if known, (d) other substances found if any, (e) and other factors such as possession only, or possession for sale, or wholesale trafficking, etc. Such statistics should be maintained by country of discovery at least. In some areas, possibly, by smaller geographical designator. Original source should be shown if determined.

VII. GENERAL COMMENTS AND OBSERVATIONS OF DRUG ABUSE STATISTICAL REPORTING

A. The standard data base for reporting drug abuse incidents in all services in all locations is the number of cases investigated by the respective service investigative agency. This measure has two disadvantages: (1) It inflates the number of actual drug abuse incidents because some allegations are found to be unsubstantiated when investigated; and (2) it provides no measure for drug abuse incidents which do not come to the attention of service law enforcement agencies. Despite these two disadvantages, number of cases investigated provides the most important measure of drug abuse as service delinquency. Its leading attribute is that each incident reported is supported with a written report of investigation which serves as the basis for appropriate action by the military commander. The number of cases investigated has been rising in all services and it was a consensus of opinion among investigators contacted that this rise was a function of increased use among servicemen and of increased detection due to the training of commanders and supervisors in matters related to drug abuse. Increased enforcement activity, with some agents specializing in drug abuse cases, has also contributed to the rise in cases investigated.

B. There are other measures involving action taken on cases investigated which can be used to plot trends and analyze the drug abuse problem within the military services. In order of severity of action they include:

1. Number of courts-martial by type; General, Special, and Summary.

2. Number of nonjudicial punishments under Article 15, UCMJ.

3. Number of administrative board actions by type of board and character of discharge.

C. Number of cases in which no recorded action is taken. Currently, this measure includes unsubstantiated cases for which no action is appropriate as well as substantiated cases which are handled by unit counseling or local rehabilitation measures without recourse to other punitive or administrative measures.

D. The measures of action taken will always be delayed for direct comparison with individual cases investigated. This is not a particular disadvantage for the value of the measures of action taken lies in the ratio of each type of action to the others. Each of the measures of action taken is supported by documentation except the negative category of no action taken.

E. The documented measures of cases investigated and actions taken are superior for broad application and interpretation when compared to isolated unit samples or multiple estimates of drug abuse freely given in most of the locations visited. The documented measures have both reliability and validity.

VIII. EFFECTIVENESS OF ANY ERADICATION: SMUGGLING ENFORCEMENT PRACTICES BEING EMPLOYED BY FOREIGN GOVERNMENTS AND WHETHER MILITARY RESOURCES CAN CONTRIBUTE TO THESE ENDEAVORS

A. Vietnam

1. Attempts have been made by Military Assistance Command, Vietnam (MACV), in conjunction with the Bureau of Narcotics and Dangerous Drugs (BNDD) representative in-country to locate and destroy fields of marijuana growing in Vietnam. Small helicopters have been employed, when available, to locate and direct the destruction of marijuana plants. An awards system to enhance the desire of the Vietnamese National Police to locate and destroy marijuana has been instituted with some good results.

2. The US military has been reluctant to provide the small, unarmed helicopter for the program. In order to locate the marijuana fields, the helicopters must fly at 120 feet at a speed of approximately 60 knots. To say the least, this is hazardous duty when in a combat environment.

3. As an incentive for the National Police to participate in the eradication program, one piaster per plant currently is being paid. It is anticipated that the bounty will increase to two piasters per plant for added incentive.

4. A Narcotics Bureau recently has been organized under the Vietnam National Police. Its missions are:

a. Studying plans and measures to eliminate narcotic violations.

b. Conducting investigations on a country-wide basis of significant or important cases.

c. Developing an educational program on narcotics for the general public.

d. Establishing and maintaining narcotic statistics on a country-wide basis.

e. Maintaining liaison with other public and law enforcement agencies.

f. Conducting training programs and seminars in narcotic suppression.

This bureau is still in its embryonic stage and when fully developed will enhance the narcotic enforcement in Vietnam.

5. As noted in Part IV of this report, the BNDD Agent, Vietnam, has developed a plan to form and organize a narcotic suppression and eradication team. This team would be composed of approximately 20 individuals who would be trained in the identification of marijuana and then travel throughout Vietnam on a systematic basis attempting to locate and destroy marijuana fields.

6. Recommendations:

a. That the helicopter eradication concept in Vietnam be studied in detail and if determined to be feasible and within the capability of the command, that necessary heli-

copters, personnel, and other equipment be made available on a priority basis.

b. That additional incentives, monetary or otherwise, be offered the Vietnamese Government to assist in the eradication and/or suppression of marijuana and drugs.

B. Other countries visited

1. There apparently are no concentrated efforts at the suppression or eradication of marijuana in any of the other countries. Limited eradication has been carried out with limited success in Thailand. Large seizures of imported marijuana have been made recently in Okinawa, the largest being 225 lbs.

2. Japan's policy on any type of drug is strict.

3. Recommendations: None.

IX. OBSERVATIONS AND EVALUATION OF THE AMNESTY PROGRAM

A. General

1. The idea of an amnesty program for drug abusers was conceived in Vietnam in October 1969 so as to open the door to an individual with a drug problem and who earnestly is seeking help. It advocates help in solving a drug problem without the fear of punishment. The overall program stems from the belief that an individual who recognizes his drug dilemma and desires aid in resisting both psychological and physical dependence should not be punished, but, on the contrary, should be encouraged to seek help.

2. In the 4th Infantry Division, an individual with a drug problem seeking help may make his desire known to his first sergeant, sergeant major, unit commander, surgeon, chaplain, psychiatrist, or judge advocate. However, the individual is ineligible for amnesty if he currently is under charges or investigation relating to an offense involving drugs. The rehabilitative procedures of the program are available to everyone.

3. Once the individual has sought help, his unit commander is apprised of the situation and he is referred to the surgeon at which time medical aspects of the problem are discussed. The degree of dependence, tolerance level, hospitalization, etc., are determined and programmed.

4. A buddy (a respected friend) is assigned to the individual as a means of providing self-assurance. Continued counseling sessions, as required, with the chaplain, surgeon, and commander are carried on. Command emphasis at all levels using the proper application of the principles of leadership is professed to be the keynote to the program.

5. Between the period October 1969–31 August 1970, a total of 165 personnel within the 4th Infantry Division have sought help through the amnesty program. Follow-up statistics of the program's success were not available.

6. Other amnesty-type programs encountered during the trip were as follows:

a. "Operation Help," Bangkok, Thailand.

b. "Impact Center," US Army Medical Center, Ryukyu Islands.

c. Amnesty Program, USARV.

d. The 7th Infantry Division, Korea, is about to launch a program entitled, "Half-Way House."

B. Comments

1. In order for any type of amnesty program to be valid and sincere, definite ground rules and definitions have to be established and publicized. The word "amnesty" connotes freedom for any type of action. In reality, this is not the case, and rightfully so.

2. It generally is agreed upon that no type of punitive action will be taken against an individual who seeks help with a drug abuse problem provided that he already is not under investigation from a drug connected offense. However, the phrase "punitive action" must be further defined to better clarify its meaning. The termination of flight status, the suspension of a security clearance, or the withdrawing of an initial Military Occupational Specialty (MOS) is administrative but yet punitive in nature.

3. If an individual seeks amnesty and is granted same, but then requires hospitalization for the treatment of withdrawal, consideration should be made for determining line of duty status. A decision for this type situation has to be made and publicized to add validity to the program.

4. The number of times that an individual may be granted amnesty also must be considered and spelled out, or we may be condoning the use of various type drugs for experimentation.

5. Specific guidance on the disposition of an individual seeking amnesty must be made clear.

6. A determined enforcement program against drugs must be in force in order for an amnesty program to work. Pressure must be applied to make it hard not to get caught, so amnesty will be sought after, or it may become an open door for experimenting.

C. Recommendations

1. That additional evaluation be made to determine the feasibility of adopting the amnesty program.

2. That if the amnesty program is considered feasible for adoption then specific guidance be issued on the following points:

a. Exactly what amnesty does and does not authorize an individual, i.e., retention of flight status, MOS, security clearance, punishment, etc.

b. Line of duty determinations.

c. Number of times that an individual can participate in the program.

d. Whether amnesty action will become a part of official records.

e. Policy of notifying unit commanders when an individual enters the amnesty program.

f. What specific individuals within an organization a person seeking amnesty can turn to.

g. Whether the individual retains the same duty upon entering the program or is transferred to other duties, and under what circumstances.

h. What the consequences are for the individual who voluntarily leaves the program before completion.

X. EVALUATION OF THE DRUG ABUSE CONTROL PROGRAM AT CLARK AIR BASE, PHILIPPINE ISLANDS

A. Visit data and contacts

1. Clark Air Base, Philippine Islands, was visited by a single task force member 9–12 September 1970, while other members of the task force continued their tour of Vietnam.

2. Formal contacts were made with command and staff officers of the 13th Air Force and the 6200th Air Base Wing. Many other persons in the various staff sections and agencies on base were also contacted informally. Material developed for and discussed in this report is a product of both the formal and informal contacts.

B. The problem

Clark Air Base is experiencing an increase in drug abuse. In 1969, 125 cases came to the attention of the Security Police. As of 8 September 1970, 190 cases have come to the attention of Security Police during this current calendar year. The largest group percentage increase was among USAF dependents.

C. The program

The approach to the problem has included information, education, and enforcement:

1. Following the death of two airmen from an overdose of barbituartes in February 1970, the Wing Commander mobilized his information office staff for an all-out campaign against the use of drugs. The base newspaper, "Philippines Flyer," carries educational articles, editorials, and news items related to drug abuse control. The 4 September 1970 issue had three major items on the subject "18 Teenagers Held for Narcotics Use," "Three Airmen Get BCD's for Marijuana Possession," and "One Mistake May Ruin Your Life." The Armed Forces radio station broadcasts one-spot announcements every hour. On TV, drug abuse control is given one or two prime spots each evening. From midnight to 5 AM, drug abuse control message are inserted during a "hard luck" music program. Some parents have brought their children to the radio/TV studios for a rerun of broadcast materials.

2. The Information Office staff was critical of some materials released for use by Armed Services radio and TV. They specified a five-minute radio release tape by an Illinois judge who seemed to be pro-marijuana, and two recordings, "Ruby, Don't Take Your Love to Town," and the "Ballad of John and Yo-Ko," the latter from the Beattle's nude album.

3. Responsibility for drug abuse control training has been assigned to the General Military Training Office. Specialized personnel, including chaplains, doctors, OSI special agents, Security Policemen, lawyers, and others are included as part of the training staff. The program requires orientation, annual refresher, and predeparture training. This program has been informally expanded to include military dependents and interested local nationals in adjacent Angeles City.

4. The Wing Commander meets each workday morning with the OSI Commander, Chief, Security Police, and the Staff Judge Advocate for a review of incident reports accumulated during the past twenty-four hour period. Initial decisions are made on actions required for each incident to include incidents of drug abuse. Newsworthy items are passed to the Information Officer. The OSI has three special agents and one supervisor specializing in drug abuse cases. The Security Police have one specialized investigator. These agents and investigator are supported by the intelligence gathered by other agents and Security Police strength of approximately 800. An informant network is maintained. Coordination with local officials is maintained, joint operations are conducted, and there is an increased awareness of the dangers of drugs among Philippine enforcement officials and the citizens of Angeles City. This interest is being exploited and speakers from the base are providing drug abuse control lectures to local civilian groups. Possession or use of marijuana is a violation of Article 190, revised penal code of the Republic of the Philippines law. Barbiturates, however, are not controlled.

5. The education program is supported by an imaginative chaplain's program to reach youthful airmen. Coffee house sessions are held each Friday evening for unaccompanied and single airmen. Invited guests are placed on the "hot seat" for spirited communication with the attending group. The staff chaplain was formerly stationed at Amarillo Air Force Base when the 3320th Retraining Group was located there, and acquired a down-to-earth approach toward changing attitudes and behavior. The Catholic chaplain conducts a weekly "Rock Mass" which is known for its "standing room only" crowds. Every effort is made to get airmen involved in programs of commitment to occupy both time and talent. Rapport is indicated by the fact that 131 privileged drug abuse counseling sessions were conducted by chaplains during Fiscal Year 1970. This was a phenomenal increase over past periods.

6. A program for drug abuse control has not been fully organized within the DOD Dependents Schools. The District Superintendent has not received the Assistant Secretary of Defense (M&RA) policy statement on the subject of drugs, alcohol, and tobacco abuse which is to be part of the DOD Overseas Dependents Schools curriculum manual. He had received two drug abuse educational materials

packets from the Directorate for Dependents Education, ASD (M&RA).

7. The District Superintendent introduced the drug abuse coordinator for Clark Air Base Dependents Schools, a counselor at Wagner High School. This is the coordinator's first school year at Clark Air Base, but he has been teaching in Far East schools for a number of years. He has an intense interest in coordinating the drug abuse control program for the schools and has attended the National Training Center in Drug Education, 20 July–14 August 1970, at San Francisco State College. The coordinator needs the total support of both the civilian and military elements of the DOD Dependents Schools administration to organize a program. Responsibility for organizing and maintaining a Dependents Schools drug abuse control program must remain with the District Superintendent and the Schools officer.

8. The Child Guidance Clinic, DOD Dependents Schools, has a staff of three psychologists, three psychiatric social workers, and a part-time consulting psychiatrist. Referral to the USAF hospital is also provided for. Despite the excellent resources of this clinic, it has not had dependent drug abuse cases referred to it for treatment. These cases have been handled solely as disciplinary infractions.

9. Referral policy requires both teacher and school counselor to interview a problem child. In addition, the school counselor must interview one or both parents. If the child is to be referred to the Guidance Clinic, the referral form is signed by both the school counselor and the school principal. The clinic staff has been given the requirement to report any drug abuse incidents coming to their attention. They have complied with numbers only, feeling that confidentiality of their files must be maintained.

D. Critique

1. As an overall evaluation, the Clark Air Base program of drug abuse has its greatest strength in the areas of information, education and enforcement, with the latter being given the greatest emphasis. There is a close coordinated working relationships between the Wing Commander, the OSI District Commander, the Chief, Security Police, the Staff Judge Advocate, and the Information Officer. This program is very effective when applied to the military populace.

2. This program is not as effective when applied to the dependent population because the range of appropriate actions is limited to administrative action. The treatment and rehabilitative resources available for dependents have not been fully exploited. Information concerning dependent drug abuse appears suppressed by peers, parents, and treatment personnel because of a real or imagined possibility that disclosure will result in a family being returned to the United States.

3. In relation to the drug abuse control program, the counseling and treatment staff of the Chaplain's Office, the USAF Hospital, and the DOD Dependents Schools are operating on the periphery of command interest and coordination. Treatment of adolescent drug abusers not yet discovered by enforcement authorities is taking place in a clandestine atmosphere.

4. The potential for a very effective program of drug abuse control for all segments of the population exists at Clark Air Base. The current program of information, education, and enforcement, with the added element of clinical treatment, must be extended to the dependent population. Voluntary disclosures of drug abuse among children by peers, parents, and the children themselves should be encouraged. Such disclosure should result in clinical treatment and rehabilitative efforts within the resources of the command. If treatment efforts fail and command rehabilitative resources are exhausted, then returning a family to the United States may well be the appropriate action.

E. Recommendations

Broader communication, encompassing all of the elements that can be applied to a drug abuse control program, is required. A successful medium for this communication at other installations is the Drug Abuse Control Council which periodically—normally monthly—discusses drug abuse control programs, problems, and solutions and makes recommendations to the commander for program implementation. The commander maintains program control, but draws upon the collective knowledge of all his staff specialists concerning drug abuse problems. All staff elements that can make a contribution are included in the membership. Such a council is specifically recommended for Clark Air Base.

[Attachment 1]

TRAFFICKING OF NARCOTICS AND OTHER ILLICIT SUBSTANCES ON OKINAWA, RYUKYU ISLANDS

A. Some American civilians who have received less than honorable discharges currently living on the island are suspected to be the financiers for the couriers used to carry drugs from Thailand to Okinawa. The couriers are military persons who have either deserted or gone AWOL. It is alleged that couriers travel from a military air base on Okinawa using falsified orders aboard a military flight and land at a military base in Thailand. They use the same mode of travel to return to Okinawa. The couriers and other passengers are not subjected to inspection on leaving or returning to Okinawa.

B. The legal authorities on Okinawa have determined that there is no legal authority for military customs inspections on military bases on Okinawa. Customs inspection authority has been tranferred to the Government of the Ryukyu Islands (GRI) by the United States Civil Administration of the Ryukyu Islands (USCAR). It appears that the GRI has the inchoate authority to make "customs inspections" on the US military but have refused to do so because of the political sensitivity. The US does not want the GRI conducting inspections on US bases. Thus there are no US or GRI customs laws which can be *applied* upon the US bases. Therefore, customs inspection units cannot be established because there are no applicable customs laws for such units to enforce.

C. After many discussions with the United States Army Ryukyu Islands (USARIS) legal authorities, it was agreed that authority does exist for the establishment of inspection units pursuant to the commander's police power. Such power stems from the commander's responsibility to protect the health, safety and welfare of the personnel of his installation, and his responsibility to ensure that no contraband enters his installation. Currently GRI customs laws apply to "open ports" which are ports other than U.S. military ports. It is recommended that joint military inspection units be established to inspect "non-open" ports. Such ports would be military ports which are *not* covered by GRI customs laws. They can be specifically defined as Kadena Air Base, Naha, Futima MCAS, White Beach, and Kin Blue Beach. If we refrain from using the words "customs" and "border" the US Government will not pose any political problems regarding US infringement upon the GRI sovereignty.

[Attachment 2]

VIETNAM DRUG SUPPRESSION STRIKE FORCE

This force, which would require a minimum of twenty service personnel, would be expected to function in the following areas:

1. Identify specific drug abuse trends by locality and US military unit. Identify drug sellers and pinpoint their locations. Coordinate personally this informtaion with the respective National Police units for investigative action. Maintain followup surveillance on habitual drug source areas for continuing and sustained investigative and apprehension action by National Police units.

2. Participate in the helicopter marijuana surveillance program with selected members of the National Police.

3. Functioning in an operational role, gather and document intelligence to identify and neutralize those in-country areas and persons who are supplying drugs to US military personnel.

4. Work closely and on a continuing basis with all elements of military police, CI and CID personnel in drug detection and enforcement.

5. Institute and monitor on a continuing basis a meaningful program to gain source intelligence from apprehended US military drug violators.

6. Identify all sixty elements of the dedicated National Police Drug Suppression Units country-wide and personally assure that the US military units in these particular areas are working full-time in a combined drug detection and suppression program with the VN police.

7. Identify and report to MACV Drug Suppression Unit any VN National Police unit not functioning satisfactorily in drug suppression role. These matters will then be taken up with National Police Narcotic Unit at Saigon for inspection and appropriate action.

8. Conduct on a country-wide basis drug identification lectures to assure that the maximum possible numbers of units commanders and senior noncommissioned officers know and can recognize drugs of abuse when they see them.

[Attachment 3]

OBSERVATIONS AND PREVAILING VIEWS TOWARD THE DRUG PROBLEMS AS ELICITED THROUGH INTERVIEWS WITH APPROXIMATELY 900 OFFICERS AND ENLISTED MEN

HAWAII

I. A. Many military officers were concerned about the amount of interest that certain politicans exhibit regarding the use of drugs in the military. They feel that if the military is not careful, it will become the scapegoat for the *domestic* drug problem. The military has not sponsored the drug problem. Some people in public positions infer that many young men come into military environment (especially Vietnam) and return after acquiring experience with drugs. The drug problem is definitely not unique to Vietnam and the officers interviewed unanimously stated that the military is merely the reflection of the youth of our society.

B. Permissiveness and Lack of Deterrence in the Judicial System: The prevalence of a permissive attitude within the American society is not helping to solve the problem of drug abuse within the military. Such permissiveness emanates from the Washington, DC level down to the lowest unit. Existing tools for deterrence and punishment within the military system need to be exercised. There is a definite need for more Bad Conduct Discharges (BCD's) to be given to drug violators. However, the feeling was that if Commander-In-Chief, Pacific (CINCPAC), issued a letter to that effect, he would open himself up to charges of command influence.

C. Education and Discipline: The key to solving the drug problem is the squad leader. One cannot separate education and discipline: They add up to leadership. It has always worked that way . . . that doesn't necessarily mean that you can't change but it has worked in the past. When discipline breaks down you have a *leadership* problem. One rea-

son for this is that Washington is too permissive by placing the squad leader in a policy making position, such that there are numerous conflicting policy interpretations which cause chaos.

D. Communications Gap: A military judge who has sat on approximately 150 cases (70–80 involving drugs) stated that the biggest part of the military drug problem is the failure of communication between noncommissioned officers (NCO's) and enlisted men. There is a fantastic generation gap. The "lifers" who are in leadership positions are worlds away from the enlisted man (EM). They do not even attempt to communicate, but merely "close their minds to the kids' problems."

E. Decision Making Authority: A good Staff Judge Advocate (SJA) should be able to make all the difficult decisions that the job requires. However, the Army JAG leads the services in filling top slots with junior grade officers. The crux of the drug problem is the lack of authority that senior NCO's and junior officers have and the corresponding lack of respect for the authority that the junior EM have for the senior NCOs. Decision making has been pulled up to such a high level, i.e., Secretary of Defense's Office that the man in the field has few tools with which to operate. Both decision making authority and responsibility should be delegated to the lower levels. A corporal should know and be responsible for his men's actions (on and off-post), and the corporal should not view his job as an 8–5 situation. The incentives needed to retain good senior NCO's should be within the system.

II. RASH OF DRUG CASES AT THE MARINE BARRACKS HONOLULU: A. Background: During the Spring of 1970, a detachment of 107 marines had drug charges placed against 44 of its people. The detachment was at 115% strength at the time. Thus, 40% of the detachment was implicated The case was initiated when one man in the detachment decided to inform on all the individuals involved.

1. The NCO's stated that they knew there was something wrong with some of the men because they were not functioning right. They were always sleepy and constantly making sick call because of nervousness and bad nerves. Many were also constantly oversleeping. The startling fact is that most of the men were not Western Pacific (WESPAC) returnees but first term enlistees who had not been to WESPAC.

2. The enlisted men had been complaining at mast that they were being harassed by the NCO's. The NCO's were trying to remedy the situation by the "usual leadership methods." This means that you try to talk to the man and if it doesn't work you grab him by the posterior and shake him up a little.

B. Interview with Senior NCO's Involved in Marine Barracks Case: They felt that the marines were behaving no different before the initiation of the drug cases than they were after the cases were opened. Furthermore, the marines are behaving now just as they were then. They definitely do not feel that the implication is another rash of drug cases. They described the suspected individuals as:

1. Sleepy on post.
2. Sloppy in appearance.
3. Lack of concern, bad attitude.
4. Resistant to obeying rules, orders, etc.
5. Insubordinate.
6. Pale.
7. Shakey, nervous, on edge.
8. Dripping noses.

The actions of the marines prior to being caught were as follows:

1. Shirked responsibilities.
2. Constantly requesting MAST.
3. More inclined to go on an unauthorized leave (UA), especially after pay day.
4. Vietnam returnees abuse the system, i.e., go to sick call more than those who have not been to Vietnam.
5. There were more disciplinary demands put upon the Vietnam returnee than what he had experienced in the Vietnam combat areas, i.e., marines have to be clean shaven, boots polished, and well groomed.
6. Frowned upon authority . . . Black NCO's felt that there was more disrespect for authority here at Honolulu than anywhere else.

a. The marines did not *quickly* obey orders, they hesitated, talked back, or belligerently responded to an order.

b. They requested MAST more frequently and used this wedge to threaten. Comment was made that any senior NCO that wants to advance can't be called to MAST too often thus suggesting that some NCO's may have a tendency to capitulate under this pressure.

The tools of leadership available to them as senior NCO's to settle the disciplinary problems:

1. Article 15: This type punishment seems to roll off their backs; the attitude of the EM is that you can throw all the various types of discharges in the air and take your pick. None of the discharges have any deterrent effect. They do not know or appear to care about what a less than honorable discharge means. The troops laugh at Article 15's. Senior NCO's felt that there was nothing that they could do to a man that would be effective to discipline him. They felt that their hands were tied. No longer can they grab a man and shake him up to bring him back in line. This suggests that there has to be greater respect for the man and less reliance upon the fear of physical harm being levied by a senior NCO.

2. The senior NCO's recommended separating the "Salts" or Vietnam veterans from the younger marines just out of basic training. It is the E–3's and E–4's returning from Vietnam who think that they know it all and adversely affect the junior or younger enlisted men. However, a lieutenant present at the time disagreed, stating that the number of Vietnam returnees in Hawaii compared to the large number of new marines from the mainland is very small.

C. Interviews with Young NCO's (E–5's) Close to the Case:

1. The interview of two NCO's who were younger than the three NCO's identified above appeared more sympathetic, patient and more genuinely concerned about what they could do to help solve the problem and were less concerned about the personal ramifications upon themselves.

2. The young NCO feels that the problem is that not many of the senior NCO's live with the younger troops. Most NCO's seem to work an 8–5 day; therefore, they are not getting to *know* their men, their needs, desires, problems, etc. The E–5's are closer to the men because they live with them. However, one of the E–5's that lives in the barracks with marines stated that the EM were well behaved until he turned his back. Similarly, they were experts in hiding various information and events from him. The young NCO's also felt that the E–3's and E–4's are not ready to lead the younger marines because of their own immaturity and inexperience. The opinion of the two E–5's was that there is no ready solution to the discipline problem.

D. Analysis of the Company Commander's Recommendations and Disposition of the Marine Barracks Case:

1. General Courts-Martial: All persons suspected of selling and/or pushing drugs were referred to an Article 32 Investigation with a view toward General Courts-Martial. Originally, 7 of the 48 suspected individuals fell into this category. However, none of the suspected individuals were brought to General Courts-Martial. In the beginning 11 individuals were suspected of pushing drugs and these individuals were placed in the brig for pretrial confinement pending the outcome of the Article 32 investigation. The remainder were held in a casual hold status.

2. Special Courts-Martial: Three persons were brought to trial by Special Courts-Martial, acquitted, and returned to duty because of the lack of a credible witness against them. The original informer, changed his statement twice and was not used as a witness. He stated that he implicated some of the marines because he wanted to get even with them, an NCO, and others. He implicated some others in order to assist them in getting out of the service. Two other witnesses corroborated some of the informer's statements but one witness forgot everything he previously stated. The third witness also conveniently forgot various information. All the informers who were witnesses or scheduled to be witnesses had less than satisfactory service records and were not useful as witnesses against some of the defendants or respondents who had relatively satisfactory service records. One witness, in particular, was a weak prosecution witness for the following reasons:

a. Evidence indicated him to be unworthy of belief.

b. Evidence available showed his willingness to do anything to terminate his service. He was promised and desperately wanted to effect his separation from the service.

c. Government or prosecution had the burden of proof and when there are witnesses with questionable reputations for truth and veracity the prosecution usually loses.

d. It could be shown that he had a motive to lie.

e. Was difficult to show that he was believable beyond a reasonable doubt.

3. Administrative Discharge Boards: The command took this course of action when they saw the trend that was evolving in the special courts-martial cases identified above, wherein each subject was acquitted because of the lack of credible witnesses. Six marines presently have cases pending before the board. Twenty-two marines have appeared before the administrative discharge board and the board has recommended retention. Four of these marines have been returned to duty; five have had their cases forwarded to the Marine Corps Pacific Commander to be separated with general discharges; however, two have been denied. Undesirable discharges have been executed in only three of the 22 cases. Some of the marines wanted out of the service and requested discharge for the good of the service and received undesirable discharges upon completion of the investigation by the Naval Investigative Service (NIS). Based upon the above experience at special courts-martials, it is conjectured that many of these persons would not have been discharged had they not requested to be discharged. Four individuals were discharged for the convenience of the government; one of the individuals was acquitted by a general courts-martial. There were 16 other individuals implicated by the original informant. However, no action was brought against them. Thus, the total amount of people actually implicated was 60 out of a 107 man unit which was at 115% strength.

VIETNAM

I. PREVAILING VIEWS TOWARD THE DRUG PROBLEM

A. Failure of the Punitive System:

1. Lack of Deterrence: The general opinion at II Field Force Headquarters and II Field Force Artillery was that the courts-martial system is a failure in regard to the prosecution of drug cases. The Uniform Code of Military Justice (UCMJ) is too stringent upon the prosecution of an offense. General courts-martials are never convened for pure-

ly drug or narcotic offenses. Nonjudicial punishment in accordance with Article 15, UCMJ, is too long and the procedural requirement just forces people to "yo-yo" around for months. It was considered that a more rapid processing of cases was essential. Similarly, in Vietnam the soldier earns combat pay and has very few places to spend it; therefore, fines and restrictions have almost no deterrent effect.

2. The JAG officers at NAVFOR V, NHA, BE, MACV, and De Nang felt that the administrative boards in Vietnam are very lenient because they do not give enough undesirable discharges. One JAG officer felt that the Navy was lacking more in this respect than the other services. This particular JAG officer's opinion was based upon reviewing every field board in the II and III military regions of Vietnam. Deterrence in the administrative board system is also lacking because there are many young officers sitting on the various boards who will not approve an undesirable discharge to a marijuana offender. The JAG officers feel that there is a strong defense psychology at work. The commanders who initiated the charges will testify on behalf of the defendants and respondents regarding their otherwise good conduct and outstanding work. As a reaction to the atmosphere of permissiveness in lieu of effective deterrence, the various SJA officers wanted the DOD drug team to tell them if it is the Navy policy to emphasize amnesty and rehabilitation. They felt that more permissiveness would compound the drug problem.

B. Constitutional Safeguards: It was felt that the constitution gives the defendant too many rights. However, the field grade officers feel that the rules of search and seizure and chain of custody are not that complicated, but by the time they get down to the company level the results do not warrant the time expended. This means that the officers and senior NCO's at the company level do not know how to work within the constitutional constraint of the search and seizure rules. They also felt the defense had too many weapons in which to beat the prosecution and in many cases the defense counsels over-defend their cases. Although courts-martials have more of a deterrent effect, the administrative discharge route is considered better from a practical viewpoint. It, however, is being weakened daily because more respondents are electing to take courts-martial in lieu of board action.

C. Necessity to Rehabilitate before Discharge: The commander is further handicapped because he must attempt to rehabilitate the soldier before he can discharge him. It is felt that when the commander is in the field and on the move, a drug abuser is dead wood and is a nuisance because he is ineffective half of the day.

D. Company Grade Officers and Senior NCO's Attitudes: The net result of the above is that commanders and senior NCO's at the brigade level feel that the higher command authorities have failed them by not backing them in their attempts to get rid of the drug abusers.

II. CONSIDERATIONS OF COMMANDERS IN DETERMINING HOW TO HANDLE VARIOUS TYPES OF DRUG ABUSERS

A. General Court:

1. There is some feeling among company commanders at the Army Support Group, Can Tho, that the general courts-martial convening authority is trying to hold down the number of general courts-martials. Supposedly, the general courts-martial convening authority at USARV has conveyed this feeling by denying many requests of the Army Support Group for general courts and telling the units to handle the charges at the unit level. A general courts-martial requires an Article 32 investigation and much paperwork. Similarly, the stockade at Long Binh is overcrowded and if a man is punitively discharged he must be escorted back to the US which is a more expensive procedure than sending a man back unescorted pursuant to a discharge received at a board.

2. Pushers should be tried before this court. This court should be used anytime it is felt that the defendant should be discharged from the service. However, there have been no general court-martial cases at Army Support Group in 1970.

B. BCD Special Court: You can't convene a BCD special court unless you go to the general court-martial convening authority to request that the court be convened. In most cases the GCM prefers to convene a general or special court rather than BCD special.

C. Special Court: The majority of the commands are trying hard drug offenders, repeaters, chronic marijuana users and multiple drug users at this forum. It appears that the vast majority of court-martial cases for drug abuse are held at this forum. The Navy at Com Nav For V also felt that repeat drug offenders should be tried by court-martial.

D. Summary Court: In most cases this forum is used when a man who is being given an Article 15 exercises his rights and requests a court-martial. It is felt by many of the Staff Judge Advocates that many of the defendants will request a court-martial to test the strength of the commander's case in an Article 15 situation.

E. Article 15:

1. The expressed attitude at the Army Support Group at Can Tho is against courts-martial in part because of the lack of space at Long Binh stockade for first offenders, thus, from a practical viewpoint the special court has no advantage over Article 15. Some commands prefer to use the Article 15 so that the subject will not have a Federal conviction on his record.

2. The commander at Headquarters First Field Forces feels that nonjudicial punishment under Article 15 may be the appropriate course of action in disposing of an incident involving the use or possession of unauthorized drugs or marijuana in a particular case. However, to insure that careful and thorough analysis is given to the individual facts in each case, commanders at brigade, group or equivalent level may wish to reserve for themselves the right to exercise Article 15 authority over drug/marijuana offenses in accordance with paragraph 3-4b, AR 27-10. (23 Aug. 1970, Hqs. IFFV CDR).

F. No-Action Cases (Navy): The Navy feels that if an abuser is considered by the commander to be an experimenter and has an otherwise good record with little involvement with drugs, he should not be brought before an administrative board but handled by management and rehabilitative techniques at the unit level.

G. Administrative Boards:

1. At the Army Support Group, Can Tho, the hard drug addict is being processed by administrative boards as unsuitable because it takes so much time to discharge a man for unfitness. The rationale of some commanders is that the man discharged as unsuitable will never use his GI Bill to buy a house or go to school. Therefore, it is immaterial that the man's GI benefits are not denied.

2. Navy commanders rationale for electing the administrative board in preference to the courts-martial is a direct result of unsuccessful application of the rules of evidence; this is the feeling of the JAG at Nha Be. The unfitness route with a view toward an undesirable discharge is given for selling, peddling, introducing use aboard ship, use on shore bases and using two or more kinds of drugs in combination.

III. TRENDS IN DISPOSITION OF DRUG CASES

A. 1st Air Cavalry Division (Army):

1. Article 15: There is a distinct preference to handle marijuana cases by the use of Article 15. During 1969 the division had 131 Article 15 cases to 43 special courts-martial. Only 11 summary courts-martial and no general courts-martial were held. The year 1970 is about the same. It is significant to note that in 1970 there have been no summary courts-martial, which suggests that the commanders have such a good understanding of search and seizure applications that few, if any, defendants are attempting to test the validity of charges by requesting courts-martial in lieu of Article 15.

2. General Courts-Martial: Very few if any drug cases are brought to general court-martial. Only one marijuana case has been brought to this forum. This particular case involved possession of 26 lbs of marijuana. There were no *narcotics* convictions obtained at a general court in 1969 or 1970.

3. Administrative Board Actions: Approximately 40% of the total courts-martial and administrative board cases for drug abuse were handled through administrative boards. This figure is based on the number of courts-martials convictions and administrative board discharges granted.

B. 3MAF (Marines):

Administrative Boards: At the beginning of calendar year 1970, 20% of all drug cases (courts-martials and administrative boards) were handled by administrative board action. Currently, 50% of the total cases are handled by the Administrative Boards. At the beginning of the year there was an upsurge of courts-martial actions in the 3MAF area which includes the Force Logistics Command, 1st Marine Division, and the 1st Marine Air Wing.

C. Headquarters XXIV Corps (Army):

1. Article 15: It appears that there is a decided increase in use of Article 15 notwithstanding the expressed denial of the SJA. The SJA felt that the apparent increase in "marijuana cases" disposed of by Article 15 for 1970 is the result of offenses other than marijuana being included in the definition of "marijuana cases" in the 1970 total. A careful analysis of the statistics indicate that the use of Article 15's did increase for marijuana offenses notwithstanding the SJA's reasoning. The SJA was sensitive to the requirement that counsel should not advise nonjudicial punishment merely because of the difficulties associated with the admissability of evidence. If a case is not legally sufficient because of lack of probable cause which makes critical evidence inadmissible the counsel should not advise nonjudicial punishment. Article 15 should be recommended only when the evidence will stand up at a court-martial. The distinct attitude of the SJA was that he would not advise anything that would result in the loss of a case which would put the commander in an embarrassing position.

2. Administrative Boards: The administrative board is chosen in about 50% of the total drug abuse cases which involve courts-martial offense and board actions.

D. 1st Field Force Vietnam:

1. Marijuana: From July 1969 to June 1970 there has been only 5 cases out of 484 which have gone to general court. However, 40% of all cases have gone to special court and only 4½% to summary court. Approximately 45% of the cases are being handled through nonjudicial means.

2. Narcotics: From July 1969 to June 1970, 5% of the cases have gone to general court, 45% to special court, 12% to summary court and 38% have been handled by Article 15's.

E. 483rd T. A. W. (Air Force):

Although this command had very few drug cases, it exhibited a definite trend toward the disposing of marijuana cases by use of Article 15. In fact during the calendar year 1970, there have been twice as many Article 15's for drug abuse as there have been special courts-martial.

IV. NAVY PROCESSING OF MARIJUANA, BARBITURATE, AND AMPHETAMINE EXPERIMENTERS (U.S. NAVY SUPPORT GROUP, BIEN THUY)

A. Background: Processing for discharge of enlisted men who are drug abusers by reason of unfitness is mandatory in the Navy. (BUPERSMAN 3420220 3.g). However, that requirement also states that processing for drug abuse is not mandatory "when, in the opinion of the commanding officer, the member was only an experimental user of marijuana, amphetamines or barbiturates." The exception is applicable to "those members with otherwise satisfactory performance who are involved for a short period of time, e.g., during one period of liberty, or are intermittently involved to a slight extent over a longer period of time . . . In such excepted cases the commanding officer shall submit a letter report to the Chief of Naval Personnel stating the facts, and recommend disposition of the member." The exception lies within the purview of the command discretionary judgment. The Navy Department's rationale for the exception, emphasized in BUPERS NOTICE 6710, 28 January 1970, paragraph 2, is that "many young men who are otherwise good sailors and credible performers within their commands briefly expose themselves to drug abuse." The rationale continues to describe the experimenter as, "part of the majority who through self-reliance and stability do not need to use the crutch of drug abuse as they face the daily stresses of life." It is the apparent intent of the Navy that the experimental marijuana, barbiturate or amphetamine user should receive counseling from his unit supervisory leader or commander. If necessary, the drug abuser should have medical, psychological and/or psychiatric treatment.

B. Article 15: The Navy Officer In Charge (OIC) of the Logistics Support Base in Bien Thuy has given no Article 15's for marijuana users. There were 23 known drug cases from January 1970 to September 1970. The majority of the cases were marijuana experimenters handled outside of the Administrative Board Procedure. The rationale for giving an Article 15 is based upon a man's behavior and performance. An Article 15 would be chosen when a man is a discipline problem and a bad performer (in relationship to a no-action case). However, the man is kept in his immediate unit and not sent to COMNAVSUBPAC in Saigon.

C. No-action Cases: The Navy OIC of the Logistics Support Base in Bien Thuy treated the marijuana experimenter as no-action case. The rationale for such cases is also based upon a man's behavior and performance. If the man is not a discipline problem and a good performer he is treated by the no-action route. The intent is to keep this man in the immediate unit and rehabilitate him. However, this man is not kept in the immediate unit. He is sent to the Navy JAG COMNAVSUBPAC in Saigon where the commanding officer is located and subsequently sent back to the United States. The man is not brought back to his original unit.

D. Findings:

1. The OIC at the Navy Logistics Support Base displayed a lack of understanding of the policy regarding the "experimental" drug abuser. The purpose of the policy is to keep good people in the service unit and provide them with the necessary counseling. It appears as if the attitude is to get them out of the unit. In fact, that has been happening. It was noted that persons who are not worthy of the "experimental" classifications are kept within the unit without any counseling. In short, the man most susceptible to counseling is sent out of the unit; whereas the man with the bad record is kept in the unit without any counseling.

2. If the Navy is going to give a "man a second chance" similar to rehabilitation, it should keep the man within his unit in Vietnam and provide the necessary counsel and treatment.

3. As the US withdraws more and more Navy troops from Vietnam, there will be more detachments where there will not be a commanding officer, but an OIC. Therefore, the OIC should be made thoroughly familiar with the policy and procedure of handling experimental drug abuse cases because the commanding officers will usually follow the recommendation of the OIC if it is within reason.

V. PROCESSING THE DRUG ABUSER WHO IS MORE THAN AN EXPERIMENTER

In cases not involving the experimental use of marijuana, barbiturates and/or amphetamines and after reviewing the administrative board report and record of the hearing, the commanding officer notes his concurrence or nonconcurrence and enters any comment deemed appropriate. The commanding officer may close the case in certain instances, but all cases involving drug abuse must be forwarded to the Chief of Naval Personnel for final disposition. He has the authority to approve or disapprove the board recommendation. The Chief of Naval Personnel may also change the type of discharge to a more credible one. Thus, the Chief of Naval Personnel has a direct impact upon all Navy administrative board actions.

VI. VIEWS OF TWO SJA OFFICERS TOWARD SEARCH AND SEIZURE REQUIREMENTS

A. The SJA for the First Field Force Vietnam (IFFV) has the following opinion which appears in a memorandum on search and seizure dated 21 August 1970:

"The commander can always search his men for marijuana, or any other prohibited items. The fact that the marijuana he finds may not qualify as admissible evidence in a court-martial because of the probable cause requirements should not inhibit the commander. Regardless of its admissibility into evidence, the marijuana or other contraband has been located and seized."

B. The SJA at Okinawa is of the contrary opinion. He feels that if there is no "probable cause" sufficient for a search, then the search itself is illegal and cannot be conducted. The decision as to the future admissibility of the evidence is made before the search. Thus, if it is concluded that certain evidence if found will be inadmissable, the search will not be conducted. The JAC at Camp Zama, Japan, disagrees with this interpretation and would permit the search. He would then allow the courts to rule upon the admissibility of the evidence if he decided to prosecute. In any event one has no legal right to contraband and he could not petition for the return of the confiscated drugs.

VII. ATTITUDES OF COMMISSIONED OFFICERS

A. Need for Training of Commanders and NCO's Regarding Recognition of Abusers: An excellent example of this need is highlighted by the Commanding General, 4th Infantry Division, as follows:

"I continue to be concerned with our courts-martial figures. This concern does not stem from the totals per se, but from my belief that in numerous cases, the correct application of the principles of leadership could perhaps have prevented charges being preferred. For example, a review of the facts and circumstances surrounding a number of recent courts-martials discloses that the individuals tried harbored some degree of dissatisfaction with their assignment, despondency for various reasons, generally low morale, or a combination of all three. The failure of our young leaders to recognize these indicators and to take appropriate corrective action is a serious oversight indeed."

B. Need for More Efficient Leadership on the Part of Company and Battalion Level Commanders and NCO's: The Commanding General, 4th Infantry Division, in his 12 August 1970 letter on discipline brought this problem into focus as follows:

"Of course, every commander realizes that the maintenance of discipline is his responsibility; but so are a myriad of other things. Because of this workload an inexperienced commander may adopt the belief that the easy way to maintain discipline is to threaten individuals with punishment; they resort to the pitfall of using the Uniform Code of Military Justice as a crutch instead of an aid, which is the least desirable method to maintain discipline. Efficient leadership by both our commissioned and noncommissioned commanders is the most effective means of maintaining discipline. Sometimes it bears heavy on the commander's time and patience, but leaders must counsel those individuals who are experiencing difficulties to determine the rest of their troubles, their background, capabilities and limitations. Some personnel falter over troubles, real or imagined, which taken in concert with the commanders' responsibilities may appear to that commander as insignificant. Not so the man; in his eyes it is more important than unit or mission, and it must be resolved or it will grow to the proportions of a court-marital. Commanders must, therefore, give thoughtful consideration to the problems of their men and help to alleviate or remove factors which are conductive to dissatisfaction, indifference and low morale."

C. Determination by Commanders of the Disposition of Cases Involving Drug Abusers: The Commanding General, 4th Infantry Division, also stated how he feels his division should proceed without exerting command influence as follows:

"Admittedly, counseling is not going to accomplish the desired results in every case, and when the commander determines that justice need be served, it must be swift and sure. However, before a commander decides arbitrarily on trial by courts-martial, he should consider a written reprimand or those measures indicated in paragraph 128c, Manual for Courts-Martial, 1969 (Rev). Perhaps there are cases where the use of such administrative measures will expedite the adjustment of the individual to military service and discipline, whereas a courts-martial might destroy any desire or inclination on behalf of the offender to adjust to military service. If punitive action becomes necessary, the matter should be disposed of at the lowest level possible. Thus, a commander should not decide upon trial by courts-martial until he has determined that Article 15, Uniform Code of Military Justice, will not meet adequately the ends of justice and discipline. Even then, the case will be referred to the lowest court having jurisdiction to adjudge an adequate sentence."

D. Need for Prompt Expeditious Handling of Drug Cases:

The effectiveness of disciplinary punishment is directly related to the timeliness with which it is administered, although the rights of the individual must not be violated in order to obtain promptness. When an offense appears to have been committed, immediate investigations and prompt action are mandatory.

E. Confidence in Judicial System: The II Field Force Artillery felt that there is a definite need to know just what is "possession." Likewise, the Army cannot afford a moralistic approach to the drug problem which is social in nature. Rapid means must exist to provide negative reinforcement of the punitive system.

F. Rehabilitative Counseling on Drug Abuse: There are not enough qualified people in the field to counsel troops on drug abuse. It is felt that a well-informed individual trained in psychology is needed to counsel the troops.

G. Use of Drugs in Combat Areas: It was expressed by a young lieutenant that about 10–20% of his command at a fire support base

(FSB) use marijuana. However, 85% of this group are able to perform their job well. In short, only about 1-3% of the people at the FSB are not able to do their job well. It was stated by other commanders that drugs are used so sparsely in the forward combat areas because they are alive with booby traps. It is just plain dangerous for a person not to have complete control of all of his capabilities in these areas. Self-policing was apparent.

VIII. ATTITUDES OF MEDICAL OFFICERS AT ARMY STOCKADE AT LONG BINH (LBJ)

A. Establishment of Personal Relationship: A lieutenant who was a counselor at LBJ felt that there is a real need for communication in the military. The young enlisted men have virtually launched an assault against the NCO and the officer classes. He felt that leadership is the key to bridging the communications gap. He is practicing leadership by attempting to establish some personal relationship with the enlisted men by listening and trying to convey to them that he honestly and sincerely understands their problems. The lieutenant spends the bulk of his time as a counselor at LBJ answering the prisoners immediate needs, i.e., where are my personal belongings? Do I get a partial payment while in confinement? Etc.

B. Generation Gap Is Also A Communications Gap:

1. Ability to talk freely about problems. A black psychiatrist, felt that senior NCO's and officers do not understand the needs and aspirations of the young black American. Black soldiers are freely questioning many things that to them is a problem. Older black senior NCO's are trained and conditioned to a societal atmosphere which was not conducive to questioning. Thus, many black senior NCO's do not feel free to talk about things they consider a problem. The result is that the young black soldier condemns the older black NCO on the grounds that he accepts certain conditions which the young black soldier feels are intolerable and unjust.

2. The Need and Inability of Young Enlisted Men to Identify and Receive Supportive Guidance. A young enlisted man who may need some kind of available supportive relationship guidance has no one to relate to in a position to help them. Senior NOC's identify with the system and feel personally threatened when the young enlisted man questions the system. Under the authoritarian system in the military a senior NCO is taught to obey authority without question and many older NCO's who are well trained will do exactly that; however, the young enlisted man will question authority without spontaneously obeying. The young enlisted man is asking for the why's or basis for decisions to determine the validity of the exercise of authority. This he is doing before obeying or disobeying authority.

3. Tensions in Military Caused by Polarization Between Enlisted Men, Senior NCO's and Officers. The military system needs a way for the pressure and tension between groups to be released.

IX. ATTITUDES OF NONCOMMISSIONED OFFICERS (NCO'S)

A. Recognition of a Drug Abuser: Senior NCO's at the 7th Air Force, Tan Son Nhut Air Base, stated that it is easy to recognize a drug abuser because a good NCO knows his men. Therefore, he can spot sudden changes in character and behavior. Usually, the abuser begins to sleep later in the morning and is always drowsy and sleepy. However, the interviews revealed that the NCO's have little contact with enlisted men after duty hours.

B. Polarization Between Enlisted Men and NCO's: The prevailing attitude is that many of the enlisted men have no respect for authority and are very hostile and immature.

C. Use of Drugs on the Base (Air Force):

1. There is very little use of any drugs in the Air Force for the following reasons according to a career sergeant.

2. Young airmen are afraid to use drugs in Saigon because there are so many enforcement people around, i.e., the Criminal Investigators (CID), Military Police (MP), and joint CID-Vietnamese Military Police (QC) and Vietnamese National Police patrols. There is such an atmosphere of supervision in the barracks that the airmen cannot use drugs. Likewise, there is just no place to smoke or hide marijuana on the base.

3. Probably one of the biggest deterrents is that the airmen have too much to lose. They know the value of rank and the difficulty of achieving it. The airmen know that it is not worth the risk of conviction to become involved with drugs and soon learn that it is safer to go out and get their "heads bad" (get drunk on alcohol).

4. Finally, it was reported that the airmen work such long hours that they are just too tired to become involved in illegal activities.

D. Intelligence of Airmen: The constant complaint of the senior NCO's was that the project 100,000 category IV people are the biggest trouble makers. It is felt that they usually have just enough intelligence to open the door.

X. ATTITUDES OF ENLISTED MEN IN FORWARD FIRE BASES

A. Effects and Use of Marijuana in Vietnam: The use of marijuana does make your reactions a lot slower and is not condoned in the forward combat areas by young soldiers. However, it is used much more around the cities and the base camps. The above is the general attitude among EM at the American Division, 196 Light Infantry Brigade, Firebase Hawk Hill.

B. Leadership of NCO's and Senior NCO's:

1. Forward Combat Areas: The enlisted men feel that there are NCO's in the field who are good leaders. Such individuals are described as those who exercise good judgment, discretion, concern about the lives of all their men, decisive decision makers, well-trained for combat, and do not hassel their men with little meaningless make-work duties. In short, such a leader takes care of his men.

2. Base Camps and Rear Areas: There are some good leaders in the forward areas, however, when they come back to the base camps the Army forces them to do "Mickey Mouse" hasseling things to the troops. The good leaders either refuse to do this, pretend to do this, or get out of the service. In short, there are no permanently good leaders in the base camps because they are forced out of the service.

3. The "LIFERS": The bad leaders in the forward combat areas really become the bad leaders in the base camps. They have a craving for power and lust for authority. "Do this or do that merely because I say so." The term "Lifer" refers to a person who conforms to the rules and regulations of the Army. An individual who has some technical or professional expertise desiring to make a career out of the Army is called a "careerist." He is much more acceptable to the more rebellious youth. The "Lifer" is at best tolerated. One soldier very aptly outlined polarization between the enlisted man and the senior NCO by stating that sergeants (E-5) are OK, staff sergeants (E-6) are sitting on the fence and can be OK or not OK, and all sergeants first class (E-7) and those above are out of it and are the "lifers." The term "lifer" as defined by the enlisted man expresses the size and meaning of the communications gap. A "lifer" is a guy who looks at the book only, and sees no variations from it at all. Furthermore, if an enlisted man does not immediately do what a "lifer" says, he will "screw up" the enlisted man. The "lifer" is constantly hasseling you and he thinks that he is better than anyone else. There is much resentment by young intelligent officers in the field who feel that they are better educated than the older "lifers." The young soldier feels that the "lifer" will take credit for the EM's good work when credit is due and pass down criticism to the EM when the principal substantive mistake was made by the "lifer."

D. Polarization Between Enlisted Men and Senior NCO's:

1. Difficulties in Giving a Lawful Order: Many SJA officers and senior officals have commented that many sergeants have given a man an order only to be refused. Then the sergeant gets a more senior NCO who gives the same order and it is also refused. Then the senior NCO gets a lieutenant who gives the same order and is refused and the man is dealt with harshly. This compounding of offenses is absurd and makes a small offense much more severe. A colonel in the 1st Marine Division had a good solution to this situation. He felt that a sergeant must be more of a social psychologist and in some cases ask the man a few questions about the situation and his reasonings. The sergeant should not be so inflexible as to polarize the situation. The sergeant himself should not compound the charges. He should at least allow the senior NCO an opportunity to talk with the trooper. The system at present has no flexibility. No one can then communicate with the trooper because everyone is tainted by being a part of the compounded offenses. The senior NCO and junior officer should be kept out of it so that they will maintain their ability to communicate with the soldiers.

THAILAND

I. PUNITIVE SYSTEM

Failure of the Punitive System: It is the opinion of the Commanding General, HQ SUPTHAI, Korat, that the courts-martial is used only when you have the necessary evidence. This is so rare that you virtually do not have a courts-martial system which can result in discharges which are less than honorable.

II. RATIONALE USED IN DETERMINING HOW TO DISPOSE OF DRUG ABUSE CASES

A. General Courts-Martial: This forum is used for major offenses such as grand larceny. This is seldom used for drug offenders.

B. BCD Special Courts-Martial. This forum is used when the man's character is at fault.

C. Special Courts-Martial: When the commander decides to use the courts-martial he usually chooses the special courts-martial.

D. Article 15: This is the best, most practical way to get a discharge. It is easier and quicker for commanders to dispose of drug cases by Article 15. It also costs the government less money and time spent. After building a case for discharge by a series of Articles 15's the commander has the following two choices:

1. Develop such a solid case that the man will decide to waive board action and request an undesirable discharge, or

2. Start administrative proceedings with a view of discharging him with an undesirable discharge.

E. Administrative Board Proceedings: Most potential defendants request a waiver of formal board action. This man waives the rights inherent in an administrative board; however, he is advised by counsel before waiving his board. Usually he will elect to do this when the charges and evidence against him are so strong that a courts-martial is evident. Very few cases have arisen wherein the commander has actively sought to give a man a formal administrative board. The unfitness board is preferred to the unsuitability board in drug cases because the man's character is at fault and he should not receive an honorable or general discharge. The latter is merely

being used in cases where the abuser has escaped from the punitive system and gets out of the service without punishment.

III. ATTITUDES OF JUNIOR OFFICERS AT DON MUANG AIR BASE, THAILAND

A. Impact of Drug Problem Upon Junior Officers. One captain stated that he has not had a drug case since arriving at Don Muang Air Base and would not recognize one if he saw it. The captain had also had a mandatory drug briefing before leaving the States.

B. Communications Gap: The Junior Officers Council has decided to work at solving some of the problems of the young airman. It has had some excellent and stimulating meetings on human relations. The objects, the frustration of the young airmen are the senior NCO's (E–7—E–9). They seem to be unable to react to new ideas and changes. The unimaginative senior NCO's are trying to attack new problems with their old military training. Many of the senior NCO's realize that the junior enlisted men are intellectually superior to them. There is virtually no representation of NCO's at the council discussions on human relations.

C. Difficulty in Giving a Lawful Direct Order: An officer must get an NCO to corroborate his story if he is to have a good case and has been advised so by his headquarters squadron commander and the SJA.

IV. IMPACT OF DISCIPLINARY CONTROL BOARD ON THE DRUG ABUSE PROBLEM

A. Local establishments on deserters and AWOLs who frequent certain establishments like *Jack's Bar* and *The Thermie,* are trafficking in drugs as a method of financially supporting themselves. However, few of the AWOLs and deserters transact illegal activities inside of the bars (Jack's and The Thermie). Most of the transactions occur outside the establishments where the owners have no control; the sidewalk is public property. Placing the establishments off-limits does not stop the trafficking, but merely causes friction between the proprietor, usually a local national, and the military.

B. It is obvious that pressure should not be exerted upon the proprietor as such, but upon the military investigative people to develop and initiate cases on the AWOLs and deserters for their illegal activity.

V. RATIONALE FOR THE DISPOSITION OF DRUG CASES AT KORAT AB (388 TFW), THAILAND

A. Courts-Martial: This course of action is usually the recommendation unless the defendant requests board action in lieu of discharge.

General Courts-Martial: Selected where large quantities of drugs, pushers, sellers or previous offenses are involved.

BCD Special Courts-Martial: Without exception, special courts are used for small amounts but not used for an experimental abuser.

Summary Courts-Martial: Only if a man refuses an Article 15.

Article 15: If the individual has been doing a good job, this method is chosen.

B. Intoxication on Duty Offenses: Greater use of this charge should be made. Urinalysis and blood sampling will assist the prosecution. The Air Force says that you can't take blood samples while the Navy and Army feel that you can take a blood sample without the man's consent. The SJA says that this will make the doctor a more credible witness because of the factual evidence. Without the urinalysis and/or blood sampling the doctor is using opinion evidence.

VII. ATTITUDES OF SENIOR NCO'S

A. General: Talked extensively with an E–6 and an E–7 of the 29th Signal Group, Co. A, of the 302nd Battalion. One manages the King Hotel Billet and the other manages the dining room and bar.

B. Availability of Drugs and Deaths from Overdose: One can buy anything he wants. Everything is available, but they have not heard of any heroin, red rock or cocaine. Can smell it in the billets all the time. There have been 3 deaths in last 6 months from overdose of barbiturates. These were definite cases of potentiation. Two of the victims were white and one was black.

C. Possibility of Formal Organization and Intimidation: The NCO's have been threatened by the blacks for turning a man in for drug use. One NCO was completely surrounded and one EM said, "The Brothers will get you." The personnel here know upon arrival every new guy that comes in, his MOS, his experience with pot and his reliability in keeping quiet. The house boys report where they are physically present at all times. It is felt that the security guards working in the billets are involved in the selling of drugs, but the NCO's have been unable to get enough concrete evidence to bring charges.

D. Confidence in Legal System: They feel that the legal system does not back them up when punitive action is taken. The NCO's also feel that if they put too much pressure upon those involved with drugs that they may be removed from the area. One NCO stated that he knew of several cases of aggressive people being rotated early, including himself.

E. Difficulty with Giving a Direct Order: There is no supervision. NCO's cannot give a direct order, they can't rely upon other NCO's in the Signal Battalion, so they will conveniently forget what they had heard. NCO's are helpless to do anything. Assuming that many NCO's are young, promoted very rapidly and part of the drug culture, they could make the more aggressive NCO helpless. The young NCO is most likely to be around when an offense is committed because the older, more senior NCO's live in separate billets. However, if the NCO's get the evidence, their new commanders will back them. NCO's feel that they should ease the pressure on drug enforcement. He also believes that his refusal to ease the pressure is the reason why he is being rotated so early.

OKINAWA (TRAFFICKING OF NARCOTICS ON OKINAWA, RYUKYU ISLANDS—USARYIS)

I. GENERAL FACTS

A. Many American civilians located on the island are believed to be the financiers for the couriers used to carry narcotics and drugs from Bangkok, Thailand, to Okinawa. Some of the couriers are military persons who have either deserted or gone AWOL. The courier travels from Okinawa from a military air base using falsified orders aboard military flights. He arrives at Bangkok or U-Tapao. The courier then goes to U-Tapao or Don Muang where he boards a military flight back to a military air base in Okinawa.

B. The courier and other passengers are not subjected to inspection before leaving Okinawa nor upon return to Okinawa. Neither accompanied or unaccompanied baggage was subjected to inspection. The above is the principal method whereby drugs are brought into Okinawa.

II. "INSPECTION" OF INDIVIDUALS ARRIVING AT A MILITARY PORT OF ENTRY IN OKINAWA

A. Findings: In a memorandum dated 28 August 1970, the Staff Judge Advocate United States Army Ryukyu Islands (USARYIS), also the Chairman of the Inter-Service Legal Committee stated that "there is no legal authority for military customs inspections on Okinawa." The memorandum further stated that the US Customs laws apply only to the entry of goods onto US soil and thus, the US laws cannot form the legal basis for customs inspection of the entry of goods into Okinawa.

Customs inspection authority for entry of goods to Okinawa has been transferred by the United States Civil Administration of the Ryukyu Islands (USCAR) to the local Government of the Ryukyu Islands (GRI). Unaccompanied property of US personnel is subject to GRI customs inspection upon arrival at commercial ports (non-military); however, property of US personnel in their possession when they enter Okinawa at such a commercial port is not subject to a GRI duty, nor is unaccompanied property brought indirectly from the US. Thus, the GRI has no "monetary" incentive to conduct customs inspections of US personnel at commercial ports.

The Staff Judge Advocate of USARYIS indicated that the GRI cannot conduct "Customs Inspections" on military bases; however, the Director of Legal Affairs Department, USCAR, has the opinion that the GRI does have inchoate authority to make "customs inspections" on military bases but refuse to do so because of the political sensitivity of such action. Thus, there appears to be no "customs laws" which can be applied and enforced relative to entry of goods to Okinawa through military ports of entry. Therefore, "customs inspection units" as such cannot be established. If therefore, inspections are conducted, they must be conducted either as searches, with all the guarantees of the Fourth Amendment to the Constitution; or, in the alternative, they must be carried out pursuant to the installation commander's traditional police powers to insure the health, welfare, and safety of the personnel of his installation, and his responsibility to ensure that no contraband enters his installation or is carried on military transportation. The Air Force has adopted the latter approach and is conducting "inspections" at Kadena Air Base on a very limited basis.

B. Analysis: In a letter dated 19 August 1970, addressed to the Commanding General USARPAC, the Assistant Adjutant General of USARYIS stated that since customs units at the military ports would have no laws to apply, the establishment of customs inspections units would not solve the problem of bringing drugs into Okinawa because all the customs inspections unit could legally do is inspect passengers on planes going to the USA. In that situation the US laws would be applied. However, if one dropped the word "customs" and all references to the applications of laws, the rationale currently being employed would allow units to be established which would "inspect" pursuant to the commander's police powers. Therefore, such a unit could be established which would not be applying US or GRI laws, but merely inspecting pursuant to the commander's police power.

USARPAC has directed USARYIS to establish "Customs inspection teams." USARYIS has not complied on the basis that it has no legal basis to establish such teams. It appears that USARYIS does have the legal authority to establish the teams to conduct inspections pursuant to the commander's police power. USARYIS can call or label the team anything it chooses (other than "Customs" teams) as long as the team accomplishes the desired purpose. It is the label "customs" which conjures up all problems concerning the application of some countries customs laws. If USARYIS called the new group the "Non-open port inspection team" then it would not have a "customs" semantic problem.

The above letter to USARPAC continues to read as follows:

"This command *is willing* to test in a court-martial the validity of a seizure of illegal goods made as a result of a policy of the installation commander concerned that inspections be made of the U.S. personnel entering his installation as a port of entry, such inspection being made for the purpose of health, welfare, and safety, and to prevent contraband from being carried on military

transportation and from entering his installation." (emphasis added)

The USARYIS Staff Judge Advocate's initial and orally disseminated opinion is that if he had to go to court and defend the inspection team under the authority of a commander's police power it would be such a weak argument that he knew he could not win. Therefore, the USARYIS SJA has been in fact unwilling to sanction the inspection units. In view of the gravity of the drug trafficking problem, legal authority must be willing to defend the establishment of such military inspection units. It is a commander's decision and not a SJA decision in the final analysis as to whether to try a man and thus force the legal determination of the legality of the establishment of the unit. The deterrent effect of such inspections and confiscation of drugs and contraband is reason enough to establish the units even if the commander decides not to test the issue in court. The SJA, through his deputy, feels it is "morally right" that the issue be tested if the units are established. The moral views of the SJA should not be a factor in the commander's decision regarding the establishment of the inspection units. However, it seems morally right also that the units be immediately established in order to cut off the illicit supply of drugs into Okinawa.

During discussions of the issue the USARYIS SJA and the USCAR Director of Legal Affairs both agreed that the commander's police power is sufficient basis to establish the inspection units if you do not label it a "customs" inspection team. The USARYIS SJA no longer poses the illegality of such units as a roadblock to their establishment.

C. Recommendation: Establish joint military inspection units to inspect "non-open" ports. Such ports are military ports which are not covered by GRI customs laws. They can be specifically defined as Kadena Air Base, Naha, Futima MCAS, White Beach, and Kin Blue Beach.

If we refrain from using the words "customs" and "border" (as in border search) we will not pose any political problems regarding the GRI sovereignty. If we tell the GRI that we will be only searching upon our bases they should not complain because they have never tried to assert any right to search upon US military bases anyhow.

III. SEARCH OF AN INDIVIDUAL UPON ENTERING MILITARY PORT AT OKINAWA ON THE BASIS OF PROBABLE CAUSE

A. Findings:

1. The general attitude among interviewed commanders, especially the Army, was that the rules or constraints of lawful searches are so stringent that it is hopeless to even try. It was felt that more and better education of relevant people regarding *how* to develop and gather information needed for a lawful search brought replies that such action would not help at all. It is felt that more education as to the *hows* and *whys* regarding searches is definitely needed.

2. All personnel are laboring under the "probable cause standard" in cases where it is anticipated that an informant will not take the stand and testify. It is possible that in some cases, the informant or covert agent may take the stand and testify. Thus, the standard of probable cause in those instances will not be as stringent.

B. Recommendations:

1. Staff Judge Advocates should give commanders, military police, investigators, and other relevant persons more instruction and training regarding the necessary elements of a lawful search and seizure. Concurrently, the legal advisors must instill a positive attitude about search and seizure in the command stressing that lawful searches can be made if done properly.

2. The investigative and police function should work very close to the SJA's and appraise them of all information that they have which leads them to believe the probable cause exists. If the SJA feels that the evidence and reliability of the evidence is not quite strong enough, the CID should be encouraged to attempt to persuade the informant to take the stand. The testimony of covert agents should be encouraged because the reliability question becomes much less of a problem.

IV. SEARCH INCIDENT TO A LAWFUL ARREST

A. Findings: It is suspected that the drug couriers are deserters, AWOLs, or military personnel traveling on falsified orders. Many arrests recently have been made on the charge of falsifying orders which is forgery. There is a hesitancy to apprehend a courier because of the probable cause standard.

B. Recommendation: The investigative and police function should develop as completely as possible with the assistance of covert agents and informants the necessary evidence to bring and sustain a charge against the military person acting as the courier traveling from Okinawa to Bangkok and back to Okinawa. After the evidence is gathered, a surveillance effort should be mounted to follow him during one of his trips to purchase illicit drugs in Bangkok. He should not be arrested upon the AWOL or desertion charge until *after* he returns to Okinawa with his illicit goods. The courier and everything in his immediate area can be legally searched because there has been a valid arrest. If it is necessary to search his bags or other areas, a search warrant can be obtained on the basis of the evidence which indicates that he may have contraband in his bags.

V. USE OF THE MAILS TO SMUGGLE DRUGS

A. Currently mail is being inspected only in cases where "probable cause" exists and a search warrant has been issued irrespective of the class of mail involved. There has been a recent trend for the trafficker to send marijuana through the mails. Recently while carrying a 50-lb. crated box, a postal employee dropped it and discovered that it was completely filled with marijuana. There were 5 such boxes all filled with marijuana. The 250 lbs. of marijuana has an illicit value in Okinawa of $110,000.

Each box had been air mailed and insured and carried the appropriate stamps. Three boxes were addressed to a man who left Okinawa in July 1970 upon receiving an undesirable discharge. Two boxes were addressed to a man at Torri Station. The sender was listed as a marine who left Okinawa in November 1969, but the marine is now stationed in Bangkok, the place from which the boxes were sent. The sender also used the serial number of a marine who is in Okinawa. It is believed that the serial number is an identifying number for some postal employee to flag these boxes and notify someone else to come in and sign for them.

B. Recommendation: All mail, irrespective of class, suspected of containing contraband should be inspected by the postal authorities. The legal authority definitely exists for inspection of second, third and fourth class mail. Authority also exists for first class mail but it must be verified.

VI. PROSECUTION, DEPORTATION, AND DENIAL OF ENTRY INTO OKINAWA OF CIVILIANS HOLDING AMERICAN PASSPORTS

A. Findings:

1. Every American civilian entering Okinawa must within 30 days of his arrival register with the GRI. The GRI Department of Immigration then makes a determination whether or not it will permit that individual to stay in Okinawa for an extended period of time. American civilians in Okinawa are subject to the laws of the GRI. The GRI has made certain drug offenses and related crimes a felony. Conviction of a felony under the GRI laws and/or Communist background are grounds for denial of re-entry into Okinawa under the GRI immigration laws.

2. Many of the passport civilians in Okinawa, believed to be involved in drug trafficking, have been separated from the U.S. military through courts-martial and administrative board proceedings. Under the GRI laws a person "convicted" of a felony can be denied re-entry into Okinawa. The GRI does not interpret courts-martial or administrative board action as a "conviction" for purposes of permitting individuals to come into Okinawa. Thus, personnel who have received dishonorable, bad conduct, and/or undesirable discharges from the U.S. military on drug offenses are permitted free access back into Okinawa to continue the same activity for which they were discharged from the military.

B. Findings: The US military investigative personnel through their investigative efforts have gathered much information upon American civilians involved with US military personnel in the illicit trafficking of drugs. This information is currently not being used by the US military because passport civilians are not within the legal jurisdiction of the US military.

C. Recommendations:

1. The US should document and develop as extensively as possible all information regarding passport Americans involved with military personnel in the illicit trafficking of drugs and turn such information over to the GRI for prosecution under the GRI laws. A conviction under the GRI laws would bring about a long prison term and/or deportation. Such a conviction is also grounds for denial of re-entry into Okinawa.

2. The US military legal personnel should investigate whether or not certain offenses by US personnel on Okinawa soil carries joint or concurrent jurisdiction by the US military and the GRI government. A military person involved with trafficking with GRI nationals may be subject to prosecution under GRI laws.

D. Findings: If the GRI convicts a person of a felony he will be "convicted" under the GRI laws and he can be denied re-entry into Okinawa. This is the best course of action to take because if the case was brought first to the courts-martial or administrative board and discharged, a person would not have been "convicted" of a felony pursuant to GRI interpretation and thus not subject to denial of re-entry into Okinawa. Assuming that the military serviceman is first convicted by the GRI for a civil offense, the US military could, if it so desired, begin administrative action to separate him on the basis of the civil conviction. Thus, the drug offender will be both separated from the service and denied entry back into Okinawa to continue his illicit activities.

E. Recommendation: In certain situations where US military personnel are heavily involved in trafficking on Okinawa and if he has violated a GRI law for which the GRI has jurisdiction, then consideration should be given by the US legal personnel to permit the GRI to exercise jurisdiction and prosecute military persons.

VII. DISPOSITION OF DRUG CASES

A. Marine Corps (1 January to 31 August 1970):

The Marines stated its policy very clearly. It shall and has been removing drug abusers as soon and expeditiously as possible. During the above nine month period, there were 295 actions involving drug abuse (including administrative board actions). There are approximately 17,500 Marines on Okinawa. Forty percent (40%) of the above cases were handled administratively. Approximately fifteen percent (15%) of the cases were handled by an Article 15 nonjudicial punishment. The remaining thirty-five percent (35%) of the cases were handled by special courts-martial. General courts-martials were virtually not used at all. It was surprising,

but 32% of the courts-martial cases were summary courts. It could indicate that the subordinate commands were not legally hesitant to go to trial because of any difficulties of sufficiency of evidence, i.e., search and seizure or chain of custody rules. It could also indicate that many of the Article 15 cases were requesting courts-martials.

B. Navy (1 January to 17 September 1970):

This service had no general or summary courts-martials. It did have a record of one special court but no record of the number of Article 15's. Similarly, the Navy had only 3 administrative boards. No conclusions can be drawn from this information. There are approximately 2,300 Navy personnel on Okinawa.

C. Army (Approximately 1 January to 17 September 1970):

1. The Army SJA for USARYIS was deeply concerned about the constraints of probable cause in regards to searches. He stated very clearly that lawful searches are so difficult to make that additional training of commanders, military police and investigators will not alleviate the obvious problem regarding searches.

2. A total of 55 actions (including administrative boards) have been held. There are approximately 12,000 Army soldiers on Okinawa. Forty percent (40%) of those cases were handled by Article 15's. Seven percent (7%) of the cases were handled by the administrative board proceedings. Six percent (6%) were handled by summary courts-martial and twelve percent (12%) were handled by a general courts-martial. The bulk of the cases, thirty-six percent (36%) were held by special courts-martial. Approximately twenty-four (24%) of the total actions failed to bring a conviction. In virtually all the cases where convictions were not granted, some of the evidence was held inadmissible.

3. It is possible that the Army has a fewer number of drug cases than the Marines because the Army legal authorities do not initiate that many actions unless the evidence regarding search and seizure is airtight. This conclusion is drawn from the Army JAG's extreme sensitivity to search and seizure and its apparent excellent record for conviction.

D. Air Force:

1. The bulk of the cases have been disposed of by Article 15. There were nineteen such cases in 1969 and eleven cases for the first six months of 1970. In 1969 there were five general courts-martials wherein two defendants were acquitted. In 1970 there have been no general courts-martials. There have been no BCD special or summary courts-martials in 1969 or 1970. There was one special courts-martial in 1969 and four so far during 1970.

2. Only five administrative board cases for drug abuse were held during 1969 and nine such actions for the first six months of 1970.

JAPAN

I. EXTENT OF DRUG PROBLEM

A. Caseload:

1. In the years 1968, 1969, and 1970, the United States Army Japan (USARJ) has had 13, 18, and 9 marijuana cases respectively. In 95% of the above cases, Japan has exercised jurisdiction over the individual involved. Japan has primary jurisdiction over all offenses against Japanese law committed on and/or off-base. The usual practice has found the Japanese courts convicting and then suspending drug offenders. The US military subsequently transfers the individual out of Japan to ensure that he does not violate his Japanese parole. There have only been two cases of confinement in the last two years.

2. Most of the individuals apprehended for drug violations are transients apprehended by the Japanese customs people at the airport. When Japanese authorities decide to waive jurisdiction it usually involves an "unprosecutable case" which is a case fraught with legal procedural defects. The defect is usually one having to do with chain of custody of the evidence. The Japanese must turn over all the evidence to the US (along with jurisdiction). However, Japanese standards for securing and controlling the evidence does not meet US standards. Thus, most of the waived cases are "unprosecutable."

B. Urinalysis and Blood Tests: The chemists at the US Army Criminal Laboratory, Camp Zama, stated that 85% of morphine and its derivatives ingested into the body passes into the urine and can be detected upon analysis. The urine is not a very perishable substance either. The remaining 15% is absorbed into the blood and it too can be detected upon analysis. LSD and opium contained in an opium dipped or laced cigarette would be so minute that it could not be detected upon analysis. Marijuana cannot be detected in either a blood test or urinalysis.

C. Recommendations: Commanders at the forward firebases in Vietnam especially should bring more charges for intoxication due to drugs. The suspected individuals should be given a urinalysis to determine and support the commander's opinion that the individual has consumed barbiturates, amphetamines or morphine derivatives in the last twelve hours.

Mr. DODD. Mr. President, I found the results of this team's investigation to be of great interest and importance as I am sure my colleagues will if they read them in detail. They support and indeed supplement the findings of the subcommittee on the extensive, broad use of drugs by members of the military and the toll it is taking of our young people.

When the actual report was received by the Department of Defense is not known, since the true copy I received is undated. I received it by messenger on November 20, 1970.

The report is presumably under the signature of Mr. Jerome A. Vacek, team leader, Marine Corps. The introduction to the report is optimistic about the drug situation and about the "plans, programs, education, training, and amnesty" that have been proposed.

Page 2 of the report states enthusiastically:

Drug abuse programs implemented or directed at Command or Division level seemed to be ideal and meaningful—in fact almost perfect.

It sounds exciting. But on page 56, the last page of the unsigned report, the last paragraph says:

C. Recommendations: Commanders at the forward firebases in Vietnam especially should bring more charges for intoxication due to drugs. The suspected individuals should be given urinalysis to determine and support the commander's opinion that the individual has consumed barbiturates, amphetamines or morphine derivatives in the last twelve hours.

It seems that something happened—and is happening—between the "almost perfect" grasp of the situation at the command level on page 2 of the report and the "drug intoxication at forward firebases" on page 56 of the report.

I would like to remind the Senate that this is the problem to which the Subcommittee on Juvenile Delinquency has been addressing itself: the gap in knowledge and understanding of the drug problem that exists between the command level and the GI's in the units in the field. It is gratifying to me to see that, finally, after 4 years, the gap is narrowing.

I would like the full report printed in the RECORD at the conclusion of my remarks.

Mr. President, as Senators know, I have been seriously concerned with the use of marihuana and other dangerous drugs by our servicemen in Vietnam and elsewhere since 1966.

I have also been concerned about the Defense Department's apparent effort to minimize the problem.

In that connection, during hearings earlier this year, the Pentagon maintained that only about 30 percent of our troops in Vietnam use marihuana. At the same time I had obtained data from a preliminary study conducted by an Army psychologist which showed that about 46 percent of the men had used the drug.

I asked that this study be submitted to the Juvenile Delinquency Subcommittee upon completion. I have just received a copy of the completed research reported by Dr. Morris D. Stanton and I would like this report to be printed in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is ordered.

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

DRUG USE IN VIETNAM—A SURVEY AMONG ARMY PERSONNEL IN THE TWO NORTHERN CORPS

(By Morris D. Stanton, Ph. D.)

DRUG USE IN VIETNAM[1]

Recent national publicity over the extent of drug use and abuse among U.S. servicemen in the Republic of Vietnam (RVN) has led to considerable speculation, conjecture and concern over this issue and how it relates to drug abuse in the United States. To date, several studies (Casper, Janecek & Martinelli, 1968; Postel, 1968; Roffman and Sapol, 1970; Treanor and Skripol, 1970) have attempted to assess the magnitude of marijuana use in RVN through the use of various survey techniques (e.g. interviews, questionnaires). With perhaps the exception of the Roffman & Sapol study, however, most of these surveys have been somewhat limited in scope and/or size. They were generally restricted to certain ranks, ages, and areas and dealt, for the most part, only with marijuana. In addition, they have been generally beset by a number of methodological problems such as sampling errors, observer biases, rudimentary statistical analyses, etc. Finally, if one is interested in obtaining current data on drug use the issue of timeliness becomes important; for example, the most complete of the aforementioned studies is that of Roffman and Sapol, and their data were gathered three years ago between August and November, 1967. For these reasons the author decided in the summer of 1969 to undertake a survey of drug incidence in RVN which would provide data as free as possible from interpretive restrictions due to population and methodological limi-

[1] The views expressed herein are those of the author and do not necessarily reflect those of the Department of the Army or the Department of Defense.

tations.[2] Additional goals of the study were to (a) identify demographic variables which predispose people to drug use, (b) discover what effects RVN has on drug use, and (c) determine when the greatest incidence of drug use occurs.

METHOD

An anonymous, three-page, forty-six question, multiple choice questionnaire was administered to a sample of 2,547 Army personnel in the ranks of E–1 to LTC. These men were being processed in and out of RVN at the 22nd Replacement Battalion in Cam Rahn Bay.[3] The questionnaire was a modified version of an earlier pilot instrument which had been administered to approximately 150 personnel in the same setting several weeks before. It was designed so that practically all the data could be punched on one IBM card for subsequent computer analysis and this resulted in combining certain categories into ranges, thus making them more inclusive; for example, age was structured in class intervals of 17–18, 19–20, 21–22, etc. A copy of the questionnaire is presented in Appendix I.

The data were gathered from 4–8, 4–9 and 4–10 November, 1969, for the incoming enlisted men (EM), outgoing EM, and Officer-NCO groups, respectively. The approximate percentages sampled of the *total* group of incoming and outgoing personnel during these time periods were as follows: incoming EM—80%, outgoing EM—90%, incoming and outgoing officers and NCO's—80%. An effort was made to apportion the sample in the same ratio that existed in the overall population, i.e., approximately 12&½% of both the overall group and the sample group were in the ranks of E–7 through LTC. The outgoing groups came from all types of units from all parts of I and II Corps and actually composed about 0.5% of the total Army population within these regions. There was no evidence that the sample was biased toward any particular subgroup(s) within that population.

The questionnaires were administered to groups averaging in size from 17 men for the officers and NCO's to 72 and 158 men for the outgoing and incoming EM, respectively. Of the 40 groups, all but four were seen between 7 A.M. and midnight. The author addressed 21 of the groups and five of them were addressed by his assistant. The remaining 14 groups—all of which were officer-NCO groups—were addressed by cadre of the 22nd Replacement Battalion who had been instructed in administration of the questionnaire and provided with a typewritten introductory statement. Administration of the questionnaire began upon completion of other in or out-processing paperwork and took 10–15 minutes. The researchers wore civilian clothes and were introduced as Dr. Stanton and Mr. Couron. Mention was made of the author's (actual) affiliation with a large university and emphasis was placed on (a) anonymity and (b) the research aspect of the study. This was done to avoid strict association with the Military and evoking whatever feelings of resentment and suspicion a military project might stir up in the respondents. Of course, these controls were less prevalent in the 14 Officer-NCO groups addressed by local cadre, but the time available for data collection permitted no other recourse. A fascimile of the introductory remarks is presented in Appendix II.

RESULTS AND CONCLUSIONS

Of the 2,547 questionnaires administered, 55 had to be rejected because the respondents did not fill out any of the information. Interestingly, 22 of these rejections came from one group of 162 outgoing EM who were surveyed at 2 A.M. and appeared tired and disgruntled at the time. Six other questionnaires were rejected as unreliable due to discrepancies such as having all alternatives checked, incongruous age and rank (e.g. a 20 year old E–8), etc.

It was decided to divide the data into eight, more or less homogeneous, categories and analyze each separately. The categories selected were:

1. Incoming EM below age 27 and below rank E–7.
2. Outgoing EM below age 27 and below rank E–7.
3. Incoming NCO's above age 26 and above rank E–4.
4. Outgoing NCO's above age 26 and above rank E–4.
5. Incoming Company Grade Officers (CPT, LT) and Warrant Officers.
6. Outgoing Company Grade Officers and Warrant Officers.
7. Incoming Field Grade Officers (MAJ, LTC).
8. Outgoing Field Grade Officers.

It can be seen that this breakdown puts greater emphasis on age than on rank when the EM and NCO's are considered. Age was considered the more important variable, as separation by rank alone would place middle-aged E–5's and E–6's with 20 year olds and young E–6's with older E–8's and E–9's.

A consequent of the age-rank selection criteria was the elimination of 114 individuals who failed to indicate their age and rank, or, in the case of 15 men, were beyond criterion on one variable and within on another. This resulted in a total of 175 questionnaires (6.9%) being excluded from the final data analysis, a rejection figure which is very close to that obtained in the study by Roffman and Sapol (1970). The final sample, then, consisted of 1193 incoming and 1179 outgoing personnel, for a total N of 2,372. The demographic information for these groups is presented in Tables 1 and 2. It is worth noting that 51.1% of the outgoing EM were being discharged from the Army (ETS) upon return to the U.S.

Incidence of drug use

Comparisons of reported incidence and frequency of drug use are presented in Tables 3, 4, 5 and 6. The frequency categories chosen and the ranges to which they refer are: non-users, casual users (1–20 times), heavy users (21–199 times), and habituated users (200 or more times). The "habituated user" category means, for example, that a man processing out of RVN has used a particular drug more frequently than every other day during his tour, and indeed, many of these individuals reported use in the thousands. These categories are admittedly somewhat arbitrary and were chosen partly for their comparability with the Roffman and Sapol (1970) research.

In Tables 3–6 and in succeeding tables the N's will be noted to differ from drug to drug. This resulted from the neglect of a few individuals to answer every question, although it was rarely the same group of non-respondents from question to question. The figures that are given, then, are computed from the total number of individuals who answered a particular question; blank responses were not considered. It should be noted that except for barbiturates, no incidence of any drug use was reported by the Field Grade Officers, so these will not be discussed in this section.

Marijuana. As indicated in Table 3, 313 (34.8%) of the 1001 incoming EM reported having smoked marijuana prior to their arrival in RVN. Nearly half of this group were either heavy or habituated users. In comparison, 31.4% of the outgoing EM reported having used marijuana before RVN (Table 4). This difference is in keeping with estimates of year to year increases in marijuana use within the overall American youth population and may be no more than a reflection of that general trend. However, both figures are higher than the 12.3% pre-RVN marijuana use reported by Roffman and Sapol (1970) in their survey of a sample generally comparable to the present group in age, rank, education, etc. Our own figures are also higher than the 22.7% figure reported by Black, Owens and Wolff (1970) from among a sample of 5,482 stateside EM surveyed at Ft. Sill, Oklahoma, between January and April 1969.

In contrast to the above, a cross-comparison within the outgoing EM group between marijuana use *before* RVN and *during* their RVN tour indicated that 53.2% had tried marijuana at some time in their lives. Three per cent had used it before but not during RVN, while 21.5% used it for the first time in RVN. This last figure is only slightly higher than the 19.4% found by Roffman and Sapol for a somewhat similar group and it may indicate that the *overall rate of increase* of marijuana users in RVN did not change dramatically between late 1967 and late 1969. On the other hand, there does appear to be a shift from 1967 to 1969 toward *heavier use* among marijuana users as a whole. Whereas 7.4% of Roffman and Sapol's total sample were either heavy or habituated marijuana smokers while in RVN, data from the present study indicate that 29.6% of the EM fall into this category. This correlates with the difference between total RVN use noted between these two studies, i.e. 28.9% versus 50.1%. As shown in Table 4, this phenomenon is further corroborated by the shift in the outgoing EM sample from 15.5% heavy and habituated users before RVN to the aforementioned percentage of 29.6 during RVN. A chi-square analysis of the outgoing group as to marijuana use before and during RVN yielded a value of 599.31 (df=6, p less than .001) and a contingency coefficient of .614, thus documenting the correlation between these two variables. In summary, we note that, assuming a certain amount of comparability between the two studies, there is a substantial increase in percentage of users entering Vietnam from 1967 to 1969, and that the increase in number of users during the Vietnam tour is sizable but stable. However, the trend is for greater frequency of smoking among those EM who *do* use marijuana while in RVN.

As might be expected, the incidence of marijuana use among NCO's and Company Grade and Warrant Officers was much lower than among EM. Of the incoming NCO's, 4.2% were users, while 6% (N=6) of the outgoing NCO's reported use. Three of the latter were heavy or habituated users and all three were age 27 or 28 and in the grade of E–5. A slight increase is noted between before RVN and during RVN measure, but the small size of the user group does not allow us to make any definitive statements as to the trends. These data are set forth in Table 5.

Pre-RVN marijuana use among the Company Grade and Warrant Officers appears slightly higher than among the NCO's (c.f. Table 6). This may be no more than a function of age, as the latter group is generally older. However, it is interesting to note that, in contrast to the outgoing EM and NCO groups, the outgoing officer group showed a

[2] In the early stages of its inception the project benefitted from the collaboration of (former) LTC William Cates, MC. Unfortunately, Dr. Cates departed from RVN before pilot work had begun and was unable to assist in either the revision of the questionnaire or the data-gathering process.

[3] The 22nd Replacement Battalion is a transition point for Army personnel entering from and departing for the United States. It provides administrative processing primarily for those units located in the two northern corps (I and II Corps). The survey was conducted in three companies, one for incoming ranks E–1 through E–6, one for outgoing ranks E–1 through E–6, and one for both incoming and outgoing officers and NCO's of rank E–7 and above.

drop in marijuana use while in RVN. Whereas five of these men admitted (casual) use *before* RVN, only one admitted use *while* in RVN. Speculation as to why this may be is practically fruitless without a larger sample and concurrent attitudinal measures, but the results are suggestive of an avenue for further research.

Amphetamines. Comparison between incoming and outgoing EM on amphetamine use before RVN yields identical figures of 12.4%. This finding suggests that amphetamine use in the U.S. by men ages 17–26 did not increase measurably in rate between 1968 and 1969. A slight increase to 16.2% was noted, however, among EM stationed in RVN during that period, although it took place primarily within the casual user category.

Of the 224 incoming and outgoing NCO's only two men reported use of amphetamines, both while in RVN. Use of this drug by Company Grade and Warrant officers was also slight, with a reported incidence of two incoming (3%), two outgoing pre-RVN (3.2%) and one man during his RVN tour.

Barbiturates. Contrary to popular opinion and discussion about the ready availability and high RVN incidence of barbiturates such as Binoctal (Colbach and Willson, 1969), the results of the present study indicate little or no increase in the use of this drug consequent to a Vietnam tour of duty. Rates for our population of EM appear to be equivalent in the U.S. and RVN. Although 10–11% is perhaps a seriously high percentage of users among the 17–26 year old group, the problem among Army EM appears to be more general than specific to the Vietnam theater of operations. Perhaps the gravity of the medical complications that are known to arise from barbiturate abuse have sensitized professional personnel to this problem and contributed to an over-estimation of incidence in certain areas.

Of the total group of incoming and outgoing NCO's and officers, only two reported barbiturate use. One outgoing Company Grade officer stated that he had used barbiturates by prescription from 1–5 times before RVN and 21–40 times in RVN, and one outgoing Field Grade officer reported a frequency of 11–20 times before RVN.

Opium. The greatest *relative* increase in Vietnam of all the drugs surveyed in this research was in the use of opium. Incidence of opium use among personnel aged 17-26 nearly tripled in RVN according to the responses gathered from the outgoing EM. The percentage of opium users in this group rose from 6.3 before RVN to 17.4 during the Vietnam tour. The former figure is close to the 5.5% obtained from the incoming EM and the frequency of use reported by both groups is similar. A key factor here is probably availability, since opium is a substance indigenous to Southeast Asia and, like marijuana, is easily obtainable locally.

Reported opium use among NCO's and officers was minimal, with only one NCO admitting casual use in RVN.

Heroin/Morphine. Indications are that a very slight increase in the stateside use of heroin and morphine took place between 1968 and 1969. Two and one-half per cent of the outgoing EM reported use of these drugs before entering Vietnam and most of these men arrived in late 1968. In comparison, 4.3% of the EM arriving in November 1969 indicated previous use of one or the other of these drugs, primarily on a casual or infrequent basis. Whether or not this difference is a significant or important one is a moot issue, but it is worth noting that a similar increase in the use of heroin and morphine was not reported by the men who were stationed in Vietnam during that year.

Acid. A slight increase somewhat comparable to that seen with heroin/morphine emerges from a comparison between the pre-RVN data on "acid" (LSD, STP) for incoming and outgoing EM. The percentage of acid users for the former group was 11.6, while 8.7% of the group admitted using acid before coming to Vietnam. However, the incidence among outgoing EM dropped to 5.3% during their tour in RVN. This, too, may be an artifact of availability, since hallucinogens of this nature are quite difficult to obtain in South Vietnam.

Among the officers and NCO's only one man, an E–5 who also reported habitual marijuana smoking, admitted to using acid before RVN (11-20 times) and during RVN (1-5 times).

Length of time of drug use

A total of 256 incoming and 364 outgoing EM drug users responded to the quotation "About how long have you used drugs?" The modes and medians for both groups were 24 months, but the means differed. The average length of time for the incoming user group was 28.8 months. The outgoing users reported an average of 25.7 months. The reason for this difference becomes clear when one remembers that 21.5% of the outgoing group used marijuana for the first time in Vietnam, while only 3% of them started using drugs *before* Vietnam and stopped their use while *in* Vietnam. This influx of new users into the ranks of the more chronic users was probably enough to lower the overall average noticeably, especially since many of the new initiates had begun using drugs less than 21 months prior to the date of the survey.

Time of initial use in Vietnam

For each drug surveyed in the questionnaire the respondents were asked to indicate which quarter(s) of the previous year they had used it. These responses were analyzed for the outgoing EM by tabulating the first quarter that each man reported he initiated use of a given drug while in RVN. Thus a rough estimate was obtained as to when EM were most likely to start using each of the six drugs surveyed. The results of this analysis are presented in Table 7.

A significant initial-use tendency was noted for two of the six drugs. There was a clear trend among marijuana smokers to begin use within three months after arrival. This can be partly attributed to the general tendency of heavy and habituated pre-RVN smokers to continue use in Vietnam as they might anywhere else. On the other hand, 84 (39.8%) of the 211 users who stated that they did not smoke marijuana *before* RVN started smoking in the *first* quarter, while 112 (41%) of the pre-RVN smokers began their RVN smoking in *other* than the first quarter. To test this relationship, a contingency coefficient was computed between extent of pre-RVN marijuana use and quarter of initial RVN use. This resulted in a coefficient of .310 which is significant at the .001 level (df-9). The indication is, then, that (a) pre-RVN smoking is a fair predictor of when initial RVN use will occur, but that other factors must also be taken into account; and (b) the probability is greatest that those who smoke any marijuana in RVN will start during the first three months.

Of the other drugs surveyed, only amphetamines showed a significant trend as to initial use. Twice as many EM began using amphetamines in the last quarter of their tour than began in the first quarter. This tendency is also maintained in the two middle quarters, so that we see a general increase throughout the year in the number of people starting to use drugs of this nature. Whether the trend is due to increased availability or some other factor is impossible to determine from these data.

Estimations of unit drug use

All the respondents were asked to estimate the percentage of men in their previous military units who used each of six drugs at least once a month. They were also asked to make a similar guess as to the percentage of people using marijuana at least twice a week. The medians, modes and ranges for these data can be found in Table 8.

As might be expected, a great deal of variability was found among these estimates, especially concerning marijuana and especially among the outgoing EM. A nearly even distribution at all percentage points emerged from the outgoing EM data on marijuana estimates. This is dramatically illustrated by the fact that 116 of them (the mode) estimated monthly pot smoking at between 71 and 80%, while 93 estimated 81–100% and 75 estimated zero percent. Interestingly, the median estimate among this group (i.e. 41–50%) very closely approximated the actual reported overall incidence of marijuana for the same group, that is 50.1%. Inspection of the median estimates presented in Table 8 for all surveyed drugs reveals a rough correlation between the estimates given by outgoing EM and their actual reported incidences for these drugs. A closer inspection shows that the median estimates for the other groups such as NCO's, officers and even incoming EM, were generally below the reported incidences presented in Tables 3–6. Next to the outgoing EM, the most accurate group appears to be that of outgoing Company Grade and Warrant officers, perhaps due to their similarity in age to the EM. In contrast, the Field Grade officers were consistently inaccurate and low in their estimates. For example, only one of the ten outgoing Field Grade officers estimated that more than 10% of his men used marijuana at least once a month. It is hard to say whether these low estimates are a result of ignorance, denial or some other factor. It goes without saying that much of the variance probably arises from actual, existing variability between different units as to extent of drug use. Also, the legal, disciplinary and promotional complications that surround drug use would prompt users to shun disclosure of such activities from their superiors whenever possible. Whatever the case, it appears that communication about drug use within units is being filtered at one or more points as it is conveyed from level to level within the command structure.

Another factor affecting estimates of drug use concerns the tendency to see others as being inclined in the same direction as oneself. It was the author's impression, while in Vietnam, that heavy drug users tended to estimate high drug incidence in their units, while non-users estimated little or no incidence. It was hypothesized that a high estimate would more likely emanate from (reported) users and that the reverse would hold for non-users. This hypothesis was tested by correlating estimates of monthly marijuana use with frequency of marijuana use before RVN (incoming EM) and during RVN (outgoing EM). The computed contingency coefficients for these two groups were .528 and .524, respectively. Both were significant at the .001 level with 30 degrees of freedom. Thus we can say with some confidence that a positive relationship exists between extent of marijuana use and estimation of use within one's military unit. This finding may at least partially explain the confusion that has arisen in the U.S. over the past few years as to how much drug use actually does occur among soldiers in South Vietnam.

Attitudes toward marijuana

The questionnaire included several questions pertaining to attitudes toward marijuana. Each respondent was asked if he thought marijuana should be legalized, would he use it if legalized and did he plan to continue use. Percentage of affirmative replies to these questions are presented in Table 9. Of the incoming EM, 43% were in favor of legalization, while 46.4% of the outgoing EM were similarly inclined. Substantially lower percentages than these were obtained from NCO's and Field Grade officers.

Company Grade and Warrant Officers emerged as somewhat less in favor of legalization than the EM; the figures were 26.5% and 17.5% for incoming and outgoing, respectively. It is interesting that the younger outgoing officers were less inclined in this direction than were the young incoming officers. This correlates with the lower rate of marijuana use among outgoing officers as opposed to the incoming group, even though the former supposedly had more contact with marijuana users than did the latter. One might speculate that the greater exposure to marijuana in RVN has resulted in more negative attitudes toward its use by the outgoing officers.

Contingency coefficients were computed for the outgoing EM between attitude toward legalization and (a) marijuana use before RVN and (b) marijuana use in RVN. The respective correlations obtained were .450 and .532, both of which were significant at the .001 level. It would appear that a relationship exists between pot smoking and partiality toward legalization, but it depends on factors other than simple incidence within the population or sample. In other words, the percentage of outgoing EM in favor of legalization did not differ as much from the incoming group on this attitude as did the two groups differ on actual incidence of marijuana *use*. In a sense, the attitude aspect for the incoming EM was "ahead" of the smoking factor, thus yielding a lower correlation.

The percentages obtained for all groups were lower for plans to use marijuana if legalized than for whether it should be legalized at all. However, the relative partiality between the various groups was approximately the same on the two questions. The outgoing EM were higher (40.9%) than the incoming EM (35.6%), while the reverse was (again) true for the Company Grade and Warrant officer groups. A contingency coefficient for outgoing EM between use in RVN and use if legal yielded a value of .532 (p less than .001).

When asked if they planned to continue marijuana use, 22.6% of the incoming and 27% of the outgoing EM responded affirmatively. The percentage of individuals in the officer and NCO groups who answered in this direction was very small. A contingency coefficient of .600 was obtained for the outgoing EM between use in RVN and plans for continued use. Of the 259 RVN users who responded to this question, 52% planned to keep smoking marijuana. This has serious implications for future legal handling of the offense of marijuana possession, when one considers that over ¼ of the returning EM from RVN intend to continue to break the law when they arrive home.

Combat and marijuana use

Much discussion has taken place in the mass media and elsewhere over the relative frequency of marijuana use in combat versus non-combat/support units. Opinions differ as to which of these two settings has the higher incidence of marijuana smoking. In an attempt to clarify this issue the data for outgoing EM were analyzed by comparing marijuana use in RVN with the number of firefights and mortar, rocket and artillery attacks reported. The resulting contingency coefficient was .217 (df–27) which was significant at the .01 level. This tells us that a slight, positive relationship exists between frequency of marijuana use and amount of exposure to enemy fire. It does not necessarily indicate that men smoke marijuana more while in battle, however. In fact, while both Roffman & Sapol (1970), and Postel (1968) reported greater smoking among soldiers exposed to combat, Postel stated that it was said to occur more *after* a battle in order to calm down and he presented several reasons for the differential. He believed that detection was less likely to occur out in the field and that "the tranquilizing effect of the drug may be more appreciated in the more stressful forward areas" (p. 57).

Demographic variables and marijuana use

Age. Because incidence of marijuana use has been said to be greater among older EM (Roffman & Sapol, 1970), contingency coefficients were computed between age and frequency of use before RVN for both incoming and outgoing EM. A low but significant (p. less than .01) correlation of .158 df—12) was obtained for the incoming group, while the value of .120 (df–9 gleaned from the outgoing group was not significant. Although age may be a variable worth considering in predicting marijuana use, these data indicate that it is not an important one.

Education. Contingency coefficients between education and marijuana use before RVN (incoming EM) and during RVN (outgoing EM) were determined and both were significant at the .001 level. The respective values were .250 and .239 with 27 degrees of freedom. Indications are that educational level is slightly correlated with frequency of use, perhaps due to the more permissive attitudes toward marijuana generally seen in American institutions of higher learning.

Marital Status. Contingency coefficients on marital status were determined from data for the outgoing EM. A value of .113 (df=6) was obtained between marital status and extent of marijuana use while in RVN. This coefficient was significant at the five percent level. However, no significant relationship was found between pre-RVN marijuana use and marital status. The most that can be said about these findings is that they show that a somewhat higher proportion of single (versus married) men join the ranks of marijuana users, at least in Vietnam, but the correlation is, at best, a feeble one.

Emotional problems. Very slight but significant contingency coefficients of .103 and .107 (df=3, p less than .02) were found between pre-RVN marijuana use by outgoing EM and whether they had been seen professionally for emotional purposes in (a) civilian, or (b) Army life. No significant correlation was found for this group between pot-smoking and being seen professionally while in RVN. Even if the correlations were larger, however, the question would still arise as to whether marijuana use is a cause or a symptom of emotional difficulty. The question cannot be answered from these data.

Volunteer status and previous RVN tour. No significant relationship was found between pre-RVN marijuana use (incoming EM) and whether an individual volunteered for the Army or was drafted. However, a slight positive contingency coefficient of .118 (df=3, p less than .01) was obtained between frequency of marijuana use before RVN and whether the incoming EM had experienced previous tours in RVN. This could suggest that the previous tour had some effect on later marijuana smoking, but the group of men with previous tours was only 5% of the total incoming EM sample, and therefore a bit too small to allow sweeping generalizations.

Administrative discharge. Thirty-two of the outgoing EM reported that they were being administratively discharged from the Army for unfitness or unsuitability under the provisions of Army Regulation 635–212. This action is commonly referred to as a "212", and since 50% of the men receiving 212's admitted marijuana use before RVN, it was thought that a statistical analysis between these two factors might be in order. As it turned out, however, no significant relationship was found between either (a) pre-RVN or (b) incountry smoking and whether a man received a 212 discharge.

Factors in data interpretation

It must be remembered in dealing with data of the type presented in this paper, that these responses are not actual *proof* of drug abuse, but are subject to the deficiencies attending all survey research. In other words, no true behavioral measures were obtained as to the real frequency and incidence of use for these various drugs—the respondents were free to report as they wished. Which brings us to the issue of whether the incidence figures are higher or lower than reality. It is difficult to determine if a man has distorted his report, and if so, in which direction. However, it is the opinion of this author that if distortions have been introduced into the data, that they are generally in the direction of under-estimation. Among those who use drugs there is a great deal of perhaps justifiable suspicion about being apprehended by authorities for their illicit practices. For a drug user to admit on paper that he has or is using these substances may be asking a great deal, especially if he fears the paper will be fingerprinted and traced to him, or has some other fantasy as to how he might be caught.[4] The major factors, then, are three in number. First, is the man motivated to cooperate in completing his questionnaire? Second, does he believe that the confidentiality of his answers will be maintained? Third, how motivated is he to distort his answers? In the present study non-respondents were, of course, eliminated from the analysis. Also, considerable effort went into assuring the men of their anonymity and establishing a position of credibility for the researchers. The third factor was harder to control for it depended mainly on being able to discard inconsistent or unreliable questionnaires. Nonetheless, if a man wants to distort his responses selectively and intelligently there is no way of uncovering this in a survey technique of the sort employed here. It can only be said that the impression of the author was that distortions of this type were not prevalent among the groups studied.

Another issue concerns the definition of what is a single incident of drug use and consequently what is a "heavy" drug user. This problem has been discussed rather extensively by Roffman & Sapol (1970). The present paper employed the same categories defined by Roffman & Sapol and arbitrarily added a "habituated user" category which included people who had used a given drug 200 or more times. This was done because it was felt that leaving the "heavy user" category (20 or more times) as the upper limit would exclude the type of data which differentiated between frequent versus daily users. In any event, the definition of a specific drug event remains unclear, since some men may interpret this, for example, as referring to smoking one marijuana cigarette and others may instead tabulate their total number of "highs", each of which includes several cigarettes.

Timeliness is another factor which must be considered. Since our own data were collected in late 1969, it would be unwise to extrapolate the drug incidence results isomorphically to RVN at either the present or some future time. Indications are that use of certain drugs is increasing in that theatre, but the extent or validity of such speculation cannot be determined from the results presented herein.

Finally, it should be noted that the outgoing group was a select one. They came from the northern geographic regions of South Vietnam and it is possible that the incidences of drug use reported here are dif-

[4] These factors were especially salient for the NCO-Officers groups, where the small numbers of men, a more confining processing room, and a member of the cadre present tended to heighten visability. If an officer admitted drug use on the questionnaire it would probably have been easier to identify him than an EM, assuming that apprehension had been the purpose of the study.

ferent from those that might have been obtained from sampling in the southern areas. Furthermore, these men were the ones who "made it through" a year or more in a combat zone. Excluded from the sample were the men who were killed, severely wounded, or evacuated from the country for other medical reasons. A few others were not included because they had specialized training and departed country from different locations. Whether or not the inclusion of such men would have altered the sample statistics is impossible to say, but this factor should be considered when attempting to generalize from these data to all Army personnel in South Vietnam.

TABLE 1.—DEMOGRAPHIC INFORMATION, INCOMING PERSONNEL

	Enlisted men group (N=1,000)	Noncommissioned officers group (N=119)	Company grade and warrant officer (N=68)	Field grade (N=6)
Age:				
Range	17–26	27–31+	19–31+	31+
Mode	19–20	31+	23–24	31+
Median	19–20	31+	23–24	31+
Marital status (percent):				
Single	73.7	9.2	32.4	16.7
Married	24.4	84.9	66.2	83.3
Divorced/separated	1.9	5.9	1.4	0
Education (years):				
Range	7–18	7–16	10–17	17
Mode	12	12	16	17
Median	12	12	16	17
Rank (enlisted men only) (percent):				
E–1	.7			
E–2	38.9			
E–3	31.0			
E–4	19.4			
E–5	7.5	10.1		
E–6	2.5	27.7		
E–7		43.7		
E–8		16.8		
E–9		1.7		
Median	E–3	E–7		
Volunteer for Army (percent):				
No	56.5	11.2	13.6	0
Yes	43.5	88.9	86.4	100
Time in Service (percent):				
1 year or less	61.6		30.9	
Between 1–2 years	25.7		20.6	
Between 2–3 years	6.4	.9	8.8	
Between 3–6 years	6.3	2.8	14.7	
Between 6–9 years		11.2	2.9	
Between 9–15 years		37.4	16.2	33.3
Over 15 years		47.7	5.9	66.7
Prior Tour in RVN (percent)	5.3	67.8	13.4	60.0
Ever sought help for emotional problems (percent):				
Civilian	5.6	.9	3.1	0
Army, before RVN	4.3	5.3	0	0
Articles 15:				
1 or more (percent)	18	28.9	0	0
Range	0–8	0–4		
Median	0	0		

TABLE 2.—DEMOGRAPHIC INFORMATION, OUTGOING PERSONNEL

	Enlisted men group (N=1,001)	Noncommissioned officers group (N=105)	Company grade and warrant officer (N=63)	Field grade (N=10)
Age:				
Range	17–26	27–31+	19–31+	29–31+
Mode	21–22	31+	25–26	31+
Median	21–22	31+	25–26	31+
Marital status (percent):				
Single	74.2	15.5	39.7	0
Married	23.2	72.8	57.1	100
Divorced/separated	2.6	11.7	3.2	0
Education (years):				
Range	7–17	9–17	12–17	12–17
Mode	12	12	16	16
Median	12	12	15	16
Rank (Enlisted men only) (percent):				
E–1	.3			
E–2	1.0			
E–3	5.9			
E–4	46.6			
E–5	42.1	12.4		
E–6	4.1	36.2		
E–7		42.9		
E–8		7.6		
E–9		.9		
Median	E–4	E–7		
Volunteer for Army (percent):				
No	55.7	13.5	9.7	10.0
Yes	44.3	86.5	90.3	90.0
Time in Service (percent):				
1 year or less	1.4			
Between 1–2 years	71.8	4.2	17.2	11.1
Between 2–3 years	20.4	2.1	22.4	0
Between 3–6 years	4.8	4.2	27.6	0
Between 6–9 years	1.6	9.4	10.3	0
Between 9–15 years		28.1	8.6	44.4
Over 15 years		52.0	13.8	44.4
Time in RVN:				
Range (months)	1–36	1–37	9–19	12
Mode	12	12	12	12
Median	12	12	12	12
Combat exposure (i.e. number of firefights, attacks, etc.) (percent):				
None	6.6	11.6	4.9	10
1–25	63.8	67.4	67.2	90
26–50	16.4	11.6	13.1	0
50+	13.2	9.4	14.8	0
Mode	[1]6–10	[1]1–5	[1]6–10	[1]1–10
Median	[1]11–15	[1]11–15	[1]11–15	[1]6–10
Prior tour in RVN (percent)	6.2	47.6	30.2	60
Ever sought help for emotional problems (percent):				
Civilian	4.0	1.0	1.6	0
Army, before RVN	3.1	2.9	1.6	10
Army, in RVN	2.6	1.0	1.6	0
Articles 15 (percent):				
One or more	30.1	35.3	10.0	0
Range (number)	0–9	0–7	1	0
Median	0	0	1	0
212 discharge (percent)	3.4	1.0	0	0
ETS from RVN (percent)	51.1	18.2	22.6	0

[1] Times.

TABLE 3.—INCIDENCE OF DRUG USE: INCOMING EM

[In percent]

	Marihuana (N=997)	Amphetamines (N=993)	Barbiturates (N=992)	Opium (N=992)	Heroin/morphine (N=991)	Acid (N=989)
Nonusers	65.1	87.6	90.0	94.5	95.7	88.4
Casual users	17.9	9.2	6.5	4.6	3.0	8.1
Heavy users	9.6	2.8	2.5	.9	1.0	3.2
Habituated	7.3	.4	1.0	0	.3	.3
Total users	34.8	12.4	10.0	5.5	4.3	11.6

TABLE 4.—INCIDENCE OF DRUG USE: OUTGOING EM

[In percent]

	Marihuana		Amphetamines		Barbiturates		Opium		Heroin/Morphine		Acid	
	Before RVN (N=996)	In RVN (N=994)	Before RVN (N=1001)	In RVN (N=998)	Before RVN (N=997)	In RVN (N=994)	Before RVN (N=997)	In RVN (N=998)	Before RVN (N=995)	In RVN (N=994)	Before RVN (N=994)	In RVN (N=993)
Nonusers	68.6	49.9	87.6	83.8	88.6	88.4	93.7	82.6	97.5	97.8	91.3	84.7
Casual users	15.9	20.5	8.3	11.0	7.3	7.8	4.4	9.8	1.1	1.4	6.8	3.2
Heavy users	8.0	11.9	2.9	4.0	2.5	2.7	1.0	5.8	1.1	.6	1.5	1.6
Habituated users	7.5	17.7	1.2	1.2	1.6	1.1	.9	1.8	.3	.2	.4	.5
Total users	31.4	50.1	12.4	16.2	11.4	11.6	6.3	17.4	2.5	2.2	8.7	5.3

TABLE 5.—INCIDENCE OF DRUG USE: NCO'S[1]

[In percent]

	Marihuana			Amphetamines			Opium			Acid		
	Incoming before RVN (N=119)	Outgoing		Incoming before RVN	Outgoing		Incoming before RVN	Outgoing		Incoming before RVN	Outgoing	
		Before RVN (N=105)	In RVN		Before RVN	In RVN		Before RVN	In RVN		Before RVN	In RVN
Nonusers	95.8	97.0	95.0	100	100	98.0	100	100	99.0	100	99.0	99.0
Casual users	3.4	2.0	3.0	0	0	1.0	0	0	1.0	0	1.0	1.0
Heavy users	.8	0	1.0	0	0	1.0						
Habituated users	0	1.0	2.0	0	0	0						
Total users	4.2	3.0	6.0	0	0	2.0						

[1] No incidence of barbiturates, heroin, or morphine was reported by this group.

TABLE 6.—INCIDENCE OF DRUG USE: COMPANY GRADE AND WARRANT OFFICERS[1]

[In percent]

	Marihuana			Amphetamines			Barbiturates			Acid		
	Incoming	Outgoing		Incoming	Outgoing		Incoming	Outgoing		Incoming	Outgoing	
	before RVN (N=68)	Before RVN (N=63)	In RVN	before RVN	Before RVN	In RVN	before RVN	Before RVN	In RVN	before RVN	Before RVN	In RVN
Nonusers	89.7	92.0	98.4	97.0	96.8	98.4	100	98.4	98.4	98.4	100	100
Casual users	10.3	8	1.6	3.0	3.2	1.6	0	1.6	0	0	0	0
Heavy users	0	0	0	0	0	0	0	0	1.6	1.6	0	0
Total users	10.3	8.0	1.6	3.0	3.2	1.6	0	1.6	1.6	1.6	0	0

[1] No incidence of opium, heroin, or morphine was reported by these officers, and no incidence of any drugs but barbiturates was reported by any of the field grade officers; 1 outgoing field grade officer reported using barbiturates 11 to 20 times before RVN.

TABLE 7.—POINT DURING PRECEDING 12 MONTHS OF RVN TOUR AT WHICH DRUG USE BEGAN: OUTGOING EM

	1 to 3 months	4 to 6 months	7 to 9 months	10 to 12 months	Total
Marihuana:[1]					
Number of users	243.0	85.0	60.0	93.0	481
Percent of total users	50.5	17.7	12.5	19.3	
Amphetamines:[2]					
Number of users	28.0	28.0	39.0	56.0	151
Percent of total users	18.5	18.5	25.8	37.2	
Barbiturates:					
Number of users	29.0	24.0	24.0	28.0	105
Percent of total users	27.6	22.9	22.9	26.6	
Opium:					
Number of users	47.0	42.0	31.0	45.0	165
Percent of total users	28.5	25.5	18.9	27.1	
Heroin/Morphine:					
Number of users	3.0	4.0	4.0	5.0	16
Percent of total users	18.8	25.0	25.0	31.2	
Acid:					
Number of users	7.0	10.0	10.0	14.0	41
Percent of total users	17.1	24.4	24.4	34.1	

[1] Chi-square significant at 0.001 level.

[2] Chi-square significant at 0.01 level.

TABLE 8.—ESTIMATIONS OF PERCENTAGE OF DRUG USE IN LAST UNIT

	Enlisted men		Noncommissioned officers	
	Incoming (N=1,000)	Outgoing (N=1,001)	Incoming (N=119)	Outgoing (N=105)
Marihuana at least once a month:				
Median	1-5	41-50	0	6-10
Mode	0	71-80	0	1-5
Range	0-100	0-100	0-80	0-100
Marihuana at least twice a week:				
Median	1-5	31-40	0	6-10
Mode	0	81-100	0	1-5
Range	0-100	0-100	0-100	0-100
Amphetamines at least once a month:				
Median	1-5	1-5	0	0
Mode	0	0	0	0
Range	0-100	0-100	0-100	0-100
Barbituates at least once a month:				
Median	0	1-5	0	0
Mode	0	0	0	0
Range	0-100	0-100	0-20	0-30
Opium at least once a month:				
Median	0	1-5	0	0
Mode	0	0	0	0
Range	0-80	0-100	0-10	0-30
Heroin at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-100	0-100	0-5	0-10
Acid at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-100	0-100	0-10	0-20
Marihuana at least once a month:				
Median	1-5	11-20	0	6-10
Mode	0	11-20	0	6-10
Range	0-50	0-70	0	0-60
Marihuana at least twice a week:				
Median	0	6-10	0	6-10
Mode	0	6-10	0	1-5
Range	0-20	0-80	0-5	0-70
Amphetamines at least once a month:				
Median	0	1-5	0	0
Mode	0	0	0	0
Range	0-20	0-70	0	0-30
Barbiturates at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-20	0-80	0	0-20
Opium at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-5	0-50	0	0
Heroin at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-5	0-50	0	0
Acid at least once a month:				
Median	0	0	0	0
Mode	0	0	0	0
Range	0-10	0-50	0	0

TABLE 9.—ATTITUDES TOWARD MARIHUANA

[In percent]

	Enlisted men (age less than 27)		Noncommissioned officers (age more than 26)	
	Incoming (N=1,000)	Outgoing (N=1,001)	Incoming (N=119)	Outgoing (N=105)
Should be legalized	43.0	46.4	7.6	5.7
Would use if legalized	35.6	40.9	2.5	4.8
Plan to continue use	22.6	27.0	0	2.9

	Company grade and Warrant Officer		Field grade	
	Incoming (N-68)	Outgoing (N-63)	Incoming (N-6)	Outgoing (N-10)
Should be legalized	26.5	17.5	16.7	0
Would use if legalized	11.8	9.5	0	0
Plan to continue use	2.9	0	0	0

APPENDIX I: QUESTIONNAIRE: SCIENTIFIC SURVEY

(By Dr. Morris D. Stalton)

We are running a survey on the number of men who have used various drugs or substances prior to and during their Vietnam tour. We would greatly appreciate your help in honestly answering the following questions. Please do *not* sign your name. We do not care to know who you are. Thus the information you give *can not* and *will not* be held against you.

Thank you very much for your cooperation and help.

1. Under which category do you belong? (Please check space below.)

Incoming EM —, Incoming Officer —, Outgoing EM —, Outgoing Officer —.

2. Which of the following drugs do you think should be made legal? (Check.)

Marijuana —, Downs, barbiturates —, Heroin —, Acid (LSD, STP) —, Speed, Ups —, Opium —, Morphine —, None —.

3. If they were made legal, which of the following would you use?

Marijuana —, Downs, barbiturates —, Heroin —, Acid (LSD, STP) —, Speed, Ups —, Opium —, Morphine —, None —.

4. Before coming to RVN, about how many times did you use marijuana? (Check.)

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10 —, 1 to 5 —, None —.

(a) During which quarter(s) of the past 12 months did you use marijuana?

1st 3 months —, 2nd 3 months —, 3rd 3 months —, 4th 3 months —, Never —.

(b) If you are leaving RVN, about how many times (this tour) did you use marijuana?

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10 —, 1 to 5 —, None —.

5. Before coming to RVN, about how many times did you use Speed (amphetamines, Ups)?

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10—1 to 5 —, None —.

(a) During which quarter(s) of the past 12 months did you use Speed ("Ups," etc.)?

1st 3 months —, 2nd 3 months —, 3rd 3 months —, 4th 3 months —, Never —.

(b) If you are leaving RVN, about how many times (this tour) did you use Speed ("Ups")?

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10 —, 1 to 5 —, None —.

6. Before coming to RVN, about how many times did you use Barbiturates (Downs, Reds, No. 10's, etc.)?

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10 —, 1 to 5 —, None —.

(a) During which quarter(s) of the past 12 months did you use Barbiturates (Downs, etc.)?

1st 3 months —, 2nd 3 months —, 3rd 3 months —, 4th 3 months —, Never —.

(b) If you are leaving RVN, about how many times (this tour) did you use Barbiturates?

200 or more —, 101 to 199 —, 81 to 100 —, 61 to 80 —, 41 to 60 —, 21 to 40 —, 11 to 20 —, 6 to 10 —, 1 to 5 —, None —.

7. Before coming to RVN, about how many times did you use opium?

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

(a) During which quarter(s) of the past 12 months did you use opium?

1st 3 months—, 2nd 3 months—, 3rd 3 months—, 4th 3 months—, none—.

(b) If you are leaving RVN, about how many times (this tour) did you use opium?

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

8. Before coming to RVN, about how many times did you use heroin or morphine?

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

(a) During which quarter(s) of the past 12 months did you use heroin or morphine?

1st 3 months—, 2nd 3 months—, 3rd 3 months—, 4th 3 months—, none—.

(b) If you are leaving RVN, about how many times (this tour) did you use heroin or morphine?

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

9. Before coming to RVN, about how many times did you use "acid," (LSD, STP)?

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

(a) During which quarter(s) of the past 12 months did you use "acid," (LSD, STP)?

1st 3 months—, 2nd 3 months—, 3rd 3 months—, 4th 3 months—, none—.

(b) If you are leaving RVN, about how many times (this tour) did you use "acid?"

200 or more—, 101 to 199—, 81 to 100—, 61 to 80—, 41 to 60—, 21 to 40—, 11 to 20—, 6 to 10—, 1 to 5—, none—.

10. Which of the following drugs do you plan to continue using?

Marijuana—, Barbiturates, Downs—, Heroin—, Acid (LSD, STP)—, Speedups—, Opium—, Morphine—, None—.

11. About how long have you used drugs?—years. —months. Never—.

12. Estimate the percentage of men in your last unit who used the following drugs at least once a month. (Percentage—how many out of 100 men.)

ACROSS FROM EACH DRUG, PUT 1 CHECK IN THE APPROPRIATE COLUMN

[In percent]

	None	1 to 5	6 to 10	11 to 20	21 to 30	31 to 40	41 to 50	51 to 60	61 to 70	71 to 80	81 and above
Marihuana											
Speed, ups											
Downs											
Opium											
Heroin											
Acid, LSD											

13. About what percentage of the men in your last unit used Marijuana *at least twice a week?* None—, 1–5%—, 6–10%—, 11–20%—, 21–30%—, 31–40%—, 41–50%—, 51–60%—, 61–70%—, 71–80%—, 81% and above—.

14. Have you ever had "Flashbacks" from drug use? If so please name those drugs:—.

15. Your age: 17–18—, 19–20—, 21–22—, 23–24—, 25–26—, 27–28—, 29–30—, 31 & above—.

16. Your rank: E–1—, E–2—, E–3—, E–4—, E–5—, E–6—, E–7—, E–8—, E–9—. Company grade Officer—. Field grade Officer—.

17. Number of years of school you completed:

8 or less—, 9—, 10—, 11—, 12—, 13—, 14—, 15—, 16—, 17 or more—.

18. How many brothers and/or sisters do you have?—. Are you the oldest? Yes—, No—.

19. Marital Status: Single—, Married, Separated or Divorced—.

20. Did you volunteer for the Army? Yes—, No—. Time in service? —years, —months.

21. Please write the first three digits of your MOS. (If Officer, use first 4)—.

22. Have you ever had any trouble with the law (civilian) other than traffic violations? If so please list types of offenses (optional).—.

23. Have you ever had any Articles 15 or Courts Martial? (optional). Number of Articles 15—. Number of Courts Martial—.

24. Have you ever gone for psychiatric or psychological help in the Army before coming to RVN? Yes—. No—.

a. Did you ever go for such help while a civilian? Yes—, No—.

25. Have you served any previous tours in RVN, in addition to this one? Yes—, No—.

26. *Only* if you are presently processing out of RVN, please answer the following: (All please see item #27 below.)

(a) How many months have you been in RVN, this tour only?—.

(b) About how many times were you in fire fights or under enemy mortar, rocket, or artillery attacks? None—, 1–5—, 6–10—, 11–15—, 16–20—, 21–25—, 26–30—, 31–35—, 36–40—, 41–45—, 46–50—, 51 or more—.

(c) Have you ever had psychiatric or psychological help during this tour in RVN? Yes—, No—.

(d) Do you ETS within the next month? Yes—, No—.

(e) Are you receiving a 212 separation from the Army? Yes—, No—.

27. If you have any comments or observations about the subject of drug usage, please feel free to express them on the back of this page.

Thank you very much for your help and cooperation.

APPENDIX II: FACSIMILE OF ——— DRUG INDEX TO ADMINISTRATION OF THE QUESTIONNAIRES[1]

Follows, I'm connected with (university) and I'd like to ask your cooperation in completing a brief research questionnaire. It's pretty simple; mainly all you have to do is check the appropriate spaces.

We're doing this research on drug use in Vietnam. This is a chance for you to express your opinions . . . feelings . . . and experiences in this matter, and I'd like to emhasize that this is completely *anonymous* . . . That is . . . we *don't* want you to write your name . . . and we *don't* care to know who you are. There will be no follow-up.

Therefore, please try to be as accurate as possible and give us as honest answers as you can so that the research will be valid.

Also, in the last question . . . Number 27 . . . if you want, we would like you to express your own feelings and opinions on this topic using the back of the last page of the questionnaire.

After you are done we will just have you pass them forward.

Thanks very much for your help and cooperation.

ACKNOWLEDGEMENTS

The author conducted this research while a member of the 98th Medical Detachment (KO), an Army mental health team stationed in South Vietnam. Another member of the team who proved very helpful in the planning and implementing phase of the study was (former) LTC William Cates, MC. The author wishes to express his gratitude to Dr. Cates for the contributions he made at that time.

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The author is indebted to Mrs. Harriet Saal, Supervisor of the Kimbrough Army Hospital Central Dictation Section who

[1] When Dr. Stanton was not addressing a group, these same remarks were made to that group with reference to him as the researcher.

spent many hours typing the manuscript and graciously worked overtime to complete it in time for submission to the Senate Subcommittee on Alcoholism and Narcotics.

Finally, the author would like to thank the Department of Defense Task Group Convened to Recommend Appropriate Revisions to DOD Policy on Drug Abuse. This group was able to bring the study to completion well ahead of schedule by assigning it a high priority, and the author is truly grateful for their interest and assistance.

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Mr. DODD. Senators will note that marihuana use was found to be even higher than the preliminary estimate. Instead of 46 percent, it was found that over 50 percent of the troops in Vietnam have used this drug.

Even more alarming, 52 percent of the drug-using troops who were interviewed announced their intention to continue using drugs on their return to the United States.

As Dr. Stanton points out in his study:

> This has serious implications for future legal handling of the offense of marihuana possession, when one considers that over ¼ of the returning EM (enlisted man) from RVN (Republic of Vietnam) intend to continue to break the law when they arrive home.

Finally, Mr. President, I am gratified to see the many hearings in both Houses of Congress in recent weeks on the problem of drug abuse in the military. I was somewhat surprised to read in the papers that some Congressmen were shocked, dismayed, and apparently unaware that there even was a military drug problem. I hope that in addition to going over some of the same ground covered in the last 4 years they would fill in the gaps by reading the testimony presented before the Judiciary's Delinquency Subcommittee and the many statements made on this subject in the CONGRESSIONAL RECORD since 1966. I am certain that once they have done that they will support S. 4393 which I introduced on this issue on September 24, 1970, which would authorize members of the Armed Forces to be discharged from active military service by reason of physical disability when such members are suffering from drug addiction or drug dependency, to authorize the civil commitment of such members after their discharge, and for other purposes.

CONCLUSION OF MORNING BUSINESS

The PRESIDING OFFICER. Is there further morning business? If not, morning business is closed.

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS, 1971

Mr. KENNEDY. Mr. President, I ask unanimous consent that the unfinished business be laid before the Senate.

The PRESIDING OFFICER. The bill will be stated by title.

The legislative clerk read as follows:

> A bill (H.R. 17755) making appropriations for the Department of Transportation and related agencies for the fiscal year ending June 30, 1971, and for other purposes.

The PRESIDING OFFICER. Is there objection to the present consideration of the bill?

There being no objection, the Senate proceeded to consider the bill.

Mr. BIBLE. Mr. President, we have been waiting rather patiently to call up the pending bill. Obviously there is one item in the bill that has rather emotional and growing interest, as we have heard much about it in the last several days, and over the preceding weeks and years both on the floor of the Senate, and through the news media. I am glad we are coming to grips with this problem today.

There are other items in this appropriation bill on transportation programs besides the SST which will have some problems but I do not think they have the intense emotional interest that will be inherent in the SST question.

As soon as my minority counterpart on the Committee on Appropriations, the distinguished Senator from New Jersey (Mr. CASE) arrives, I hope that we can arrive at some type of agreement to vote on the SST at a time certain this afternoon. I hope that will be somewhere in the 3 o'clock to 4 o'clock range. At least that is what I am suggesting and it is what I hope will be agreeable after discussing the matter with those who are on both sides of the question. I hope we can do that a little later on. As soon as the Senator from New Jersey arrives I will discuss the matter with him.

The Senator from Wisconsin (Mr. PROXMIRE), who, as everyone knows, has a great interest in the SST and who has spoken with respect to it many times with great feeling and sincerity over the weeks and years, has asked me if it would be possible to call up his amendment immediately after my statement and make his amendment the pending business. Personally, I have no objection to doing that, so as soon as I finish my opening statement, which is not too long, then I believe it would be proper to recogize the Senator from Wisconsin, and have him call up his amendment which has been printed and is at the desk, which has the effect of completely knocking out the $289 million-plus for the SST in the appropriation bill. That would bring us to grips with the big problem in the bill.

In the meantime while we are going through the preliminaries with the ranking member on the minority side of the Subcommittee on Transportation of the Committee on Appropriations I hope we can arrive at a firm time agreement. I have been trying to get a time somewhere between 3 o'clock and 4 o'clock this afternoon so that every one will be on notice. There has been notice in the newspapers in the Chamber and in the RECORD that this matter was going to come to a vote today so I think adequate notice has been given to all who have a real concern in this problem.

Mr. President, in connection with the bill that has been laid before the Senate I wish to first talk about the overall bill in order to put the entire bill in proper context.

The recommendations of the committee total $7,233,915,668; consisting of $4,489,890,000 in appropriations to liquidate contract authorizations, identified with the highway construction and highway safety program; $137,063 for debt reduction, a Coast Guard housing matter; and $2,743,888,605 in new budget authority relating to the various offices, administrations, bureaus, boards, commissions, and authorities, for which this bill provides funds.

The details of these recommendations appear in the committee bill and report before you. The testimony, on the basis of which your committee makes these recommendations, is in the two volumes—1,800 pages—of hearings. I believe a copy of the testimony is on the desk of each Senator. The subcommittee started taking testimony on July 23, and subject to rather numerous interruptions by many pressing matters, concluded the hearings on September 17.

I will highlight the items or significant changes recommended in the committee bill:

First. The bill includes the $289,965,000 for the civil supersonic transport, as requested in the budget and allowed by the House.

Later on I shall have comments to make on this particular item.

I think it would be more orderly if I waited for the amendment to be called up. The posture of this item is that it is before the Senate as allowed by the House and not changed by the committee. It was agreed to in the full amount. The amendment of the Senator from Wisconsin would strike the entire amount from the bill. We will talk about that first, as far as I am concerned. As I have indicated, it is the desire of the Senator from Wisconsin that this be the first order of business.

Second. Funds for the Coast Guard include $25,900,000 for a 15,000-man Select Reserve program level, as allowed by the House; restoration of $10,000,000—to provide $100,000,000—for the construction program; $35,000,000, as requested, for capital for the oil pollution revolving fund.

This was an item that came in by way of executive communication.

It was not considered by the House. It creates a revolving fund by which we

can try to meet the many problems that come with oil pollution. We unhesitatingly recommend the full amount. It is repaid by the industry, but a revolving fund of the dimension which we put into the bill is needed.

This will be an item in issue with the House, because it was not before the House. They had not considered it.

Third, Federal Aviation Administration funding proposed includes the full amount of operating funds, as requested in the amended budget, which I want to comment on. This was not before the House. It came before us as a matter of first impression in another Executive communication. We added the $28 million for air security guards, contingent upon legislation. The research and development program is funded at $47,500,000, the full budget request and $2,500,000 over the House bill.

The security guard item of $28 million is contingent upon legislation which has passed the House, which I believe has passed through the Commerce Committee, and which is now before the Finance Committee of the Senate, where there are some problems concerning the financing features of it.

We also recommended striking language which came to us from the House which would limit airport commitments below levels authorized in Public Law 91–258.

Fourth. The recommendations for the Federal Highway Administration include minor adjustments for staffing levels, for which reasonable requests for restoration were made; and the funds and program levels for the forest highway and public lands highways were brought back up to the 1971 budget request level.

Fifth. Recommendations for the National Highway Safety Bureau consist of adding $7,166,000 in requested restorations and increasing to the budget level of $80,000,000—from the House level of $70,000,000—the limitation on obligations.

Sixth. Recommendations for the Federal Railroad Administration include $21,688,000 for high-speed ground transportation research and development, as authorized by Public Law 91–444, of October 13, 1970.

The House did not consider this item because at the time it was before the House the authorizing legislation had not been passed. As I just noted, it has been passed since the House considered it.

Railroad research includes earmarking of $230,000 for car utilization research.

Seventh. The recommendations related to the Urban Mass Transportation Administration include deletion of limiting language which would restrict long-term commitments, as authorized by Public Law 91–469.

Of course, this was one of the great problems—and we have many of them in this country—that confronts us, namely, the problem of urban mass transportation.

Eighth. The recommendations for the Interstate Commerce Commission provide the $27,000,000 allowed by the House, earmarking $300,000 for additional car service agents; a new item of $3,216,668 for payment of loan guarantees is also included.

That was incurred in connection with defaulted guaranteed loans to the Boston & Maine Railroad, which has the same effect as a judgment and which must be paid.

The last item which we considered and on which I want to comment concerns a committee recommendation of $58.3 million for payment to local service air carriers by the Civil Aeronautics Board, which is approximately $31,000,000 over the House bill and the inadequate budget estimate.

We considered the budget amount to be inadequate for payments to the local service air carriers. As all of us who fly know, they are having problems through the length and breadth of the land. The added amount was to bring as close as we could currently the amount of money which would be paid to the local service as an airline subsidy.

The new budget totals $2,743,888,605; $164,308,668—including $87,904,668 of new or deferred items—over the House bill; $2,061,168 over the estimates; and $427,108,975 over the amount appropriated in the same bill last year.

It has been a pleasure for me to be associated with the bill. I have been on the Transportation Subcommittee for a number of years, under the chairmanship of the distinguished Senator from Mississippi. It was a pleasure for me to be his rather inadequate substitute this year, because of his requirement to be on the floor both on the Cooper-Church amendment, which took some weeks, and after that the military procurement bill, which also took some length of time.

Mr. STENNIS. Mr. President, when the Senator has completed his statement, will he yield to me?

Mr. BIBLE. I have finished it.

Mr. STENNIS. Will the Senator yield to me?

Mr. BIBLE. I am glad to yield to the Senator from Mississippi.

Mr. STENNIS. Mr. President, I want to warmly thank the Senator from Nevada for the very fine service he has rendered to the Senate and for the help he has rendered to me in holding hearings on the bill. He already handled one appropriation bill to completion in this session, as well as performing many other duties, but he took charge of this bill, handled the responsibilities of the chairman, all the way through, and was ably assisted by at least some of the members of the subcommittee.

I marvel at the grasp he had of the bill at the markup and at the full committee meeting. I commend him highly. I was not surprised, but in that short time he certainly mastered the subject. I am grateful to him, and the Senate owes him a debt of appreciation.

Mr. President, this is a highly important bill, and it is becoming more so every year. I have not done anything to it. I have done little to add to it, but this Department has grown rapidly. This is the fourth year that we have had a subcommittee. I was the chairman, and I am now the chairman, but I handled the bill for those first 3 years.

For instance, money is included in this bill for the FAA, an agency of growing importance and complexity, with problems galore. All kinds of transportation and related matters are involved.

We have an important matter here before us, and it will be ably handled by the Senator from Nevada. He speaks for me. We are in agreement on everything in it, except perhaps in a matter of degree, but I am not going to discuss that point here. It shows the unanimity with which we have worked on the bill, and I thank him for it.

Mr. BIBLE. I thank the Senator from Mississippi. I have always leaned heavily on him for his expert knowledge, not only in this field of transportation but in practically every other field. He is an expert in many areas, and does a careful and conscientious job.

We had evidence of deep interest on the part of practically all the members of this subcommittee. The subcommittee covers the area of transportation and, with the growing general interest in that field, the interest we had there was certainly justified.

Mr. President, I ask unanimous consent to correct technical language appearing in the committee amendment on page 6, lines 23 and 24; this correction would strike the words "section 11 of the Water Quality Improvement Act of 1970 (Public Law 91–224)" and insert in lieu thereof "section 11(k) of the Water Pollution Control Act, as amended".

This is a technical amendment only, I would say to anyone who might have an interest in this particular request.

The PRESIDING OFFICER. Is there objection to the request of the Senator from Nevada? The Chair hears none, and it is so ordered.

Mr. BIBLE. Mr. President, I now make the usual unanimous consent request that the committee amendments be agreed to en bloc, and that the bill as thus amended be regarded for the purpose of amendment as original text, provided that no point of order shall be considered to have been waived by reason of agreement to this request.

The PRESIDING OFFICER. Is there objection? Without objection, it is so ordered.

The amendments agreed to en bloc are as follows:

On Page 2, line 9, strike out "$17,230,000" and insert "$17,840,000".

On page 2, line 15, after the word "expended", insert a comma and "of which $4,600,000 shall be available for research into the meteorological and environmental effects of aircraft flight in the atmosphere".

On page 2, after line 17, insert:

"GRANTS-IN-AID FOR NATURAL GAS PIPELINE SAFETY

"For grants-in-aid to carry out a pipeline safety program as authorized by Section 5 of the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. 1674) $1,000,000."

On page 4, line 23, after the word "dependents", strike out "and the Coast Guard may provide for the transportation of said de-

pendents between such schools and their places of residence when the schools are not accessible to such dependents by regular means of transportation".

On page 5, line 1, after "the colon", insert *"Provided further,* That not to exceed $15,000 shall be available for investigative expenses of a confidential character, to be expended on the approval and authority of the Commandant and his determination shall be final and conslusive upon the accounting officer of the Government:"

On page 5, line 16, after "5 U.S.C. 3109", strike out "$90,000,000" and insert "$100,000,000".

On page 6, line 18, after the word "law", strike out "$19,500,000" and insert "$23,000,000"; and, in line 19, after the word "expended", insert a comma and "including $13,500,000 for the national data buoy development project".

On page 6, after line 20, insert:

"OIL POLLUTION FUND

"For the revolving fund authorized to be established pursuant to section 11(k) of the Water Pollution Control Act, as amended, $35,000,000, to remain available until expended."

On page 7, line 7, after the word "of", strike out "the Federal Airport Act" and insert "Public Law 91-258"; in line 10, after the word "shoes;", insert "and arms and ammunition;"; in the same line, after the amendment just above stated, strike out "$923,885,000" and insert "$951,885,000"; and, in line 11, after the amendment just above stated, insert a colon and *"Provided,* That $28,000,000 of the foregoing amount shall be available only upon enactment into law of H.R. 19444, 91st Congress, or similar legislation;".

On page 8, line 17, after the word "grant", strike out "$45,000,000" and insert "$47,500,000".

On page 9, line 23, after "5 U.S.C. 3109", strike out "$500,000" and insert "$525,000"; and, in line 24, after the word "exceed", strike out "$14,721,000" and insert "$14,826,000".

On page 10 line 7, after the word "exceed", strike out "$68,488,000" and insert "$70,433,000".

On page 10, line 18, after the word "expanded", strike out "$4,350,340,000" and insert "$4,352,390,000"; and, in line 22, after the word "and", strike out "$2,444,760,950" and insert "$2,446,810,950".

On page 12, line 7, after "(80 Stat. 939-40)", strike out "$3,443,000" and insert "$3,718,000".

On page 12, at the beginning of line 15, strike out "$15,000,000, a part of the amount authorized to be appropriated for the fiscal year 1969" and insert "$20,000,000, which sum is composed of $19,950,000, the balance of the amount authorized to be appropriated for the fiscal year 1969, and $50,000, a part of the amount authorized to be appropriated for 1970".

On page 13, line 7, after the word "expended", strike out "$13,000,000, a part of the amount authorized to be appropriated for the fiscal year 1969" and insert "$15,000,000, which sum is composed of $14,300,000, the balance of the amount authorized to be appropriated for the fiscal year 1969, and $700,000, a part of the amount authorized to be appropriated for the fiscal year 1970".

On page 13, line 17, after "5 U.S.C. 3109", strike out "$40,435,000" and insert "$47,601,000".

On page 14, after line 16, insert:

"HIGH-SPEED GROUND TRANSPORTATION RESEARCH AND DEVELOPMENT

"For necessary expenses for research, development, and demonstrations in high-speed ground transportation, $21,688,000, to remain available until expended."

On page 14, line 24, after the word "activities", strike out "$900,000" and insert "$1,005,000"; and, in line 25, after the word "expended", insert a comma and "of which not less than $230,000 shall be available for freight car utilization studies".

On page 15, line 25, after "5 U.S.C. 3109", strike out "$3,200,000" and insert "$3,450,000".

At the top of page 16, insert:

"RESEARCH, DEVELOPMENT, AND DEMONSTRATION

"For necessary expenses for research, development, and demonstration projects as authorized by the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1605); $20,000,000, to remain available until expended."

On page 18, line 7, after the word "which", insert "$300,000 additional shall be available for the employment of car service agents, and".

On page 18, line 1, after the word "Board", strike out "$27,327,000" and insert "$58,300,000".

On page 18, after line 12, insert:

"PAYMENT OF LOAN GUARANTIES

"For payments required to be made as a consequence of loan guaranties made by the Interstate Commerce Commission under section 503 of the Interstate Commerce Act, as amended (49 U.S.C. 1233), $3,216,668, together with such amounts as may be necessary to pay interest."

On page 19, after line 19, strike out:

"SEC. 303. None of the funds provided in this Act shall be available for administrative expenses in connection with commitments for grants-in-aid for airport development aggregating more than $220,000,000 in fiscal year 1971."

On page 19, at the beginning of line 24, change the section number from "304" to "303".

On page 20, at the beginning of line 3, change the section number from "305" to "304"; and, in line 5, after the word "of", strike out "$70,000,000" and insert "$80,000,000".

On page 20, at the beginning of line 8, change the section number from "306" to "305"; and, in line 10, after the word "of", strike out "$22,500,000" and insert "$33,000,000".

On page 20, at the beginning of line 13, change the section number from "307" to "306"; and, in line 15, after the word "of", strike out "$10,000,000" and insert "$16,000,000".

On page 20, after line 17, strike out:

"SEC. 308. None of the funds provided in this Act shall be available for administrative expenses in connection with commitments for grants for Urban Mass Transportation aggregating more than $214,000,000 in fiscal year 1971, plus the additional amounts appropriated therefor."

On page 20, at the beginning of line 23, change the section number from "309" to "307".

On page 21, at the beginning of line 1, change the section number from "310" to "308"; and, in line 10, after the word "Everglades", insert "and until any site selected on the basis of such study is approved by the Department of the Interior and the Department of Transportation: *Provided,* That nothing in this section shall affect the availability of such funds to carry out this study".

On page 21, after line 14, insert a new section, as follows:

"SEC. 309. None of the funds provided under this Act or any other Act shall be available for the planning or execution of programs for any construction of the Portland International Airport, or any other air facility in or near the mouth of the Columbia River, until appropriate studies to identify an environmentally acceptable site for an airport to serve the area are completed and until any site selected on the basis of such studies is approved by the Department of the Interior and the Department of Transportation and is reviewed and approved by the Council on Environmental Quality: *Provided,* That nothing in this section shall affect the availability of such funds to carry out these studies."

Mr. BIBLE. Mr. President, I am about to yield the floor. I shall, as I stated earlier, attempt to get a time limit on the SST amendment; and just as soon as the Senator from New Jersey (Mr. CASE) comes to the floor—and I understand from his staff that he will be here momentarily—we will confer together and see if we can decide upon some agreeable time, and announce it very early, so that Senators will be on notice. As I further stated earlier, I hope that will be somewhere between 3 and 4 o'clock this afternoon.

Mr. President, I yield the floor.

Mr. CASE. Mr. President, in general terms, with the exception of the SST, I support the bill wholeheartedly. I am particularly gratified by the businesslike way in which it has been handled. Most of all, I want to make known my complete concurrence in the action of the committee, under the leadership of the Senator from Nevada, in eliminating any ceiling on the mass transit appropriation, on mass transit spending, of the nature the House placed in the bill. That, I think, is enormously important, if this is to be a real rather than a paper program. It is essential in the interest of all our great cities and many of our smaller cities, too, that the mass transit program be converted into reality as quickly as possible.

The chairman was most cooperative in this matter. Although perhaps I was the initiating force in eliminating any ceiling in the bill, I had his full cooperation and I here want to express that thought. I hope it does him no harm in his own constituency.

Mr. BIBLE. I can assure the Senator from New Jersey that it will not.

Mr. CASE. On the matter of the SST, I may differ with the chairman of the subcommittee and with the chairman as the case may be—both, I guess—but that is well known. I am anxious that the vote on that matter occur, before more of our troops have left, so I shall not develop any further, in any repetitious way, my objections to that particular program, but will leave it to others who are moved to speak.

Mr. BIBLE. I appreciate the sentiments of the Senator from New Jersey.

AMENDMENT NO. 1002

Mr. PROXMIRE. Mr. President, I call up my amendment No. 1002, and ask for its immediate consideration.

The PRESIDING OFFICER. The amendment will be stated.

The legislative clerk read as follows:

On page 2, line 20, strike all language beginning with the words "Civil Supersonic Aircraft Development" through the end of line 2 on page 3.

Mr. PROXMIRE. Mr. President, this amendment eliminates the $290 million for the supersonic transport. I expect to speak on this subject later. I shall speak very briefly now, simply to indicate some of the reasons why I think the action

taken yesterday greatly strengthens the hand of those of us who feel these funds should be taken out of the pending appropriation bill.

Mr. President, I think the Senators from Washington did a fine job yesterday in bringing before the Senate a bill which would limit the flights of the supersonic transport, except for experimental purposes, essentially to flights over the ocean. I think that was a very fine measure, and, of course, I cosponsored it.

They accomplished something that I think was equally significant in saying that unless the supersonic transport can be modified so that at takeoff and landing, and while it is taxiing at the airport, the sound level will be cut down to 108 perceived noise decibels, which is the present standard for subsonic flight, the contract will be in default and the SST will not be produced.

Mr. President, as I say, I think this is a good contribution, and very helpful; and, of course, it is encouraging to all those who believe we should not support a project which is going to pollute our environment with noise.

At the same time, Mr. President, I wish to point out why this makes it a very bad investment, and why it increases greatly the likelihood that if we put $290 million into this project today, that $290 million is likely to be lost.

The PRESIDING OFFICER (Mr. STEVENSON). If the Chair understands the Senator's amendment correctly, his intent is to strike all the language on page 3 between line 1 and line 8; is that correct?

Mr. PROXMIRE. Mr. President, as I understand it, the amendment reads as follows:

On page 2, line 20, strike all language beginning with the words "Civil Supersonic Aircraft Development" through the end of line 2 on page 3.

The PRESIDING OFFICER. Evidently the bill as printed is in a different form.

Mr. PROXMIRE. Mr. President, I shall be happy to modify my amendment to recognize the fact that the bill has been changed, as I understand it, since the time the amendment was first submitted; and I shall at a later time, in a few minutes, offer an amendment which will meet the fact that this bill which is now before us is different from the one which we originally proposed to amend.

In effect, what I would do is prepare an amendment which would delete the language on page 3 of the bill, lines 1 through 8, inclusive; and I believe that would accomplish the purpose I intend.

The PRESIDING OFFICER. The amendment will be modified accordingly.

Mr. PROXMIRE. All right; as I understand it, that accomplishes my intent, and the amendment, then, is in order?

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

The modified amendment is on page 3, to strike out lines 1 through 8, as follows:

CIVIL SUPERSONIC AIRCRAFT DEVELOPMENT

For an additional amount for expenses, not otherwise provided for, necessary for the development of a civil supersonic aircraft, including the construction of two prototype aircraft of the same design, and advances of funds without regard to the provisions of section 3648 of the Revised Statutes, as amended (31 U.S.C. 529), $289,965,000, to remain available until expended.

Mr. PROXMIRE. Mr. President, as I say, the bill that we passed yesterday provided that the SST will satisfy sideline approach and takeoff noise standards now in effect for subsonic jets. The standard to be met—108 perceived noise decibels—is far below the 124 perceived noise decibels that the SST now makes on the sideline; and the testimony is, of course, in a very complicated technological area, but the engineers tell us this means the sound is 3 to 4 times, at least, greater than the standard which is now established. In fact, General Electric's ultimate goal for the SST engines has been 112 perceived noise decibels, which is 40 percent above the maximum now permitted. The bill passed yesterday attempts to compel compliance with the subsonic standards, but the New York Times reported this morning that the Department of Transportation itself said that the Magnuson-Jackson bill, which passed the Senate yesterday, "would make a difficult job harder."

In other words, the Department of Transportation has been deeply concerned with whether or not they can reduce the noise emitted by the SST to 112 decibels, and there is a strong feeling on the part of everyone we have talked with over there that it would be an extraordinarily difficult thing to do. They stated they have made very little progress along this line, and now to be required to cut the level down to 108 decibels means that while, as I say, the Department of Transportation indicates it is not impossible, perhaps, it is most difficult; and I would say its achievement would be unlikely.

If the supersonic transport does not comply with the noise standards, there will be no SST, and the taxpayers would lose every penny of the $290 million we have put into the appropriation today.

That is only one of a series of risks and dangers which we confront in proceeding with this $290 million appropriation—I mean, of course, risks and dangers to the taxpayers putting up the $290 million.

The second is that there are likely to be overruns. As I have said before, the plane is made of a new and exotic metal—brushed titanium honeycomb. This has never been used before. All of our experience in dealing with aircraft indicates that when you get into a new technology, there are difficulties, new designs are required, and new adjustments; there are problems in production, there are problems in testing, and the cost escalates and escalates; and again and again we have, in such cases, seen overruns of 100 percent, 200 percent, or 300 percent.

An overrun in this case of more than 50 percent would very likely make the SST economically unviable. The fact is that it suffers a handicap now because it is likely to cost about $50 million a copy, and it is in competiton with a plane, the 747 which costs about $20 million a copy. The airlines might well find, in view of the amortization difficulties, the problems encountered in attempting to amortize a $50 million investment, that the supersonic transport may not be worthwhile even at $50 million. So, if the cost increases to $75 million or $100 million per copy, forget it. Then the taxpayers' $290 million would go down the drain.

In the third place, the assumption that the supersonic transport is going to work depends on the continued prosperity of the airlines and a willingness to buy. This, too, has already proved to be a very tenuous assumption. The airlines are in great difficulty now. They are having trouble buying 747's the subsonic jumbo jet they would like to get, although this is a fine plane and is a very practical and effective plane.

Stuart Tipton, representing the Nation's airlines, told the Appropriations Committee in August that they would not want to be asked to put up any more money for the SST now. They do not have it, and they are not that enthusiastic about the SST, anyway. They have not made reservations for the plane. They have paid for delivery positions.

The difference between reservations and delivery positions in this case is approximately $1,000,000 or 2½ percent. They have paid about 2½ percent down; but to ask them to come up with any more now, according to the airlines, is asking too much. If the airlines find that they cannot do this, that their capital position is such that they cannot do this, then the supersonic transport would not work out, and the taxpayer would lose the $290 million.

In the fourth place, the assumption on which the FAA is proceeding, that they will be able to have a successful operation and that the SST will be able to pay back to the Government its investment, is that the traveler values his time at one and a half times earnings, and that there will be a very substantial expansion every year of airline travel.

Both those assumptions have to come true. If they do not, then the supersonic transport will not be a success.

There is considerable evidence that travelers do not value the time they would save by taking a supersonic transport at one and a half times their earnings. In fact, if we make the assumption that they value their time equal to their earnings, the result is that there would be a purchase of approximately 139 planes. With 139 planes purchased, the industry would make a profit of about $500 million, and the Federal Government would lose all its investment. So, here again, the risk that the taxpayer is taking on the basis of the investment we are asked to make today is very substantial.

Each of these four assumptions seems to me to be unlikely to work out to the SST's advantage. It is likely that the SST will not be able to meet the noise standards, it is likely that there will be overruns, it is likely that the airline industry is not going to be much more prosperous 6 or 7 years from now than it is today, and it is likely that passengers will not value their time at more than equal to their earnings. If any one of

these assumptions turns out to be correct, we have thrown $290 million down a rathole.

That is just one of many arguments. I have not said anything about the environmental arguments, which I think are the most compelling of all, in spite of the action taken yesterday; but I am sure discussion of that subject will take place as the debate proceeds.

I yield the floor.

Mr. ALLOTT. Mr. President, as a member since 1959 of the Subcommittee on Independent Offices of the Committee on Appropriations, and subsequently also a member of the Subcommittee on Transportation since these matters came to the Transportation Subcommittee, I intend to vote for the SST program.

This is a vote for prudent investment, and I do not care how many times things are said on the floor that indicate otherwise. It is an investment in the future of a vital segment of the American economy—the commercial aircraft industry. In addition, it is an investment in the real sinew of American economic might—large-scale technology-intensive industry.

This vote is also a vote in favor of prudent, sober environmental concern. The SST has become a symbol of environmental recklessness. I must reluctantly reply that this allegation typifies a kind of recklessness which threatens to discredit the whole movement for a better environment.

In the remainder of my remarks, I want to explain why support for the SST is support for our economic future and our prudent environmental concern.

My support for the SST is not undertaken lightly.

My studies in this matter go back over a period of 10 years. My studies and my conclusions represent a settled conviction arrived at over these years of scrutiny of the aircraft industry in general and this project in particular.

No other Member of the Senate has had a livelier interest in or exposure to the SST controversy than I, with perhaps the exception of the two Senators from Washington. I have been a pilot, and I have always followed the serious professional literature of the air industry, and I do so today.

During the last 10 years in the Senate, I have served on the Appropriations Committee. In the full committee, and in the Transportation Appropriations Subcommittee, I have had many opportunities to explore all sides of this many-sided controversy, from the time the first dollars were appropriated for the development of an engine to the present time.

These years of interest have brought me to one strong belief and one firm conclusion. I strongly believe that the SST is a viable aircraft that will figure prominently in air travel in the last three decades of this century. I am firmly convinced that this is not the time to allow pessimistic—but tentative, and only tentative—hypotheses to frighten America away from this promising venture.

The question before this body is Whether or not the United States is determined to hold its position as the world's leading producer of commercial aircraft? We must all ask ourselves this question: Is it plausible to think that people in the 1990's will be flying in basically the same airplanes they flew in during the 1960's?

The SST is alive and well in Europe, which until recently has been a lucrative market for American aircraft. The Concorde has done for Britain and France what it previously took world wars to do—it has them working together. And the Soviet TU–144 is coming along well. Both planes have been flown over twice the speed of sound.

Like it or not, these great nations are in the race to capture the SST market. Like it or not, their governments are giving solid support to development programs. Like it or not, airlines are voting with their checkbooks in favor of the SST's. The remarks made earlier by the distinguished Senator from Wisconsin to the contrary, the fact that the airlines are not in a position to place more cash on the line for airliners which are perhaps 10 years down the road is no indication that they are not in the market for those planes, because they are. I know the airline industry, and I know that they are.

They believe that the plane is technologically and economically viable and they are planning orders.

Therefore, like it or not, America's hold on 84 percent of the free world aircraft market is in serious jeopardy. In fact, it is quite clear that unless the SST is built, our hold on that market is doomed.

If we lose our overseas markets, we stand to sustain a $22 billion balance-of-payments loss and a loss of $6.7 billion in tax revenues in just 12 years.

If this $290 million appropriation can measurably enhance our chances of avoiding these losses, then it must rank as one of the most unambiguously lucrative investment opportunities of all time.

Set against these staggering sums, the $290 million appropriations seems paltry indeed. What is more, under the terms of the program, the Government stands to get all of this investment back when the SST becomes a paying proposition.

Even if we continue to support the SST, there is no guarantee that our supremacy will be maintained. But one thing is certain. If we cash in our chips and silently steal away from the competition, then our supremacy is as doomed as the SST—and so far as our leadership in supersonic transport is concerned.

Mr. President, the penultimate sin in government is to advocate an end without advocating the means to achieve that end. The ultimate sin in government is to advocate an end while actively opposing that means necessary for achieving that end. I am afraid that those opposing the SST may be unwittingly committing this ultimate sin.

All of us want a healthy balance-of-payments situation; all of us want a stable and competitive and technologically progressive aircraft industry; but not all of us want to deliver the means for these ends. I think that the SST appropriation is a relatively painless means of promoting these great ends.

Now I want to speak briefly about the anxieties aroused by environmentalists. These concern the emissions and the noise that will result from SST flight.

While we have heard many people quoted on this subject, I invite attention to the fact that the endless years of research on environmental problems by the Government and what it is doing now in the way of research, with task forces on noise, and every other aspect of the problem, have simply been avoided by those who are opposed to the SST. I hope to go into that later this afternoon.

I do not want to summarize the various conflicting opinions coming from various sources in the scientific community. I simply want to emphasize the fact that the reports are conflicting. Opinion is divided on almost every particular in the indictment of the SST as a threat to the environment.

Again and again we run up against the statement: the scientists do not know what the environmental consequences of SST fleets will be. And, of course, what could be less surprising. Scientists are just like the rest of us in one important particular: the number of things they do not know is literally infinite.

The question is: Since when must we feel obliged to throttle down American society, and abstain from technological advances, just because the scientific consensus is that we do not now know that the final outcome of it all will be? We do not know for sure whether the environmental effects of a large world fleet of SST's will be unacceptable. I do not hesitate to say that if the aircraft is a threat to the environment, I will use all the power at my command to see that its inadequacies are corrected or, if that is not feasible, that it is permanently removed from service.

I do believe that we will be able to make projections about the long-term effects of full-service SST fleets long before those fleets are actually airborne. In fact, from flights of our prototypes we will be able to make these projections. I submit, Mr. President, that no scientist worth his salt will project absolutely what the effects of this will be until the prototypes are flying. Therefore, a vote for further SST development is consistent with a firm and prudent concern for the environment.

Too often environmental concern translates in practice into a vague, generalized hostility toward machines and technology. Some environmentalists today seem to take seriously the laconic remark made by the poet Ogden Nash: "Progress was alright once—it just went on too long."

Further, there is a constant danger in legislating that we will cast votes for symbolic impact rather than on the merits of a particular piece of legislation. There is some danger that the SST might be sacrificed as a gesture of concern for the environment.

No one has a monopoly on concern for the environment. Many of those in the Senate who most seriously advocate adoption of the SST have also taken the lead for years in concern for the environment. If we did sacrifice it, it would be unfortunate. It would give the false impression that the SST is a proven threat to the environment—and nothing could

be less true—and it would divert us from the substantial—as opposed to the symbolic—measures necessary for environmental improvement.

The results of extensive pro and con hearings on this matter are readily available to every Senator. That is stretching back over a period of 10 years. I am sure that all Senators have prepared for this vote by getting beneath the headlines and into the hard data—some portions of it conflicting; some portions of it more balanced and objective than others—which has been gathered by the many interested participants in this debate.

Personally, I believe that the Department of Transportation, and especially Mr. William M. Magruder, director of the SST program, deserve the highest praise for the comprehensive materials they have assembled for the explanation and defense of this project. They have made their case. I urge support for the SST.

Mr. President, I urge my colleagues to vote down the pending amendment. The amendment has repeated itself year after year and Congress has repeatedly voted it down—usually by a rather overwhelming vote.

Mr. President, I yield the floor.

Mr. HATFIELD. Mr. President, I rise at this time to discuss section 309 of the appropriations bill now before us, that of the Department of Transportation, and later shall make a motion to strike the section from the pending bill. This particular section concerns the development of the Portland International Airport.

I am pleased to have the opportunity to discuss this with my two good friends, Mr. MAGNUSON and Mr. BIBLE. As a member of the Interior and Insular Affairs Committee, where I serve on a subcommittee chaired by Mr. BIBLE, and on the Small Business Committee which he also so ably chairs, I note that we work in concert toward solutions of common problems on both committees far more often than we disagree. As the senior Senator from Washington, my friend, Mr. MAGNUSON, and I have worked together numerous times as we try to solve problems common to us northwesterners. I have enjoyed this collaboration in the past, and I look forward to more joint endeavors in the future.

I am deeply troubled by the committee's action reflected in section 309 of the bill. I do not think it represents what is best for my State, for the residents of southwest Washington, and for the Nation. I also fear this action could start a trend that might impede the Council on Environmental Quality as it considers urgent matters of great concern to my colleagues from Nevada and Washington and to me.

I would like to offer a little background on the development of the Portland International Airport. Our existing terminal was put into operation in 1958. During my 8 years as Governor, I worked closely with the Port of Portland, as we watched the airport traffic surpass our estimates after 1963. The Port of Portland is a State agency whose members were appointed by the Governor. As we all are aware, it was about this time that airports across the country began to experience a more rapid growth rate. Our conferences between the Governor's office and port officials, and the port's projections after 1963, clearly showed that the Portland International Airport would need to grow at a time sooner than we had forecast earlier.

By late 1966, the port has engaged a very distinguished firm to provide a master plan for future growth and expansion. A central result was that our runways had to be lengthened and separated more if expansion was to take place at the present site.

I would point out to my colleagues that expansion of the existing Portland International Airport was not the only alternative studied when it became clear that the Portland—northwest Oregon—southwest Washington area would need a facility with greater capacity. Serious consideration was given a site between Portland and Salem, near the town of St. Paul. It was only after much research that a decision was reached to enlarge the existing Portland International Airport.

As Governor, and since that time as Senator, I have been intimately involved in this project. I have helped, in all ways possible, to expedite approval of the project so that work can begin. I am very familiar with this project, and would like to discuss certain aspects of it.

Expansion of the two main runways at Portland International Airport can be achieved only by use of a relatively small landfill along the edge of the Columbia River. The angle of the two runways will be turned slightly, as well as lengthened.

Exhaustive and thorough studies were made to ascertain the environmental impact of this action. It is to this point, Mr. President, that I wish to address these remarks. I want to assure my good friend and colleague from Washington that his fears about any adverse impact of the environment have been studied and restudied. I hope that the senior Senator from Washington will see the great weight of the evidence supports development of the Portland International Airport in a manner consistent with sound environment protection.

First, let us consider the impact of the slight intrusion into the Columbia River by the land fill. The question is, Would serious damage be done to the river itself by any physical alteration of one bank?

I believe the facts show that there is no damage to the flow or channel, nor any other aspect of the river as it passes by the airport site. A respected consulting engineering firm studied the hydrolic aspects of the proposed expansion. They found that "sediment transport capacity of the proposed channels would tend to be more uniform than it is in the present channel. This means that both scour and deposition would be diminished." This means less erosion and less silting than we have now. The report also notes that "flood passing ability would be equal to or slightly greater than that of the present channels."

It is the desire of the senior Senator from Washington to ask the Council on Environmental Quality to review this project. I would like to call to the attention of my colleagues a letter from Russell Train, now Chairman of the Council on Environmental Quality, written when he was Assistant Secretary of the Interior.

The letter addressed itself to the question of environmental disruption caused by the dredge and fill operations of the airport expansion. The letter says, in part:

> The Department of the Interior has interests in seeing that the game refuge, recreational facilities, and maintenance of water quality during dredging operations be given due consideration. It appears that the Port of Portland will be able and willing to meet the minimum conditions we consider necessary—with regard to these three matters.

I ask unanimous consent that the full letter from Mr. Train to Gen. F. P. Koisch appear at this point in the RECORD.

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

U.S. DEPARTMENT OF THE INTERIOR,
Washington, D.C., May 19, 1969.

Brig. Gen. F. P. KOISCH, USA,
Director of Civil Works,
Office of the Chief of Engineers,
U.S. Department of the Army,
Washington, D.C.

DEAR GENERAL KOISCH: Responding to your February 5 letter concerning an application of the Port of Portland for a permit for dredge and fill operations incident to the expansion of Portland International Airport, we offer the following comment.

The Department of the Interior has interests in seeing that the game refuge, recreational facilities, and maintenance of water quality during dredging operations be given due consideration. It appears that the Port of Portland will be able and willing to meet the minimum conditions we consider necessary—with regard to these three matters.

Sincerely yours,

RUSSELL E. TRAIN,
Under Secretary.

Mr. HATFIELD. Mr. President, the next aspect of environmental protection concerns noise from aircraft. I certainly share my colleague's concern in this area.

First, I would like to quote from a letter to the Port or Portland from Fred S. McKnight, Chief, Air Traffic Branch, Oregon and Washington, of the Federal Aviation Administration. Mr. McKnight notes that "at the present time, aircraft landing to the east, or taking off to the west on the north parallel runway pass over the downtown area of Vancouver." Mr. McKnight also notes that aircraft using the southern runway in the same way "pass over or near the Parkrose area east of Portland."

Continuation of current flight patterns will be over downtown Vancouver, Wash., and the Parkrose area of Portland.

I wish to point out to my colleagues the effect on noise level if the new runways are constructed. Planes using the new north runway, again quoting Mr. McKnight, "would be shifted southward over the Columbia River and south of the city of Vancouver." Also, the FAA letter notes that use of a new south runway "would shift the extended centerline of the runway northward which would reduce noise exposure to residents of the Parkrose area."

While the FAA report admits to "a slight increase in noise in a relatively small area along the north bank of the river," the letter states "the much larger areas of high noise level will be shifted southward away from Vancouver to over the Columbia River and the bottom lands on the south side of the river. The new areas affected are not primarily residential areas."

Let me highlight a conclusion reached by the FAA. It states:

The FAA study concluded that there will be an overall reduction of noise exposure over the downtown area and principal residential areas of Vancouver, Washington, by construction of the new runways. In addition there should be a slight improvement in the Parkrose area southeast of the airport.

I ask unanimous consent that the full letter from Mr. McKnight appear at this point in the RECORD.

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

FEDERAL AVIATION ADMINISTRATION,
Seattle, Wash., February 17, 1969.

AERONAUTICAL STUDY NO. 68-SEA-38-NRF, DETERMINATION OF AIRSPACE USE

On June 13, 1968, the FAA circularized for public comment a proposal by the Port of Portland to replace the two principal runways 10R/28L and 10L/28R with two new runways 5,000 feet apart realigned to 9R/27L and 9L/27R.

The FAA letter "To All Concerned" stated that objectors to the proposal should state valid aeronautical reasons how the proposal would adversely affect safety of air navigation. Because of the considerable public interest and the many comments received, the FAA conducted an Informal Public Hearing in Portland, Oregon, on September 25 and 26, 1968.

Both in writing and at the hearing many comments were received in support of and in opposition to the proposal. Those supporting the proposal spoke to the need for expanding the capability of the airport to meet the needs of the public for air transportation. They called attention to the advantages of the present airport location in serving the public because of its central location in the greater Portland-Vancouver metropolitan area, and its proximity to rail, highway and water transportation facilities for an integrated transportation system. The objections were primarily concerned with possible increased noise, possible effects on river hydraulics, and effects on the recreation areas, wildlife and natural beauty.

EFFECT ON OTHER AIRPORTS

No objections to the proposed new runways were received based on safe and efficient use of airspace at other airports in the vicinity.

The FAA study developed the following facts. The extended centerline of the existing runway 10L/28R passes directly over Pearson Airpark at Vancouver, Washington, which is located 3.5 miles northwest of the end of runway 10L. Because of potential traffic conflictions between aircraft using runway 10L/28R and aircraft using Pearson Airpark, the FAA on October 6, 1967 issued a Special Air Traffic Rule in FAR 93, Section H, requiring aircraft using Pearson Airpark to contact Portland Tower and to fly all traffic patterns to the north of Pearson Airpark. The extended centerline of the proposed new runway, 9L/27R, would pass approximately 2,000 feet south of Pearson Airpark. Safety of operations at the two airports would be improved by providing lateral separation between the flight paths of aircraft using the two airports.

The extended centerline of the proposed runway 9L/27R would pass directly over Troutdale Airport eight miles to the east. A 2½ degree glide slope would be at an elevation of 1830 feet MSL over Troutdale Airport. Aircraft operating IFR or VFR using runway 9L/27R at Portland would normally be at or above the glide slope altitude. The field elevation at Troutdale is 36 feet MSL and the traffic patterns are presently flown at 1000 feet above ground. A traffic pattern altitude of 800 feet above the airport elevation is feasible for Troutdale and the FAA will recommend this altitude for Troutdale patterns if the new runway is constructed. This will provide approximately 1000 feet vertical separation from aircraft on approach to Portland. In addition the FAA operates a control tower at Troutdale Airport 16 hours per day during the active traffic periods. The vertical separation between flight patterns and the control tower service will provide adequate safety for the flights using both Troutdale Airport and Portland International Airport.

The proposed new runways would not affect other airports in the vicinity to any greater extent than the existing runways at Portland International Airport.

The FAA study concluded that the construction of the two new runways proposed at Portland International Airport would have no adverse effect on safe and efficient use of airspace at other airports in the vicinity, and would result in some improvement in safety of operations in the vicinity of Pearson Airpark.

The KGW radio towers 636 feet AMBL located approximately 16,800 feet west of the threshold of the proposed Runway 9R will penetrate the obstruction standards of FAR 77.27(b) approach surface by 240 feet. The Port of Portland has recognized this obstruction and stated in their presentations at the FAA hearing that these radio towers will be relocated or lowered if the plan is approved.

NOISE

Many residents of the City of Vancouver, Washington, objected to the proposed construction because of anticipated additional aircraft noise. The FAA recognizes aircraft noise as a factor in its airspaee review of airport proposals.

The FAA study showed that at the present time aircraft landing to the east, or taking off to the west on the north parallel runway, 10L/28R, pass over the downtown area of Vancouver. Approach and departure paths to the west for the new north parallel runway 9L/27R would be shifted southward over the Columbia River and south of the City of Vancouver. Similarly, aircraft taking off to the east or landing to the west on the present south parallel runway 10R/28L pass over or near the Parkrose area east of Portland. The new south runway 9R/27L would shift the extended centerline of this runway northward which would reduce noise exposure to residents of the Parkrose area.

The new north parallel runway 9L/27R is proposed to be built partly on a fill in the Columbia River and will be closer to the north bank of the Columbia River adjacent to the airport by amounts varying from 500 to 2,500 feet as compared to the present north parallel runway 10L/28R. Applying typical noise contour curves to the existing and proposed runways indicates there will be a slight increase in noise in a relatively small area along the north bank of the river opposite the airport. The much larger areas of high noise level extending from the ends of the runways along the extension of the runway centerlines will be shifted southward away from Vancouver to over the Columbia River and the bottom lands on the south side of the river. The new areas affected are not primarily residential areas.

The FAA study concluded that there will be an overall reduction of noise exposure over the downtown area and principal residential areas of Vancouver, Washington, by construction of the new runways. In addition there should be a slight improvement in the Parkrose area southeast of the airport.

RIVER HYDRAULICS

Some objections received by the FAA concerned possible adverse effects on the Columbia River hydraulics.

The U.S. Army Corps of Engineers solicited comments and conducted a public hearing in Portland on August 1, 1968 to assist them in studying possible effects on the Columbia River of the proposed filling and dredging. That agency is now reviewing and studying the proposal and will be issuing a separate determination on these matters.

OTHER EFFECTS

The FAA received comments both in support of and objecting to the proposed new runways with respect to the effect on recreational areas, wildlife refuges, the historic character of the river, and the natural beauty of the river.

Under the Department of Transportation Act both the Department of Transportation and the Department of Interior must give consideration to the effects of proposed airport construction on public parks, recreational areas, historic sites and wildlife refuges prior to granting of any federal funds for assistance on new airport construction.

Consideration of these factors is not a part of this determination which is concerned with the safe and efficient use of airspace.

RUNWAY 2/20

Some persons commenting on this proposal referred to the current project for extension of runway 2/20. On February 16, 1966, the FAA in a letter "To All Concerned" invited public comment on the proposal to extend runway 2/20 in a southwesterly direction. In addition to the normal distribution of this notice to approximately 125 organizations and persons on our regular mailing list, copies were mailed to Portland and Vancouver newspapers, city officials and airport managements. No objections were received and that proposal was found acceptable from an airspace use standpoint on September 19, 1967. Extension of runway 2/20 is not a part of the proposal now under consideration and is not being evaluated in this study since it was reviewed previously.

DETERMINATION

Therefore, pursuant to the authority delegated to me, I determine that there is no objection by the Federal Aviation Administration from the standpoint of safe and efficient use of airspace to the construction of two new parallel runways, 9R/27L and 9L/27R, at the Portland International Airport as proposed by the Port of Portland.

This determination is effective February 14, 1969, and expires on December 31, 1971, unless construction of the new runways has started, or the determination is otherwise extended.

In order to permit the optimum instrument approach minimums and realize the full potential of these new runways, it will be necessary to relocate or lower the KGW radio antennas so they do not exceed the obstruction standards in Federal Aviation Regulations, Part 77. Commitments have been received from the KGW Radio Station and the Port of Portland to accomplish this.

FRED S. MCKNIGHT,
Chief, Air Traffic Branch, SEA-500, Oregon and Washington.

Issued in Seattle, Washington, on February 14, 1969.

Mr. HATFIELD. Mr. President, next, I wish to comment on any possible adverse effects on recreation opportunities and on wildlife management.

The Oregon Game Commission, which, as my colleague from Washington knows, is among the most respected in the Nation, naturally was worried about any adverse environmental impact caused by expansion of the airport. The game commission not only agreed to the purchase of its lands by the port, but said in a letter to the port that the money received, $900,000, would be used to purchase additional lands and "the program to be carried out by the game commission under this contract will result in an orderly program for the acquisition of exchange properties of equal or superior useful value to carry out the statutory objectives and purposes of the game commission."

The areas purchased by the port were threatened by an encroaching urban population. This action will allow the Game Commission to develop an even better program elsewhere.

The recreation potential of this section of the Columbia River will be increased by the airport expansion and not decreased. The water area of the river will actually be increased by 97 acres. An additional 14,000 feet of beach accessible by auto will be provided and a new 22-acre area for park and picnic areas will be available. Also, additional boat anchorages and boat ramps will be built, and a protected boat basin will allow for more than 3,000 boat moorage slips.

I ask unanimous consent that a comparison of the recreation areas be printed at this point in the RECORD.

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

COMPARISON OF RECREATIONAL AREAS

Item	Existing	Proposed	Change
1. Lineal feet of waterfront	131,000	119,000	12,000 less.
2. Lineal feet of developed beach accessible by auto.	25,000	39,000	14,000 more.
3. Number of moorage slips	789	3,370	2,581 more.
4. Boat ramps	5 lanes	11 lanes	6 more.
5. Park and picnic areas	None	22 acres	22 more
6. Miles of scen c drive	5.7 miles	6.4 miles	0.7 more.
7. Boat anchorage (water area)	45 acres	80 acres	35 more.
8. Swimming beaches	None	3,000 l neal feet	3,000 more.
9. Acres of water change	730 acres	827 acres	97 more.

Mr. HATFIELD. Mr. President, I would like to direct a few additional remarks to clarify language in the Appropriations Committee report.

The report says on page 12:

Present architectural plans call for one runway to be built into the Columbia River, thus changing the natural flow of the Columbia River.

Unfortunately, this gives a slightly foggy picture. I want to point out that nothing in these plans envisions a runway jutting out at right angles into the river and nearly blocking the flow of water. We are not closing off the channel—we are only shifting it slightly. The actual water surface shows a slight increase. The slight alteration of the channel, it should be noted, is along a basic straight line. As I pointed out earlier, studies show the effect of this will be to help the channel—in combating erosion, in slowing sedimentation, and in not increasing any potential flooding damage. I point this out because someone might read "changing the natural flow" and automatically think "harm the natural flow." I believe the evidence shows that this is not the case.

The next paragraph in the committee report continues the committee's expressed concern:

The committee is concerned that federally supported airport construction projects not degrade the environment or threaten natural resources such as the Columbia River. It is particularly important that the new Council on Environmental Quality review the various agency and Department decisions on projects that will have a serious impact on the Nation's environment.

I cannot believe that the committee will try to refer all airport expansion across the country to the Council on Environmental Quality. There is the presumption that any alteration of any airport would have some impact on the environment. This is not my interpretation of the role of the Council on Environmental Quality, nor do I believe it to be that of Russell Train, its Chairman. Let me quote from the statement of Mr. Train before the Interior Committee when he was nominated as Chairman of the Council on Environmental Quality:

While the Council necessarily will direct attention to current issues of national significance, I believe we must avoid becoming a sort of environmental fire brigade rushing from one brush fire to another. The temptation will be great on the part of committees of the Congress, Federal agencies, and perhaps the public at large to refer controversial environmental issues—often local in nature—to the Council for review and recommendation. The fact is that the Council is not equipped for such a role. It must be carefully selective in its choice of issues and, indeed, must exercise strict self-discipline in this matter because the temptation to respond will be great. It is my belief that the Council should deal with local issues only when they possess national significance. . . .

This is not to say that this Council has no role to play. As a cosponsor of the bill to create the Council, I am aware that it does have a role to play in the development of our airports. This, however, is not one of those times, in my opinion.

The last paragraph of the report dealing with the Portland Airport says:

The committee is also concerned that local officials search out airport locations that will have the least possible environmental impact. Hopefully, this action will demonstrate the concern of Congress regarding the location and impact of airport construction.

I want to remind my colleagues of the fact that this was done. The Port of Portland began with a list of 25 potential sites. This was narrowed to two possibilities: expansion of the present site, or relocation at a site between Portland and Salem. This alternate site, at St. Paul, was studied in detail, and environmental concerns were paramount. As one example, I would note that one study detailed the problems inherent in the sewage system. The report notes about the St. Paul site:

St. Paul Site: Woodburn is the closest community that maintains a sewage treatment plant. However, the small size of its plant and the long distance of the service from the airport indicate a separate airport system would be less expensive. Indications are that the State would require secondary treatment of the effluent before dumping into the Willamette River.

My understanding is that the State today would require even stricter water quality standards than was indicated in this 1968 report. The fewer sewage problems at the Portland International Airport are shown by the report's comments—

PIA: It is expected that in the development of the first-stage expansion sewer treatment would be supplied either by the County in a service district or by a hook-up to the City of Portland system.

Also, I do not see how this one action "will demonstrate the concern of the Congress regarding the location and impact of airport construction."

Mr. President, I now wish to call attention to the study undertaken by the Department of Transportation Secretary, John Volpe. As my colleague from Washington is aware, he was under pressure from both of us regarding his position on this issue and studied the matter carefully.

When the Secretary announced approval of this project on July 11, 1969, he addressed the major portion of his remarks to the environmental question.

Let me quote from portions of his letter:

Volpe said he was aware of the "deep concern over increased noise exposure" over the north shore of the river. "Despite that drawback," he continued, "I am convinced that every feasible action has been taken to insure that the airport will have a minimal impact on the area's overall environment.

I wish to interject at this point that Secretary Volpe was talking about the nonresidential area along the north shore; he was not talking about the residential area of Vancouver, Wash., over which the patterns are now established.

I continue to read from the letter:

Beyond the single noise drawback, which would be a slight increase of 3 or 4 perceived noise decibels, Volpe said "the project would actually improve the area's collective environment by reducing noise levels over more-densely populated areas, assuring a more stable river channel and by substantially increasing recreational facilities.

Then, he acknowledges the studies of the St. Paul site when he stated:

The public benefits gained by expanding the existing facility far outweight the advantages of relocating to the St. Paul site, 32 miles from downtown Portland.

The press statement from the Department of Transportation noted:

The Secretary's decision followed a detailed evaluation of staff studies prepared

by the Department of the Interior, the Federal Aviation Administration and the U.S. Army Corps of Engineers on the expansion and modernization plans for the airports.

I call attention to the Secretary's study of the environmental impact on the Columbia River itself. He stated:

I found that a detailed study had been made of the resulting changes to the River's hydrology. The study was accomplished by a competent concern whose findings indicate that the contemplated relocation is not only sound and practical but also should result in a more stable channel, increased scour protection, better flood passing ability, and improved sediment transport capacity.

Lastly, the Secretary commented on the noise effect of the airport expansion. He said:

Moreover, that study has been independently reviewed on behalf of the City of Vancouver with the report's findings being totally verified. In addition, I am advised that the Corps of Engineers has completed its study of the matter and has arrived at the same general conclusions. My review also determined that there is general agreement that the project will improve existing recreation facilities by substantially increasing beach, park, and picnic areas, boat anchorages, public boat ramp facilities, and moorage slips.

Mr. President, I ask unanimous consent that the press release of the Department of Transportation Office of the Secretary appear at this point in the RECORD.

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

DEPARTMENT OF TRANSPORTATION NEWS, JULY 11, 1969

Secretary of Transportation John A. Volpe today approved the expansion of Portland International Airport, partially on fill in the Columbia River, "as the very best solution to the long range air transportation needs of the Portland, Oregon-Vancouver, Washington area."

Volpe said he was aware of the "deep concern over increased noise exposure" over the north shore of the river. "Despite that drawback," he continued, "I am convinced that every feasible action has been taken to insure that the airport will have a minimal impact on the area's overall environment."

Beyond the single noise drawback, which would be a slight increase of 3 or 4 perceived noise decibles, Volpe said "the project would actually improve the area's collective environment by reducing noise levels over more-densely populated areas, assuring a more stable river channel and by substantially increasing recreational facilities."

Volpe said that "the public benefits gained by expanding the existing facility far outweigh the advantages of relocating to the St. Paul site," 32 miles from downtown Portland.

The Secretary's decision followed a detailed evaluation of staff studies prepared by the Department of the Interior, the Federal Aviation Administration and the U.S. Army Corps of Engineers on the expansion and modernization plans for the airport.

Volpe said: "I found that a detailed study had been made of the resulting changes to the River's hydrology. The study was accomplished by a competent concern whose findings indicate that the contemplated relocation is not only sound and practical but also should result in a more stable channel, increased scour protection, better flood passing ability, and improved sediment transport capacity.

"Moreover, that study has been independently reviewed on behalf of the City of Vancouver with the report's findings being totally verified. In addition, I am advised that the corps of Engineers has completed its study of the matter and has arrived at the same general conclusions. My review also determined that there is general agreement that the project will improve existing recreation facilities by substantially increasing beach, park, and picnic areas, boat anchorages, public boat ramp facilities, and moorage slips."

Mr. HATFIELD. Lastly, I want to repeat that Russell Train already approved this when he was Under Secretary of the Interior. In addition, I want to repeat the comments of Mr. Train when he appeared before the Interior Committee during his confirmation hearings as Chairman of the Council on Environmental Quality. I ask unanimous consent that Mr. Train's full statement before the Interior Committee appear at the conclusion of my remarks.

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

(See exhibit 1.)

Mr. HATFIELD. In conclusion, Mr. President, I wish to summarize the points I have raised this morning. First, this project has been studied and restudied, examined and reexamined, reviewed and approved. This is probably the most studied airport project in the country. Federal agencies, State agencies, local agencies, and citizens groups all have examined this proposal. The areas of environmental concern to my colleagues also were a concern to me and to the many others who have assisted in this project.

The words "environment" and "ecology" are not new code words to Oregonians. During my terms as Governor, the expression "payrolls and playgrounds" described our State's growth and development. Protecting Oregon's livability always has been an important theme in our State development. We subjected these plans to close scrutiny to see that every environmental impact of this expansion was explained and studied. We tried to eliminate all environmental harm we could, and minimize the rest.

This airport plan embodies an economically sound expansion operation coupled with a deep concern for the protection of our environment.

I ask that the record be examined: any damage to the Columbia River caused by the dredge and fill operation was studied by private firms, by the Department of the Interior, and by the Corps of Engineers. The noise pollution problem was studied in detail by the Federal Aviation Administration. It showed a decrease—not an increase—as a result of this plan. Recreation and wildlife plans would be aided—not hindered—by this expansion.

It is for these compelling reasons that I shall later move to strike section 309 from the bill. I urge my good friend and colleague to reconsider the earlier decision and allow this section of the bill to be stricken.

Mr. President, I ask unanimous consent that an excellent article on the effects of any delay on expansion of the Portland International Airport, written by, a respected writer, Mr. Leverett Richards of the Oregonian of December 2, 1970, appear at this point in the RECORD.

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

ENGINEERS STUDY EFFECT OF RUNWAY EXPANSION DELAY

(The U.S. Senate will vote this week on a rider proposed by Sen. Warren G. Magnuson, D-Wash., which would block all federal funds for expansion of runways at Portland International Airport "until appropriate studies have been made to identify an environmentally acceptable site." Mr. Richards discussed the effects of this restriction with Port of Portland engineers, and these are their answers.)

(By Leverett Richards)

What will be the fate of Portland's International Airport if Sen. Magnuson's rider is passed by Congress blocking construction of the new 10,000-foot runway on the south shore of the Columbia River?

Portland's chances of becoming a true international air terminal will be doomed, at least for the next ten years. The port will be forced to continue operating on its existing runways with increased delays in air service. Both Vancouver and Parkrose residents will be subjected to increased quantity of noise, if not an actual increase in decibels, due to larger number of planes using existing runways.

The port will be forced to spend $50 million to $55 million between 1971 and 1981 on temporary measures to cope with traffic congestion on the airport. And jetliners will still be unable to take off for overseas points as Hawaii, London or Tokyo with full passenger and cargo loads.

Then what?

If the Port's expansion plans are still blocked in the early 1980s, Portland would have to build a new airport elsewhere at a cost of $180 million to $200 million.

NOISE LEVEL REDUCED

If the port is permitted to proceed with its present expansion plans the noise level will be substantially reduced on both sides of the river. The new airport could handle up to 32 million passengers a year in both domestic and international traffic—adequate to meet the area's needs through the year 2000.

Why not extend the existing runways on the present site, as proposed by Sen. Magnuson and other opponents of the fill adjoining the south shore of the Columbia?

The north runway cannot be extended either east or west without moving the levees. To extend it to 10,000 feet (which is required for international flights) the levee at the east end of the runway would have to be pushed northward about 1,350 feet, blocking the south channel.

The south runway (10R–28L) could be extended to 11,000 feet on its present alignment. But federal regulations require 5,000 feet of separation between parallel runways in order to permit simultaneous use of both runways under instrument conditions. Portland International has only 3,000 feet separation.

MOVE THWARTED

Why not move the whole airport further south on the present site, as demanded by Sen. Magnuson and some Vancouver residents?

Because all 430 acres of land on the south side of the airport is under lease to the Air Force until the year 2004.

Why not move the Air Force to Salem or Corvallis?

That was one of the first proposals Portland representatives discussed with the Pentagon. The Department of Defense refused to consider moving out of the Port-

land area, since that is where reservists and guardsmen live.

Why not move the Air Force facilities to Aurora or Hillsboro?

To do so would cost $60 million or $70 million for construction of a 9,000-foot runway with 1,000 feet of overrun at each end, plus the other facilities required.

COSTS GREAT

To move both existing runways at Portland International 2,000 feet south would eliminate the existing air terminal building, which cost about $20 million. Construction of a new runway 2,000 feet farther south in a slough area would cost about $6 million more than under the Port's expansion plan.

Such a move to the south would put the south runway in Northeast Portland's lap and exceed the allowable limits of noise over Parkrose. Federal agencies would never approve such a plan.

Why not build a whole new airport at a new location?

NEW AIRPORT EXPENSIVE

This was the first choice for a solution. But studies showed it would cost at least $65 million more today to build a new airport than to provide the same facilities on the present site.

It would cost the public another $7 million a year in added transportation costs to drive the 32 miles to the St. Paul site. Studies showed that 78 per cent of passenger and cargo originated in the Portland area, 22 per cent in downtown Portland.

Federal regulations would require at least 12,000 acres for a new international airport. (The new Dallas-Fort Worth Airport will cover 20,000 acres.) The only place Port of Portland could find this much level land would be in the Willamette Valley.

The port would face the same fight with environmentalists and other interests if it tried to take 12,000 of the state's most fertile agricultural land out of production for an airport. Construction would take 5 to 10 years, depending upon the legal and political delays involved.

There is a serious question whether funds could be obtained. The airlines, who hold the purse strings, flatly refused to consider moving out of Portland when the proposal was first discussed.

The original plan as to finance the $65 million PIA expansion plan almost entirely by revenue bonds to be paid off by airline fees. Delays have sent the estimated costs of the expansion plan soaring to $115 million or more. Now federal funds to pay 15 or 20 per cent of the total cost have become vitally important.

What are the port's present plans?

The Port Commission is proceeding with the expansion plan adopted two years ago, but modifying priorities as required by circumstances.

The port will have to spend another $7 million to $9 million to provide more space in the terminal building to handle the increasing traffic. The airport sometimes has waiting lines at the restaurant, bar and gift shops during rush hours. The airport will have to provide more parking space for automobiles. These new facilities will have to fit into the new terminal building under the expansion plan.

The expansion plan seems to be the only feasible solution to the growing needs of the area from an economic and environmental standpoint.

The 10,000-foot new runway to be built on a 644-acre fill adjoining the present levee and extending to the tip of Government Island is the key to the whole expansion plan.

The new south channel will be built within a few hundred feet of the channel that cut Government Island in two when Lewis and Clark first sighted it in 1805. The south channel, now unusable most of the year, will be opened to small boat traffic the year round.

Studies of the river by Bauer Engineering Co. showed that the new channel would improve the flow of the river, eliminating existing areas of shoaling and erosion.

The Corps of Engineers permit authorizing the port to dig the new channel makes the port liable for any damage that might result. The port was required to make a thorough survey of the river and its banks for eight miles. If any damage is detected after the channel is cut and the new runway constructed the permit provides that the port is liable.

MORE STUDY NEEDLESS

The Corps of Engineers reviewed the findings of the engineering study and determined that no further hydraulic studies were required. The permit requires landscaping of the fill and the new Columbia Bay boating area.

Studies by Bolt, Beranek and Newman, acoustical consultants to the Federal Aviation Administration, and by Towne and Associates of Seattle, showed that swinging the north runway 7½ degrees to the southwest would result in a substantial reduction of noise level for Vancouver's 20,000 residents, except for a slight increase affecting about 260 residents of the north shore east of Vancouver. Even here the noise level will be below the allowable 90 decibels.

Only by this new alignment, which puts the takeoff path of airliners 1,200 feet farther south of Vancouver's Main street—can the noise level be reduced for Vancouver residents.

Portland International Airport will continue to operate as an airport even if a new airport is built elsewhere after the year 2000, according to present plans.

EXHIBIT 1

REMARKS OF HONORABLE RUSSELL E. TRAIN

Mr. Chairman, Senator Allott, it is a privilege to appear before this distinguished committee.

While the National Environmental Policy Act of 1969 was initiated by this committee, a number of other committees of the Congress, both in the Senate and the House, have played significant roles in the development of this legislation as well as of related aspects of environmental policy. Thus, it is particularly gratifying that these other committees are represented here today.

Indeed, I can recall no other legislation which has been the subject of such broad sponsorship and interest. Nor can I recall any comparable legislation which has attracted such bipartisan support.

In signing into law on January first the legislation establishing the Council on Environmental Quality, President Nixon noted that this was his first official act of the decade of the seventies, thus giving dramatic emphasis to the commitment of his Administration to protecting and restoring the American environment. The President has assured the new Council of his full support and backing.

My two colleagues on the Council, Mr. Robert Cahn and Dr. Gordon MacDonald, are men of great distinction in their fields, who possess broad experience in environmental matters. All three of us have known and worked with each other. I am confident that we will constitute a close-knit, cooperative team.

The concept of a council of environmental advisors—occupying a position somewhat similar to that of the Council of Economic Advisors—is one that I personally proposed and supported as early as 1965. On at least one subsequent occasion I testified before this very committee in favor of legislation establishing such a Council.

The Congress has given the Council a very broad mandate, and I understand that the President will promulgate shortly an executive order designed to spell out in greater detail its functions and authority in carrying out that mandate.

With your permission, I will summarize the more important responsibilities assigned to the Council and then comment briefly upon its role.

First, the Council is directed to study and report the condition of the Nation's environment. This responsibility will require a continuing process of monitoring, evaluation, and prediction. The results of this process will become a part of the President's annual Environmental Quality Report. The identification and measurement of environmental trends would seem to require the establishment of data baselines in atmospheric, terrestrial, aquatic, and marine environments, among others. Much of this fundamental data is not presently available at all. It will be necessary to develop systems, some of which will be international in nature as in the case of atmospheric data. Wherever possible, agencies with direct program responsibilities will be encouraged to undertake the necessary tasks. Finally, assuming that effective systems are established for procuring and measuring needed information, the Council will have the ultimate responsibility of synthesizing and interpreting this data so as to be useful in policy- and decision-making.

Second, the Council will be the President's primary instrument in the development of new environmental programs and policies. For this purpose, the Council will monitor and evaluate all Federal environmental programs. Perhaps even more important, the Council will explore new problems for which present programs are either nonexistent or inadequate. In this connection, the President has spoken of the need to establish an environmental early warning system. We must undertake advance planning to meet critical problems which may still lie below the horizon of public awareness.

Third, the Council will promote coordination of environmental programs scattered throughout the executive departments and agencies. In carrying out this coordinating function, the Council will keep existing organizational arrangements under continuous review and recommend organizational changes as appropriate.

Fourth, the Council will seek to insure that all the activities of the Federal Government take environmental considerations into account. Many government activities—highway and airport development, dam construction, and public works generally, among others—can have important environmental effects. The President has directed the Council to review all such activities and to issue guidelines to ensure that they will be conducted in a way which does not degrade the environment.

Fifth, the Council will assist the President in preparing an annual Environmental Quality Report. The first report will be due this July first. The report will identify major environmental problems, report on environmental conditions and trends, and make policy recommendations. It could help stimulate public understanding of environmental problems and guide government decision-making. Plainly, in the brief space of time available to us before the first report is due, a fully comprehensive report will not be possible.

The responsibilities imposed on the Council by statute and by the mandate given it by the President are complex, far-reaching, and of great magnitude.

We are embarked on nothing less than a new experiment in government—an experiment to determine whether we are wise enough to direct our affairs in a way which recognizes the essential inter-dependence of man and his environment.

Public anxiety over environmental deterioration has reached a high level—and rightly so. Yet the problems with which we

must deal have been years in the making. They will not be cured overnight. It is important that the public, as well as government agencies, understand that the road ahead will be long and hard. Even were we to eliminate all forms of environmental pollution, we would still not have guaranteed a high quality environment. Environmental quality is a far more complex, more subtle objective. It involves the development of new attitudes and new values. Thus, while we must make the investments and achieve the technological breakthroughs necessary to clean up our environment, we must at the same time develop a new perception of man's relation to nature, learn to control our own numbers, develop effective land-use policies, and find new measures of public and private success which emphasize quality rather than mere quantity.

However, I assure you, Mr. Chairman, that while these broader concerns are of great importance, the new Council does not conceive of its role as simply a long-range, academic exercise. Many environmental problems have already been studied to death. In many areas, firm decisions should and can be made now. A case in point is the order issued by the President yesterday directing clean-up of air and water pollution by Federal agencies in their own activities. The Council will keep progress by the agencies in this area under active review. Overall, we intend to recommend positive, action programs. In this connection, it is our desire to place emphasis not only on preventing and stopping environmental deterioration but also on positive efforts to repair, recreate and enhance wherever possible.

While the Council necessarily will direct attention to current issues of national significance, I believe we must avoid becoming a sort of environmental fire brigade rushing from one brush fire to another. The temptation will be great on the part of committees of the Congress, Federal agencies, and perhaps the public at large to refer controversial environmental issues—often local in nature—to the Council for review and recommendation. The fact is that the Council is not equipped for such a role. It must be carefully selective in its choice of issues, and, indeed, must exercise strict self-discipline in this matter because the temptation to respond will be great. It is my belief that the Council should deal with local issues only when they possess national significance. Mr. Chairman, we would particularly welcome the guidance of this committee in our approach to this aspect of our task.

The Council is conceived by the Congress and intended by the President to be the focal point for environmental policy development in the executive branch. At the same time, it is important to understand that neither the Council nor any other single mechanism should be expected to produce "instant" answers to our environmental problems. These are too complex, too deeply imbedded in the entire fabric of our society, to lend themselves to simplistic solutions. The task ahead must engage the cooperation and the dedicated effort of all elements of the Federal Government, of both parties, of state and local governments, of industry, of private organizations and, most important of all, of individual citizens and their families, young and old, all across the Nation.

In his state of the Union Message, President Nixon declared the goal of the seventies is to be "a new quality of life in America."

We are grateful to be given a part in that great task.

Mr. BIBLE. Mr. President, I have followed very carefully the fine statement made by my distinguished friend, a former Governor of the State of Oregon and now the senior Senator from that State, on this particular problem. There was no testimony on this problem before our committee at the time it heard the matter. It was a suggestion made in the subcommittee, of which the distinguished senior Senator from Washington (Mr. MAGNUSON) is a member. We followed the pattern that we had for the Everglades jetport. We thought the pattern there was the correct one. The Senator from Washington (Mr. MAGNUSON) was concerned about some problems affecting the Columbia River, which we all understand. It is in his area, as it is in the area of the Senators from Oregon.

Personally, I have no objection at all to having this item stricken. I would concur in the recommendation of the Senator from Oregon. After all, he was a distinguished Governor of that State. It is in his State. He is the senior Senator from that State. But I would like to get an expression from the senior Senator from Washington.

ANNOUNCEMENT OF POSITION ON A VOTE

Mr. BYRD of Virginia. Mr. President, the Senator from Virginia was necessarily absent from the Senate last evening when the Senate voted on the amendment offered by the distinguished Senator from Washington (Mr. MAGNUSON) to S. 4547, the sonic boom bill. Had I been present and voting, I would have voted in the affirmative, and I would like the record to so show. The voice vote on the amendment appears at page 39633 of the CONGRESSIONAL RECORD of December 2, 1970.

MESSAGE FROM THE PRESIDENT

A message in writing from the President of the United States was communicated to the Senate by Mr. Leonard, one of his secretaries.

EXECUTIVE MESSAGE REFERRED

As in executive session, the Presiding Officer (Mr. ALLEN) laid before the Senate a message from the President of the United States submitting the nomination of John A. McKesson 3d, of the District of Columbia, a Foreign Service Officer of Class one, to be Ambassador Extraordinary and Plenipotentiary to the Gabon Republic, which was referred to the Committee on Foreign Relations.

MESSAGE FROM THE HOUSE

A message from the House of Representatives, by Mr. Hackney, one of its reading clerks, announced that the House had passed a bill (H.R. 19333) to provide greater protection for customers of registered brokers and dealers and members of national securities exchanges, in which it requested the concurrence of the Senate.

The message also announced that the House had agreed to the following concurrent resolutions, in which it requested the concurrence of the Senate:

H. Con. Res. 788. Concurrent resolution authorizing the printing of additional copies of "Hearings Relating to Various Bills To Repeal the Emergency Detention Act of 1950," Ninety-first Congress, second session; and

H. Con. Res. 789. Concurrent resolution to provide for the printing of the prayers offered by the Chaplain as a House document.

ENROLLED BILL SIGNED

The message further announced that the Speaker had affixed his signature to the enrolled bill (H.R. 14213) to amend sections 5580, 5581, and 5582 of the Revised Statutes to provide for additional members of the Board of Regents of the Smithsonian Institution and to increase the number of members constituting a quorum, and it was signed by the President pro tempore (Mr. RUSSELL).

HOUSE BILL REFERRED

The bill (H.R. 19333) to provide greater protection for customers of registered brokers and dealers and members of national securities exchanges, was read twice by its title and referred to the Committee on Banking and Currency.

HOUSE CONCURRENT RESOLUTIONS REFERRED

The following concurrent resolutions were referred to the Committee on Rules and Administration:

H. Con. Res. 788. Concurrent resolution authorizing the printing of additional copies of "Hearings Relating to Various Bills To Repeal the Emergency Detention Act of 1950," Ninety-first Congress, second session; and

H. Con. Res. 789. Concurrent resolution to provide for the printing of the prayers offered by the Chaplain as a House document.

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS, 1971

The Senate continued with the consideration of the bill (H.R. 17755) making appropriations for the Department of Transportation and related agencies for the fiscal year ending June 30, 1971, and for other purposes.

UNANIMOUS-CONSENT AGREEMENT

Mr. BIBLE. I would like, if I might, because all of the Senators involved in the question are present in the Chamber at this time, to propose a unanimous-consent agreement that the vote on the pending amendment come not later than the hour of 3:30 p.m. That would include a vote on the amendment or perfecting amendments to the pending amendment, which is the amendment of the Senator from Wisconsin (Mr. PROXMIRE).

I have discussed this request with the Senator from Wisconsin, who is standing in front of me. I have discussed it with the Senators from Washington (Mr. MAGNUSON and Mr. JACKSON). I have discussed it with the majority leader. I have discussed it with the Senator from Colorado (Mr. ALLOTT), who is on the Transportation Subcommittee on the Republican side.

I propose that as a unanimous-consent request.

The PRESIDING OFFICER. Is there objection? The Chair hears none, and it is so ordered.

Mr. BIBLE. I ask unanimous consent that the intervening time—and that is just about 3 hours from now—be equally divided between the sponsor of the amendment, the Senator from Wisconsin (Mr. PROXMIRE), and myself as the manager of the bill. That will be about 1 hour and 30 minutes to each of us.

The PRESIDING OFFICER. Is there objection? Without objection, it is so ordered.

Mr. BIBLE. I now yield 3 minutes to the Senator from Washington (Mr. MAGNUSON).

Mr. MAGNUSON. Mr. President, let me say to my colleagues from Oregon that we will take this matter up after action on the Proxmire amendment.

I want to suggest, first of all, as the Senators from Oregon well know and people in Portland well know, I have always thought there was a better place to build a runway than in the river. I still believe that. There may be many reasons for it. I do not want any implication—and I said this when I came out of the committee—that Portland does not need an expanded airport. It does. I even tried to see if we could not get the Air Force to declare surplus a nearby airfield. I am very jealous of the Columbia River, as are the Senators from Oregon. It is the fastest, cleanest free-flowing river in the world. I know the airport is handy there. I have used it many times. We have had some argument with the people in Vancouver. Meetings have been held, and I think some of the problems are now resolved.

We have recently created a Council on Environmental Quality, which is sort of an advisory committee over and above the Army Corps of Engineers and the Interior Department. The Army Corps of Engineers would naturally support this proposal, because their primary function is to see to it that nothing interferes with navigation. This proposal does not interfere with navigation on the river.

As a matter of fact, one of its members took a look at this matter about 3 months ago. The Department of Transportation, the Department of the Interior, and the Army all agree on this matter.

The only reason why it is in the bill as legislation is that the Everglades matter got in the bill as legislation.

As soon as we are through acting on the Proxmire amendment, I shall make a further statement. I hoped that we might, in the report on the bill, suggest that the Council on Environmental Quality take a look at it. It may approve it. I am sure that the other three departments will approve it. We can take it up after the pending amendment is disposed of.

Mr. PACKWOOD. Mr. President, will the Senator yield to me briefly?

Mr. MAGNUSON. I yield.

Mr. PACKWOOD. I wonder if I might alleviate some of the fears the Senator expressed earlier.

The State of Oregon, over 18 months, studied 25 possible sites for the airport and whether it should remain at this one or go to another site. The choice finally boiled down to this one or another that would have taken 15,000 acres of prime farm land, and over which the flight and noise patterns over urban areas would have been substantially worse than in this area.

The Oregon Game Commission, the Fish Commission, our Environmental Quality Commission have all supported it as being the most feasible site, which also permits marine development in this area.

Mr. MAGNUSON. I am certainly glad about the prospect of the marine development area. One can go to the island on any weekend and find thousands of people who use that area for recreation. I was hoping it would not be bothered by a runway. There is a beautiful beach there, the river actually makes a turn at that point. There was not enough consideration of this island when the runway was initially constructed.

The PRESIDING OFFICER (Mr. GRAVEL). The time of the Senator has expired.

Mr. MAGNUSON. As I understand it, we will take it up when we are through with the Proxmire amendment.

Mr. BIBLE. Mr. President, I yield myself 1 minute.

Mr. MAGNUSON. Let me add one word. Normally this kind of language should be in the report.

Mr BIBLE. I yield myself 1 minute. This matter, as I said earlier, was not heard extensively in the committee. I believe the request of the Senator from Oregon (Mr. PACKWOOD), joined in by his colleague, is a reasonable one; and as far as I am concerned, if a motion to strike is presented at the end of the consideration of the pending amendment on the SST, I for one will agree that that part can be stricken out of the bill. I give both Senators from Oregon my assurance on that point.

Mr. MAGNUSON. I shall make the motion when we are through with this amendment.

Mr. BIBLE. I understand; and when it comes up, I shall agree to it.

Mr. MAGNUSON. I still would like to have some language in the report.

Mr. BIBLE. Well, there will be no further report.

Mr. MAGNUSON. We can make it a part of the conference report.

Mr. BIBLE. It can be included in the conference report, and it can be made a part of the RECORD after we finish with the pending business, which is the big issue, and on which we have a time limit.

The PRESIDING OFFICER. Who yields time?

Mr. BIBLE. Are there requests for time?

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

Mr. BIBLE. Mr. President, I yield 5 minutes to the Senator from Washington.

THE ENVIRONMENT AND THE CIVIL SUPERSONIC TRANSPORT PROGRAM

Mr. JACKSON. Mr. President, I am greatly concerned that some of our Nation's leading newspapers and magazines have recently contained statements concerning the civil supersonic transport prototype program which are based on misinformation and unsubstantiated charges. Many of these statements infer that commercial supersonic flight is going to do such things as change our climate and bring on a new ice age. I have seen absolutely no evidence that SST operations will adversely affect our environment. If I had reason to believe that this were the case I would not be here today speaking in favor of the program.

Historically, any new challenging advancement in transportation technology has been accompanied by those who paint gloomy pictures about the unknown. In the early days of the automobile, the doubters strongly advised "buy a horse." The change in propulsion of ships from sail to steam was tagged in the early days as Fulton's folly. With the introduction of commercial jet aircraft, there were dire predictions concerning the safety of travel at 600 miles per hour in an airplane with no propellers. Again, the timid were proven wrong and a tremendous advancement was made in transportation technology.

THE FACTS

What are the facts?

It is an undisputed fact that the day has long passed when mankind can ignore the environmental impact of the unanticipated side effects of new technology. The quality of our environment has been ignored too often in developing technological guidelines, design criteria, and operating rules. Fortunately, in the development of the supersonic transport, the environmental aspects of supersonic flight have received major attention and millions of dollars of research effort over the past 12 years.

SONIC BOOM

The U.S. supersonic transport development program has assembled the world's most complete data concerning the effect of sonic boom on man, on structures, and on the quality of life. On the basis of this research and data came the decision that the sonic boom predicted for the first generation of supersonic aircraft, either United States or foreign, would not be acceptable to the American public. The U.S. supersonic transport design is consequently based on this assumption and the aircraft's design was optimized for the long-range overwater routes of the free world.

President Nixon has stated as a matter of national policy commercial supersonic transport will be prohibited from supersonic flight for all land areas of the United States. The Federal Aviation Administration has issued a notice of proposed rulemaking which will prohibit commercial supersonic flight over the United States and its territories at any speed that would produce a sonic boom that would reach the ground. The research and data on which this national policy and this notice of rulemaking are based were developed through the efforts of the U.S. supersonic transport development program.

Senator MAGNUSON and I introduced legislation which would make the FAA's proposed rule law.

In addition, this measure would require a report from the Secretary of Transportation to the Congress upon the conclu-

sion of the prototype phase and before any decision is made on commercial production. This report would deal with all aspects of the project—environmental, economic, and technological. The Commerce Committee ordered the measure reported to the floor and yesterday it was unanimously adopted by the Senate.

WEATHER AND CLIMATE

Since the initiation of the supersonic transport development effort, the Department of Transportation has turned primarily to the Environmental Science Services Administration—ESSA, recently reorganized to National Oceanic and Atmospheric Administration, NOAA—for advice and guidance as concerns supersonic flight and its relationship to climate and weather. ESSA's scientists as well as others from whom they sought advice, reported no significant adverse environmental effects. However, during recent months with more national emphasis on the environment, the scientific community has asked a number of new questions for which concise and certain answers are not presently available.

Early in 1970 the Department of Transportation recognized that in some cases more data is necessary for increased confidence and certainly that large-scale SST operations will not affect the environment. As a result they assembled an environmental research program plan to provide more precise answers to the environmental aspect of supersonic flight. At the request of the supersonic transport program director, ESSA submitted a proposed research progam designed to make the necessary information available before the decision to go into production is made. The SST office further augmented this research plan by identifying noise research underway directly applicable to the SST. This program plan represents a cooperative effort of several Government agencies and includes research that was firmly planned or already ongoing within the Government.

In some instances planned or ongoing programs were modified to be more applicable to SST requirements. New research related to cosmic radiation was also identified. This program plan was reviewed and approved by the President's Council on Environmental Quality. The MIT-sponsored Study of Critical Environmental Problems which was recently conducted recommends the same kind of research as described by the Department earlier this year.

SCIENTIFIC ADVICE AND COUNSEL

Two independent advisory committees have been established by the Department of Transportation to assure the availability of the best scientific advice and counsel in the country on noise and environmental research. The advisory committee will also counsel the Department on the significance of the findings of these major research efforts. Dr. Myron Tribus, Assistant Secretary of Commerce for Science and Technology, has provided Congress with the answers to four important questions related to the weather modification aspects of supersonic flight.

Question No. 1: Will the SST affect the ultraviolet radiation at the Earth's surface by depleting the ozone in the stratosphere?

Answer: "There may occur a barely detectable change in UV at the Earth's surface but it will be small compared to the daily variations or the variation found in going, say from Washington to Albuquerque. The basis for this reply is the report from the MIT study group and computations made by ESSA staff and its consultants."

Question No. 2: Will the "greenhouse" effect, due to gaseous exhaust products, affect the temperature at the Earth's surface?

Answer: "All calculations that I have seen indicate that the temperature changes due to this effect would be hardly detectable. I share the concern of all environmentalists at the increase in CO_2 in the lower atmosphere but the thermal effects at the Earth's surface of SST's will be hard to detect in the presence of the other manmade sources."

Question No. 3: Will the SST cause a layer of dust in the stratosphere due to engine exhaust products, and would such dust affect the temperature at the Earth's surface?

Answer: "As with other engines, the SST's engines will introduce particles into the stratosphere, whose effect on the Earth's surface temperature will, in my opinion, be small. There have been differences of opinion on this question which I trace to different assumptions about the fuel to be used as well as fuel consumption rates. There still exist some uncertainties about the magnitude of the effects but it is my view that technology can reduce the particulates to a point where they will be completely unimportant, as for example by the reduction of sulfur content in fuels."

Question No. 4: Will the SST produce clouds in the stratosphere?

Answer: "The best evidence is that the stratosphere is so dry that in most of the world this is unlikely. The MIT report, for example, reached this conclusion. However, in the polar regions, where the temperature is very cold it is possible that clouds will be produced. The effects of such clouds on the surface temperature and global weather conditions are not now known. As we have already proposed, necessary computer calculations can be made in sufficient time for the decision on SST production. I have considerable confidence in the results of such calculations for they are based on ESSA research over quite a few years."

Recently, the Massachusetts Institute of Technology—MIT—sponsored a summer Study on Critical Environmental Problems. This study group was comprised of the Nation's most eminent and highly qualified environmental scientists under the chairmanship of Dr. William W. Kellogg, director of the Laboratory of Atmospheric Sciences, National Center for Atmospheric Research. The study group explored the possibility that water vapor and carbon dioxide produced by large-scale commercial operations of the SST might affect the radiation balance and thereby affect world climate.

They concluded that the carbon dioxide produced by SST's creates no special environmental problem and that a climatic effect was not likely. Their additional calculations also removed concern that water vapor might affect climate by accelerating the destruction of ozone. They concluded that the effects on ozone would be small and well within the natural day-to-day variability of ozone concentrations. Changes in ozone at SST flight altitudes will not result in an ultraviolet radiation hazard at the earth's surface.

The study group considered the cloudiness of increased water vapor in the stratosphere brought on by flight operation of the supersonic transport. The study group recommended further study to determine whether additional cloudiness might occur in the polar regions at night and during the winter months as a result of supersonic operation. Further, the group suggested the determination of the effects of such cloudiness, if any. No one knows whether this will be good or bad.

Dr. William Kellogg, in a letter to the director of the supersonic transport development program, clarified the MIT study group's position as concerns their recommendation for a limited amount of additional environmental research. In his letter dated August 24, 1970, Dr. Kellogg stated:

> This is a chance for a major new technological development to be studied before it goes into full-scale operation, and we certainly should seize the opportunity. I understand that you agree with this point of view. Nowhere have we indicated that we believe the SST development should be held up or delayed pending the results of this study.

The study group also recommended the obtaining of better estimates on the emission of combustion products under simulated flight conditions and under real flight conditions at the earliest opportunity.

COMMUNITY NOISE

Today, as one might expect, most complaints related to aircraft noise are associated with the takeoff climb or with the landing approach to the airport. In both cases, the aircraft are flying over the communities adjacent to the airport property. Contrary to current misinformation, supersonic aircraft will be quieter than today's airplanes during takeoff climb and on approach to landing and, as a matter of fact, should be able to meet the stringent noise limits recently established by rule for all new or future subsonic jet aircraft. If, however, the SST were to be put into operation today, using today's noise abatement technology, it would generate more immediate sideline noise on the airport during takeoff roll than that produced by today's jet transports. However, it is about the same level as these airplanes make in the community during landing approach to the airport. These sideline noise levels are higher than desired.

Therefore, the ongoing major SST noise reduction effort is aimed at developing techniques to provide maximum reduction of sideline noise with minimum loss of airplane performance. Planned research and devlopment programs for both the SST engine and airframe manufacturers show the practical potential of reducing this sideline noise by more than one-half or to a level that is about the same as that now experienced during takeoff roll by today's long-range jets. The production aircraft objectives applicable to after takeoff and landing approach noise are the same as recently established by FAR–36 for new subsonic aircraft and are below that now being generated by today's four-engine jets.

The bill passed by the Senate yester-

day could make these levels a matter of law. NASA, with their vast equipment and expertise, is also providing valuable assistance in this SST noise reduction effort. With 8 years to go before commercial introduction, American engineering ingenuity and proven capability has more than ample time to improve the sideline noise characteristic without adversely affecting the already attractive takeoff climb and landing noise characteristics. It can and will be done before commercial introduction.

COSMIC RADIATION

Since 1967, a group of highly qualified scientists from Government, industry, and the academic fraternity has been providing advice and guidance to the SST program as concerns cosmic radiation. This committee is under the chairmanship of Dr. Haralc Rossi. For more than 2 years specially instrumented aircraft have been flying at supersonic transport cruise altitudes to collect cosmic radiation data. These flights have been conducted in the north polar regions where radiation levels are more intense than the other areas of the world.

As a result of examination of this data plus other information obtained from the Federal Radiation Council and the International Commission on Radiation Protection, Dr. Rossi's committee reports that the radiation level for crews and passengers on the SST will be the same or less than that now experienced on today's subsonic aircraft for any flight throughout the world. This is due to the reduced exposure time of the SST crew and passengers because the SST will be traveling at about 1,800 miles an hour as compared to 600 miles an hour for today's aircraft. Major solar flares can, if necessary, be avoided through alert information provided by onboard instrumentation plus the already available elaborate radiation detection network established for our military and civil space programs. Cosmic radiation is not an SST environmental problem.

CONCLUSION

The environment has been a strong area of consideration throughout the history of the supersonic transport development effort. Many answers have obtained, many problems have been solved. In a few areas, more data is needed to obtain the degree of certainty that the administration and the Department of Transportation insist on having. All of this information will be used to determine whether or not the production of commercial supersonic transport should be initiated by the United States. One important fact must be clearly understood. As the President's Council on Environmental Quality has pointed out, the two prototype aircraft in themselves will have no significant adverse impact on the enironment. Government involvement in the supersonic transport development effort is limited to the construction of these two prototype aircraft and 100 hours of flight test after their completion. All scientists agree that these two prototype aircraft will present no environmental problems. The knowledge obtained through the construction and flight of the prototypes coupled with the data obtained from the above described ongoing environmental research will provide the basis for the decision for commercial construction of the supersonic transport by the United States.

Mr. President, the U.S. civil supersonic transport prototype program is a research and development program. It is an important and necessary program for a great many reasons, perhaps the most important of which is that it is an environmental research program. If there is any possibility of serious environmental problems resulting from commercial supersonic flight as has been alleged by some, then it is essential that this program to develop and build two prototypes be continued.

We cannot stop commercial supersonic flight. It will be a fact within a few years. The British, the French, and the Russians are years ahead of us in development and are entering commercial production. If there are environmental problems they are worldwide and cannot be ignored. Yet, should this country refuse to complete the necessary research and technological development to assure that commercial supersonic flight will be environmentally safe and sound we are walking away from the problem.

Those who wrap themselves in the unfamiliar mantle of the environmentalist to oppose this program are in fact urging that we do not use our resources to see that the facts are obtained and research is undertaken to insure that any environmental problems are identified and appropriately dealt with.

I view this course of action as unsound. I am confident that thoughtful people who are really concerned about the environment will also come to view it as unsound. The best guarantee the Congress can give to the American people and to the world that commercial supersonic flight will not result in environmental degradation is to continue to bring our great scientific and technological resources to bear on the subject by going ahead with development, construction and flight testing of the two prototypes authorized by the program.

Mr. President, a failure to go forward with this program will be deeply regretted by all concerned within 2 years.

Mr. President, I ask unanimous consent that a "fact sheet" on the program together with a Library of Congress report on the environmental aspects of the program and a summary of the report be printed at this point in the RECORD.

There being no objection, the items were ordered to be printed in the RECORD, as follows:

SUMMARY OF LIBRARY OF CONGRESS REPORT ON THE SST: THE ISSUES OF ENVIRONMENTAL COMPATABILITY

(By George N. Chatham)

The environmental issues which have been associated with supersonic flight cover three categories a) Sonic boom, b) Noise, and c) Effect on world climate.

SONIC BOOM

The recently adopted national policy and the FAA Notice of Proposed Rule Making, issued April 16, 1970 (39 FR 6189) would prohibit operation of civil aircraft over the United States at speeds which would cause a sonic boom on the ground. This rule would apply to *all* civil aircraft, domestic and foreign.

The supersonic capability of supersonic aircraft would be used only over the oceans. A sonic boom having a nominal overpressure of 2½ lbs. per square foot would be felt on the ocean's surface. This is the pressure change experienced when one rises four floors in an elevator. Fish or surface vessels in the ocean experience this same overpressure from the passage of a three foot wave.

An overpressure of this magnitude is insignificant both to surface vessels and to marine life. The sound intensity to an ocean liner is such that only those on deck would detect it. The sound would be largely lost in the background noise of the ship, the ocean and wind.

NOISE

There are three phases of flight during which jet aircraft noise is noticed, (a) approach to landing, (b) take off, and (c) departure. Noise complaints have centered on the time the aircraft flies low over the community, that is the approach and departure phases. On both of these phases the SST produces less noise than the jet transports in use today.

A comparative table as page six of the report shows that during two of the three critical phases of flight, approach to landing and climb out, the U.S. supersonic aircraft will emit about one-half the noise of the subsonic Boeing 707.

JET ENGINE NOISE COMPARISON (EPNdb)

	B-747	B-707	Concorde	Boeing SST
Approach to landing [1]	110	118.0	.....	108
Takeoff (measured 2,100 feet to the side of runway)	103	107.5	120	[2]124
Climbout [1]	111	118.0	110	108

[1] Measured 1 mile from end of runway.

[2] Figure of 124 EPNdb is based on today's noise suppression technology. Air frame and engine manufacturers as well as NASA and DOT are in their 5th year of jet engine noise research. These sources feel that when the SST engines enter service in 1978 or 1980, the figure of 124 EPNdb will be lowered to 118 EPNdb or less.

Without acoustical correction, the U.S. Supersonic transport will produce more noise than conventional supersonic during its run-up and take-off phase. Afterburners are used for take-off. This is a "first" for civil jet aircraft and introduces a new problem to jet engine acoustical engineers. Previous research on jet engine noise reduction has centered around the engine itself, and shows a substantial and continuing success.

Jet engines have been in commercial service for over 10 years. During this period they have grown in power by a factor of six. Intensive research to reduce the noise output of jet engines began about five years ago. The results to date have reduced perceived noise output to about half of the earliest levels. The perceived noise level per pound of thrust is now less than 10% of its initial value.

The noise related to the afterburner, however, originates primarily outside the engine. The sound is generated in the turbulent gases of the exhaust, much like the sound of a blow torch. Research to date has clearly shown that smoothing this flow will reduce the sound quite satisfactorily.

The one device tested thus far separated the exhaust column into a number of smaller streams. Although it reduced the noise adequately, the device also reduced the engine thrust below acceptable levels. The challenge therefore is to develop a silencer which will not unduly impair engine performance.

Although this problem has yet to be completely solved, eight years still remain before the Boeing SST enters commercial service. In view of the success of jet engine acoustical

research to date, an adequate solution to quieting an afterburner seems a reasonable expectation.

FUEL CONSUMED FOR WORK PERFORMED

The jet engine consumes less fuel per horsepower/hour than any other conventional power plant. A coal fired locomotive, for example, consumes 4 pounds of fuel per horsepower hour. An automobile consumes .9 pound; a subsonic fan jet engine .4 pound; and a supersonic jet engine .3 pound. (See table in report).

Powerplant:	*lb fuel/hp. hr.*
1. Draft horse	10
2. Coal fired locomotive	4
3. Automobile	0.9
4. Diesel-electric locomotive	0.6
5. Aircraft piston engine	0.5
6. Fan jet (subsonic aircraft)	0.4
7. Jet engine (supersonic aircraft)	0.0

Aircraft, particularly jet engined aircraft, emit the lowest quantity of pollutants for fuel used of any vehicle. Their effluents are also released in the air where they may be dispersed readily. The automobile, for example, releases a total of 262 pounds of pollutants per 1000 pounds of fuel consumed.

A piston engine aircraft emits 168 pounds. By way of contrast a supersonic jet engine emits only 6.9 pounds. (See table in report).

POUNDS POLLUTANT EMITTED PER 1,000 POUNDS FUEL CONSUMED

Vehicle	Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulfur oxides	Total (rounded)
Subsonic jet	0.1	3	0.5	1	1.0	6.5
SST	.9	3.5	.5	1	1.0	6.9
Ocean liner	(1)	10	.01	1	20.0	31.0
Piston airliner	100	50	15.00	2	1.0	168.0
Auto	200	20	40.00	1	1.0	262.0

[1] Negligible.

Similar results may be seen by comparing the pounds of pollutant emitted per 1000 seat miles for the same vehicles. The results are: automobile, 26 pounds; piston engine aircraft, 22.3 pounds; supersonic jet engine, 1.1 pound. (See table in report).

EMISSIONS PER 1,000 SEAT-MILES

Vehicle	Fuel (pounds per 1,000 miles)	Pounds of pollutants emitted per 1,000 seat-miles					
		Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulfur oxides	Total (rounded)
Subsonic jet	170	0.17	0.51	0.1	0.17	0.17	1.1
SST	193	.17	.68	.10	.19	.19	1.3
Ocean liner	660	(1)	6.6	.1	.6	13.2	20.5
Piston aircraft	133	13.3	6.6	2.0	.2	.1	22.3
Auto	100	20.0	2.0	4.0	.1	.1	26.0

[1] Negligible.

Another comparison of modes of transportation offers insight into the environmental impact of commercial supersonic aircraft. In terms of relative productivity—the number of vehicles required for an equal work—year—one supersonic transport is equal to 6.1 subsonic jets; 20.8 piston airplanes; or 1,970 automobiles.

EFFECT ON WORLD CLIMATE

The engine of the SST will exhaust water, CO_2, SO_2 carbon and unburned hydrocarbons into the stratosphere. The President's Council on Environmental Quality and other groups concerned with environmental issues have questioned whether or not the exhaust of a fleet of supersonic transports could effect changes in the stratosphere, which might in turn alter some aspect of the earth's climate.

The SST as a factor of meteorology was examined by the NAS National Research Council Committee on Atmospheric Sciences. Their report issued in 1966, predicted no adverse effects. More recently, the M.I.T. sponsored symposium, Study of Critical Environmental Problems (SCEP) reexamined the issue. Concerns for damage to the ozone layer and for the release of CO_2 were dismissed. The particulates (carbon and the conversion of SO_2 into sulphates), as well as the release of water over the polar regions during the winter season were identified as concerns. The SCEP felt that the particulates, especially on well used routes, might increase the air temperature along the path of flight. An increase in stratospheric air temperature of several degrees was noted in a region of the stratosphere suspected to contain volcanic dust from the Bali Volcano Mt. Agung. There were no detectable effects either to other strata of air or on the surface associated with these observations.

1. WATER VAPOR

As to water vapor, the SCEP noted that during the winter, the polar stratosphere has a higher relative humidity primarily due to its lower temperature. Additional water, it was felt, could result in some additional cloud cover.

The SCEP did not extend these considerations to potential effects on the surface or on climate. They recommended a research program to gather additional data from which an assessment could be made.

Their recommendations are being met in a D.O.T. environmental research program, which has also been reviewed and approved by the Presidents Council on Environmental Quality.

An examination of the issues and concerns indicates that they are, as intended, maximally conservative. For example, stratospheric flights in the polar regions conducted regularly over the past few years do not indicate that either "false" cirrus clouds or contrails are likely.

A normal fleet of 400 supersonic transports making 4 trips per day will inject 150,000 tons of water per day into the stratosphere. A single, large cumulonimbus cloud, common to the tropics, can inject as much water vapor into the stratosphere as would a fleet of SST's making 1600 flights on a given day.

The number of such injections per day is estimated to be between 2 thousand and 6 thousand. Seasonal variations and low altitude weather changes give a wide range to this daily insertion of water from natural causes. The relative humidity of the stratosphere, however, remains quite stable and very low.

There are very good reasons why meteorologists are not disturbed by the prospect of water vapor from a fleet of SST's. During 1967, three common sources of combustion in the United States poured about 1.2 billion tons of water into the air, as follows:

HYDROGEN FUEL BURNED, 10^6 TONS

Source:	
Powerplants	447
Automobiles	220
Aircraft	25
Total	692

Since each pound of fuel burned produces about 1½ pounds of water, the burning of 692 million tons of hydrocarbon fuels will produce approximately a billion tons of water. If the billion tons of water generated in a year by the sources cited could be added to the air in a single second, it would add 1 part in 100,000 to the water normal to the atmosphere. Normal fluctuations in the atmospheric water content exceed this quantity many thousandfold. If we relate the water produced by fuel consumption of the fleet of SST's to the water normal to the air, it appears as only 1 part in 1 billion.

2. PARTICULATES

As to the particulates associated with the SST, their effects, if any, prove extremely difficult to determine. This is because the quantities involved are not significant when compared to the stratospheric dust resulting from natural causes. The steady state operation of 500 SST aircraft would produce about 1/27th the amount of particulates the earth attracts from space each day. Occasional volcanic action places dust in the stratosphere in volumes exceeding the potential of the SST fleet by hundreds of orders of magnitude.

Based on an average residence time of 18 months, the carbon particulates would reach a peak concentration of 3 parts in 100 billion (by weight) with the air in the stratosphere, or a 3 billionths of a microgram per cubic meter.

The peak concentration of SO_2 (18 month cycle) would reach 2 parts in 10 billion or 21 billionths of a microgram per cubic meter, assuming uniform dispersion throughout the stratosphere.

The SCEP notes that most flying will occur in the northern hemisphere. They anticipated that a potential concentration as high as 66 parts in 10 billion could be formed due to the concentration of routes north of the equator and in complete vertical mixing. This concentration would be 60 *millionths* of a microgram per cubic meter.

By way of comparison, the average city, on a smog free day, will have 100 micrograms of airborne particulates per cubic meter. The "worst case" routes would therefore contain less than 2 millionths the dust of the average city in smog free conditions. Effects on climate from particulate concentrations of this magnitude will be difficult to determine.

3. OZONE

The MIT sponsored study group re-examined depletion due to water vapor and concluded that the effects, if they could be detected at all, would be well within the day to day variability of ozone density.

THE SST: THE ISSUE OF ENVIRONMENTAL COMPATIBILITY

(By George N. Chatham, specialist, science and technology, Science Policy Research Division)

ABSTRACT

The environmental issues cover three categories (a) Sonic boom, (b) Noise, and (c) Effect on world climate.

SONIC BOOM

The recently adopted national policy and the FAA Notice of Proposed Rule Making, issued April 16, 1970 (39 FR 6189) would prohibit operation of civil aircraft over the United States at speeds which would cause a sonic boom on the ground.

The supersonic capability would be used over the oceans. A sonic boom having a nominal overpressure of 2½ lbs per square foot would therefore impact the water. The weight of the overpressure is equal to that imposed by a 3 foot wave.

An overpressure of this magnitude is insignificant both to surface vessels and to marine life. The sound intensity to an ocean liner is such that only those on deck would detect it. The sound would be largely lost in the background noise of the ship, the ocean and wind.

NOISE

There are three phases of flight during which jet aircraft noise is noticed, (a) approach to landing, (b) take off, and (c) departure. Noise complaints have centered on the time the aircraft flies low over the community, that is the approach and departure phases. On both of these phases the SST produces less noise than the jet transports in use today.

The SST, however, without acoustical correction, will produce excessive noise during its run-up and take-off phase. After burners are used for take-off. This is a "first" for civil jet aircraft and introduces a new problem to jet engine acoustical engineers. Previous research on jet engine noise reduction has centered around the engine itself, and shows a substantial and continuing success.

Jet engines have been in commercial service for over 10 years. During this period they have grown in power by a factor of six. Intensive research to reduce the noise output of jet engines began about five years ago. The results to date have reduced perceived noise output to about half of the earliest levels. The perceived noise level per pound of thrust is now less than 10% of its initial value.

The noise related to the afterburner, however, originates primarily outside the engine. The sound is generated in the turbulent gases of the exhaust, much like the sound of a blow torch. Research to date has clearly shown that smoothing this flow will reduce the sound quite satisfactorily.

The one device tested thus far separated the exhaust column into a number of smaller streams. Although it reduced the noise adequately, the device also reduced the engine thrust below acceptable levels. The challenge therefore is to develop a silencer which will not unduly impair engine performance.

Although this challenge has yet to be achieved, eight years still remain before the Boeing SST enters commercial service. In view of the success of jet engine acoustical research to date, an adequate solution to quieting an afterburner seems a reasonable expectation.

Effect on World Climate

The engine of the SST will exhaust water, CO_2, SO_2 carbon and unburned hydrocarbons into the stratosphere. The President's Council on Environmental Quality and other groups concerned with environmental issues have questioned whether or not the exhaust of a fleet of supersonic transports could effect changes in the stratosphere, which might in turn alter some aspect of the earth's climate.

The SST as a factor in meteorology was examined by the NAS National Research Council Committee on Atmospheric Sciences. Their report (8) issued in 1966, predicted no adverse effects. More recently, the M.I.T. sponsored symposium, Study of Critical Environmental Problems (SCEP) (10) reexamined the issue. Concerns for damage to the ozone layer and for the release of CO_2 were dismissed. The particulates (carbon and the conversion of SO_2 into sulphates), as well as the release of water over the polar regions during the winter season were identified as concerns. The SCEP felt that the particulates, especially on well used routes, could increase the air temperature along the path of flight. An increase in stratospheric air temperature of several degrees was noted in a region of the stratosphere suspected to contain volcanic dust from the Bali Volcano Mt. Agung. There were no detectable effects either to other strata of air or on the surface associated with these observations.

As to water insertion, the SCEP noted that during the winter, the polar stratosphere has a higher relative humidity primarily due to its lower temperature. Additional water, it was felt, could result in some additional cloud cover.

The SCEP did not extend these considerations to potential effects on the surface or on climate. They recommended a research program to gather additional data from which an assessment could be made.

Their recommendations are being met in a D.O.T. environmental research program, which has also been reviewed and approved by the President's Council on Environmental Quality.

An examination of the issues and concerns indicates that they are, as intended, maximally conservative. For example, stratospheric flights in the polar regions conducted regularly over the past few years do not indicate that either "false" cirrus clouds or contrails are likely. Moreover, the effects of additional clouds or of the normal cloud cover in the polar region has a minimal effect due to the high reflections (low solar energy retention) of the surface and to the low initial solar flux in this region.

As to the particulates associated with the SST, their effects may prove extremely difficult to determine. This is because the quantities involved are not significant when compared to the stratospheric dust resulting from natural causes. The steady state operation of 1500 SST aircraft would produce about 1/27th the amount of particulates the earth attracts from space each day. Occasional volcanic action places dust in the stratosphere in volumes exceeding the potential of the SST fleet by hundreds of orders of magnitude.

THE SST: THE ISSUES OF ENVIRONMENTAL COMPATIBILITY

The Boeing SST will be the fastest, but not the largest of the civil transports. Its speed, the key to its productivity, is new only to civil aviation. The incorporation of supersonic capabilities in a civil transport followed 20 years of military experience and half a million hours of supersonic flight at higher as well as lower altitudes than that selected for the SST.

A successful Concorde would add 100,000 hours of supersonic flight experience to U.S. carriers alone prior to the first commercial flight of the Boeing SST.

It is likely the novelty of stratospheric flight at supersonic speed, even for commercial purposes will be gone long before the U.S. entry is prepared to share this airspace and market.

The following section reviews some of the main issues on the environmental compatibility of supersonic aircraft in general and the U.S. SST in particular.

I. THE SONIC BOOM

Sonic boom test programs (1) conducted by the Air Force have provided a practical and a theoretical understanding of the boom and its effects. These tests also gave several million civilians an intensive practical if not theoretical education in the phenomenon. Even when the booms were reduced far below any destructive potential by the altitude and/or distance of the source they proved hard to tolerate.

The FAA has exercised its authority over civil aircraft and has stated that the SST's must operate at subsonic speed when flying over the United States or its territories (2). The ruling applies to all civil aircraft, domestic or foreign, but does not pertain to military aircraft.[1]

A sonic boom created by a jet fighter zooming within a few hundred feet of the ground can cause pressure changes exceeding 100 lbs. per sq. foot, easily enough to destroy certain types of buildings. Air Force tests, in which the pressure increase ("over pressure") of sonic booms was gradually increased, revealed that damage first appeared when the over pressure reached 7½ lbs. per square foot. At this pressure, several panels of glass in a greenhouse were cracked. (3) The greenhouse was the most fragile of the test structures and the over pressure of 7½ lbs. per square foot[2] was therefore regarded by the Air Force as the lower edge of the pressure range where damage to structures may occur.

The civil aircraft ruling by FAA which forbids the sonic boom over land has relaxed much of the public concern over this aspect of the SST. However, on transoceanic routes, the SST's fly supersonically and the power of the sonic boom is therefore pertinent.

The Boeing SST will reach its supersonic cruising altitude at slightly more than 60,000 feet. It will then create a boom having an overpressure on the ocean of 2 to 2½ pounds per square foot.[3] This is the pressure change experienced when one rises four floors in an elevator. Fish or surface vessels in the ocean experience this same over pressure from the passage of a three foot wave. This is an insignificant pressure change, however, it should be noted that the actual change in pressure is not particularly high in the most intense of sonic booms. The phenomenon is noteworthy only because of the suddenness with which the change occurs. The low altitude pass that can destroy a building with an over pressure exceeding 100 lbs per square foot (5% of the normal atmospheric pressure) does so because the change in pressure occurs so rapidly. A far greater change in pressure, if it occurs over a longer time period, would go unnoticed. A rise from sea level to 5000', the altitude of Denver, Colorado, for example, creates a pressure change of 260 lbs. per square foot.

If a change in air pressure occurs in 1/20th of a second or less, the change is detected as sound. The SST over pressure of 2½ pounds per square foot occurs in milliseconds and is like a sudden clap of thunder, not painful but certainly startling, especially when heard from a clear sky under conditions in which the boom is not masked by background noise. On an ocean voyage the startle effect would be present only if the passenger was becalmed in a quiet sea. On an ocean liner, only those on the open deck would hear it and there its effect would largely be lost in the background sounds of the ship and the ocean.

NOISE: MEASURING JET ENGINE SOUND

The jet aircraft engine is not only a powerful sound generator, but also a generator of

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[1] The FAA has no jurisdiction over military aircraft.

[2] Note that the dimension is lbs. per square foot not per square inch which is the more familiar measure of pressure. Thus sonic boom units are 1/144 of those encountered in air pressure reports, etc.

[3] Under certain atmospheric conditions, the boom pressure could be amplified, to almost double the normal 2 to 2½ psf over pressure.

sounds to which the ear is particularly sensitive. A shrill whine can stop conversation and irritate to the extreme even when its energy value is quite low. The persistence or duration of the sound also adds greatly to its irritation value.

The decibel scale, however it may be weighted to accommodate special sound measurements, is logarithmic. In essence the scale relates acoustic energy to sound perception or loudness. Each increase of ten decibels signifies a ten fold rise in energy, but because the ear responds in a logarithmic manner, the ten fold rise in energy indicates a doubling of loudness. Conversely, if a sound is reduced by ten decibels, for example a reduction from 130 lb. to 120 lb., the lower level has only 10% of its former energy, but its loudness has been reduced by only 50% of the former value.

The decibel ratings for sound energy turned out to be useless in studies of jet engine noise. The irritation value of jet engines remained higher than that of the deep throated piston engines even when the decibel ratings of the jets were lower.

New measuring systems were devised to scale the intensity of the tones present in accordance with the sensitivity of the ear to each tone, and also to consider their duration. The basic decibel system is still used, but when property weighted for jet aircraft engine studies it is called *Effective Perceived Noise Decibels* (EPNdb).

When the main concern is noise intensity but not duration, the "E" is not used and the unit becomes "PNdb". The Department of Transportation uses both the PNdb and the EPNdb in its sound research. New FAA regulations limiting the intensity of jet aircraft noise apply the PBdb.

THE SOUND OF THE SST

There are three phases of flight in which the sound of jet aircraft can become objectionable. These are: 1) the approach to landing, 2) the take-off and, 3) the climb-out. The following table compares the sound levels of the Boeing SST, the Concorde and two subsonic jets.

JET ENGINE NOISE COMPARISON (EPNdb)

	B-747	B-707	Concorde	Boeing SST
Approach to landing [1]	110	118.0	.....	108
Takeoff (measured 2,100 feet to the side of runway)	103	107.5	120	[2] 124
Climbout [2]	111	118.0	110	108

[1] Measured 1 mile from end of runway.
[2] Figure of 124 EPNdb is based on today's noise suppression technology. Air frame and engine manufacturers as well as NASA and DOT are in their 5th year of jet engine noise research. These sources feel that when the SST engines enter service in 1978 or 1980, the figure of 124 EPNdb will be lowered to 118 EPNdb or less.

Everyone who is familiar with jet engine noise is also familiar with the sound of the Boeing 707. Its values are included to establish a standard for comparison.

The table shows that during two of the three critical phases of flight, approach to landing and climb out, the Boeing SST will emit about ½ the noise of the subsonic Boeing 707.

The claim that the SST will be four times as loud as the 707 is thus derived from the 17 EPNdb difference—each 10 EPNdb increment giving rise to a doubling factor of loudness. The fact that sound energy is increased 100 times (for a 20 EPNdb difference) is not a correct evaluation of the increase in perceived noise.

Progress in jet engine acoustic research over the past few years has been dramatic. An example may be seen in the contrast between two engines now in use. Those used in the Boeing 747 have twice the power of the engines in the Boeing 707, yet their noise level is less even during the full power take-off phase. The engines of the Boeing SST, with more than three times the thrust of the B-707 engines are quieter than any engine now in use except for the high sideline noise during take off.

Take off includes the period from brake release until the aircraft reaches a point one mile away from the end of the runway. During this interval of slightly less than two minutes, the SST is using its after-burners. Reducing the sound generated by after-burners is a new challenge to jet engine designers. A significant portion of the after-burner noise originates from the turbulent heated gases *after* they have been exhausted from the engine, much like the sound produced when a gas welding torch is ignited. The research to reduce this noise has clearly shown that as the flow of hot gases is smoothed, the sound is reduced. However, the devices used thus far also reduce the engine thrust. The task is now to find a method of smoothing the flow without significantly reducing the thrust of the engines.

In the 12 years jet engines have seen commercial service, their power has been increased six fold. The results of sound reduction research, which began about five years ago, are now being applied to new jet engines. Consequently, the average noise level of these new large engines is about half that of the older ones. In other words, the noise created per pound of engine thrust has been reduced to 1/10th of its former value (in PNdb). In terms of acoustical energy, the sound emitted per pound of thrust is 1/100th of its former value.

Another eight years will pass before the Boeing SST will see its first commercial service. If history is a guide, it seems reasonable to expect that the research to suppress the excessive side-line take off noise of these new engines will also be successful.

II. SUPERSONIC FLIGHT: THE ISSUES OF POLLUTION AND METEOROLOGY

If there could be less transportation, then the machines used for transportation would consume less fuel thereby reducing the quantity of pollutants released into the air. If, on the other hand, the movement of goods and people has become an essential part of our ecological system, then the causes of cleaner air are best served by fostering technologies which raise the productivity of transportation systems and equipment so that less of it will be needed while simultaneously, devising improvements to power sources to steadily reduce their release of noxious combustion products.

The ideal transportation system is one which accomplishes its work load satisfactorily with a minimum impact on the environment, and a minimum system cost.

The preceding sections on noise and sonic boom reviewed the Boeing SST in the context of its being a new entry in the air transportation fleet, the whole of which is undergoing a steady evolution toward quieter operation. The following sections examine a) general problem of atmospheric pollution; b) the SST as a source of pollution and c) the SST as a factor in the weather.

The problem of air pollution

Exhaust fumes and aerosols are poured into the air of most cities at rates which more often than not exceed the dilution rate of natural air movement. A combination of terrain and weather or the presence of a calm air mass over a city can result in a period of increasing aerial contamination. At best the result may be an irritating threat to health and at worst it can be lethal.

This is a serious threat, one requiring strong carefully aimed measures to correct. Understandably, a challenge to one's breath can cause fright, as well as irrational, often self defeating reactions. A prophesy of a doomed atmosphere gathers a quick following. Exhaust fumes and smarting eyes do little to broaden one's perception of the problem. Yet, if the city is viewed from a distance, from orbit for example, the city and all its vapors appears to be a vanishingly small dot on a broad clear expanse. In contrast, the people within the city, looking outward through a concentrated cloud of poor air, see the visible world only for a short distance. The distant world is lost in a seemingly all pervasive gray, and the dark prophesies which lay down the Earth and its life as a sacrifice to the machines, become believable calls to action to many.

The Scenarios of Doom

In the most common of these prophesies, the final end of life on Earth is described in four uniquely different versions:

a) man will exhaust his oxygen supply and suffocate;

b) water placed in the stratosphere by the SST will cause clouds, shield the Earth from the Sun thus causing a period of final glaciation;

c) water placed in the stratosphere by the SST will cause clouds which will insulate the Earth and cause a steady rise in temperature, ultimately a heat-death of life on Earth; and

d) water placed in the stratosphere by the SST might destroy the ozone layer, which stops part of the ultraviolet light from the Sun. Without the ozone layer, all but marine life would be eliminated by ultraviolet radiation.

Two factors stand out in these scenarios. First, there is the scale. The forces unleashed by man, the flight of aircraft in these cases, are viewed as more potent than the combined effect of all similar forces unleashed by nature. Second, the real target in air pollution, the correction of the noxious cloud permeating a city, is relegated to a lesser role, one present only by inference in the first scenario and absent in the other three.

Cleansing the air of cities requires positive, concerted planning and action. London suffered under the dense yellow-gray smog of soft coal effluents for hundreds of years before the recent, economically daring solution which required the use of cleaner burning fuels. Improved personal transportation, adequate transit services, innovative transportation systems are as difficult to finance as they are to plan.

The two goals, that of saving the Earth from some form of atmospheric cataclysm and that of cleaning the city air supply offer a vivid contrast. City smog removal requires positive action, expenditure of funds and specific pressure on technical advancement. Translation of the goal into a concern for the entire Earth seemingly preserves a concern for the atmosphere. But on this lofty plane, the threat to the cities loses much of its urgent quality. The scenarios of global destruction see the world's salvation only in terms of negative, not positive action. Their formula is simple. Some cataclysmic end to life on earth is visualized e.g. the depletion of the earth's oxygen. A few hypothetical associations or "causes" are named e.g. the burning of fossil fuels. In the doom scenarios, all that is needed to save life on earth is for man to cease doing whatever is selected as the cause of destruction, e.g. man will expire for lack of oxygen *unless* he reduces his consumption of fossil fuel. (4)

The relationship between cause and effect of these and other similar concerns is examined in the following pages. As an overview, however, cataclysmic events have occurred many times in the earth history. They have resulted from the interplay of natural forces and were not precipated by man's actions. There is no reasonable comparison between the magnitude of natural forces and those possessed by man. At this point in man's development, it seems unlikely that he can ever amass the power he might need to save the environment from one of these natural cataclysms. However, with continued development, he may accrue the knowledge and power he would need to save himself should another one occur. Meanwhile, his continued technical progress can allow the creation of vehicles and power sources which meet the requirements of his life without imparing the quality of it.

Global vs local air pollution: Locating the target

To generalize the condition in a smog bound city to the rest of the Earth disregards the relative scale that exists between the city and its envelope of air, to the Earth and its atmosphere.

Where the the interest becomes global, the problem must be placed in a global context. In a global context, the contaminants released by man are equated with the amount and natural fluctuation of the same or similar contaminants natural to the Earth's atmosphere. The rate at which the natural (or total) concentration of gases and aerosols fluctuate yields information on the ability of the atmosphere to cycle or dispose of or retain them. Similarly, the rate at which man uses fuel (and oxygen) can be related to the total oxygen supply and also to the renewal sources of oxygen.

Man's use of oxygen vs the oxygen supply

Oxygen accounts for 20.95% of the total atmospheric mass, or 1.3×10^{15} tons. All remaining recoverable fossil fuel reserves total 2.97×10^{12} tons. If man were to burn all of this fuel, the total recoverable reserves, he would consume 3% of the available atmospheric oxygen. The percentage of oxygen in the atmosphere would be reduced from 20.95% to 20.32%. The concentration of oxygen available for breathing reduces by an amount six times greater than this when one travels from Washington, D.C. to Denver, Colorado due to the lower air pressure in Denver. *Man is therefore incapable of exhausting, or even significantly reducing his oxygen supply.*

As to the role of plant life in sustaining this reservoir, Wallace Broecker (5) offers the following comment:

"First of all, each square meter of earth surface is covered by 60,000 moles of oxygen gas. Plants living in both the ocean and on land produce annually about 8 moles of oxygen per square meter of earth surface. Animals and bacteria destroy virtually all of the products of this photosynthetic activity; hence they devour an amount of oxygen nearly identical to that generated by plants. If we use the rate at which organic carbon enters the sediments of the ocean as a measure of the amount of the photosynthetic product preserved each year we find that it is about 3×10^{-3} mole of carbon per square meter per year. Thus, animals and bacteria are destroying all but 4 parts in 10,000 of the oxygen generated each year. The net annual oxygen production corresponds to about 1 part in 15 million of the oxygen present in the atmosphere. In all likelihood even this small amount of oxygen is being destroyed through the oxidation of the reduced carbon, iron, and sulfur being exposed each year to weathering processes. Thus, in its natural state the oxygen content of our atmosphere is exceedingly well buffered and virtually immune to change in a short time scale (that is, 100 to 1,000 years).

"Man has recovered altogether about 10^{14} moles of fossil carbon from the earth's sedimentary rocks. The fuels bearing this carbon have been combusted as a source of energy. The carbon dioxide produced as a by-product of this enterprise is equal in amount to 18 percent of the carbon dioxide contained in our atmosphere. Roughly 2 moles of atmospheric oxygen was required to liberate each mole of this carbon dioxide from its fossil fuel source. By so doing we have used up only 7 out of 10,000 oxygen molecules available to us. If we continue to burn chemical fuels at our currently accelerating rate (5 percent per year), then by the year 2000 we shall have consumed only about 0.2 percent of the available oxygen (20 molecules in every 10,000). If we were to burn all known fossil fuel reserves we would use less than 3 percent of the available oxygen. Clearly a general depletion of the atmospheric oxygen supply via the consumption of fossil fuels is not possible in the foreseeable future."

The effects of increasing atmospheric carbon dioxide

When carbon dioxide (CO_2) is released as a combustion product, it is distributed throughout the entire atmosphere. Where and how it is released does not effect this dispersion. It is absorbed by the ocean and partly by plants and other life, and part remains in the air. The division of CO_2 between these three reservoirs holds a fairly constant ratio.

Its distribution and absorption rate therefore seems to a function of atmospheric concentration. That is, the more CO_2 there is to absorb, the more is absorbed. The atmosphere, all living organisms and the ocean thus become reservoirs for CO_2 and the available quantity released to the air is "partitioned" between them.

Accurate measurements of the partitioning were made for the first time during the period 1958 through 1963. (6)

Beginning in 1958 and extending through 1963, two nearly continuous series of measurements of atmospheric CO_2 content were made. One of these series was taken at the U.S. Weather Bureau station near the top of Mauna Loa Mountain in Hawaii (Pales and Keeling, 1965), the other at the United States scientific station at the South Pole (Brown and Keeling, 1965). The measurements were carried out on an infrared gas spectrometer, with a relative accuracy for a single measurement of about =0.1 ppm. The observing stations are located near the centers of vast atmospheric mixing areas, far from uncontrollable sources of contaminants. Because of these nearly ideal locations, together with the high precision of the instruments, and the extreme care with which the samples were taken, these measurements make it possible to estimate the secular trend of atmospheric CO_2 with an accuracy greater by two orders of magnitude than ever before. Some fifteen thousand measurements were carried out during the five-year period.

The data show, clearly and conclusively, that from 1958 through 1963 the carbon dioxide content of the atmosphere increased by 1.36 percent. The increase from year to year was quite regular, close to the average annual value of 0.23 percent. By comparing the measured increase with the known quantity of carbon dioxide produced by fossil fuel combustion we see that almost exactly half of the fossil fuel CO_2 apparently remained in the atmosphere.

The table below (6) shows the increase in CO_2 as a result of the complete combustion of all recoverable fossil fuels. (1)

TABLE 5.—ESTIMATED REMAINING RECOVERABLE RESERVES OF FOSSIL FUELS

	10^9 metric tons	Carbon dioxide equivalent, 10^{19} gms.	As percent of atmospheric CO_2 in 1950
Coal and lignite [1]	2,320	5.88	252
Petroleum and natural gas liquids [2]	212	.67	29
Natural gas [3]	166	.43	18
Tar sands [2]	75	.24	10
Oil shales [2]	198	.63	27
Total	2,971	7.85	336

[1] Assumed to be 20 percent lignite containing 45 percent carbon, and 80 percent bituminous coal containing 75 percent carbon.

[2] Assumed carbon content of petroleum, natural gas liquids, and hydrocarbons recoverable from tar sands and oil shales=86 percent.

[3] Assumed composition of natural gas by volume: CH_4=80 percent, C_2H_6=15 percent, N_2=5 percent.

Source: Computed from data given by M. King Hubbert, "Energy Resources, a Report to the Committee on Natural Resources of the National Academy of Sciences—National Research Council," NAS publication 1000-D, 1962, pp. 1-141.

From this data the following conclusion is reached (6):

We may conclude that the total CO_2 addition from fossil fuel combustion will be a little over 3 times the atmospheric content, and that, if present partitions between reservoirs are maintained, the CO_2 in the atmosphere could increase by nearly 170 percent.

The atmosphere now contains CO_2 in the ratio of 3 parts in 10,000 by volume. Complete combustion of all fuel reserves would increase this by 170%. It would then become 8 parts in 10,000. Since no more CO_2 could be added (from further combustion) the amount would show a yearly decline as it is partitioned to the biosphere and to the ocean.

The actual quantity of CO_2 in the atmosphere at any given time in the future will therefore reach a maximum between 3 and 8 parts in 10,000. Estimates of atmospheric CO_2 (6) have been made for the year 2000 based on various rates of fuel consumption. These calculations are summarized as follows (1):

Assuming further that the proportion remaining in the atmosphere continues to be half the total quantity injected, the increase in atmospheric CO_2 in the year 2000 could be somewhere between 14 percent and 30 percent (of amount now present).

In other words an increase of 30% would change the ratio from 3 parts in 10,000 to almost 4 parts in 10,000.

CO_2 and the weather

Both CO_2 and water vapor are absorbers of infra red radiation. That is, heat from the sun, or heat reflected from the Earth pass through the oxygen and nitrogen in the atmosphere without being absorbed, hence without warming them. In contrast, both CO_2 and water vapor will absorb this heat, hence become sources of heat in the atmosphere. Hence their presence in the air can result in a warming effect on the air.

Heat absorbed by molecules in the atmosphere is re-radiated, not stored. The radiation emitted is omni-directional, hence is partly turned back into space.

Although CO_2 and water vapor are similar in their heat absorbing and re-radiating and in their air warming characteristics, they differ sharply in another effect. CO_2 concentrations in the atmosphere tend to remain fairly constant even though the air temperature changes. In contrast, the warmer the air becomes, the more water vapor it can hold. Therefore the ratio of CO_2 to water vapor varies widely with air temperature, hence with latitude and with altitude.

Water serves as a heat pump both to air masses and to differentially heated areas of the Earth. As water changes state to become water vapor, energy is absorbed. The water vapor, on reaching a cooler point in the atmosphere, condenses and in the process, releases its energy. The energy is then radiated equally in all directions, about half into space. The condensate, as a cloud, also reflects incoming energy back into space. The cloud may then descend as rain or re-evaporate and transfer freshly absorbed energy to still another point.

Seventy percent of the Earth's surface is water and most of the Earth's weather is produced by the air-water energy exchange.

The role of CO_2 in the atmosphere is undisputed in terms of its heat absorbing and re-radiating capability. The effect of this action is far more difficult to determine due to the fact that the warming action of CO_2 is always confounded with other and larger heating and cooling mechanisms. It should also be noted that the net energy absorbed by the Earth is related more to its reflectivity than to air temperature. Highly reflective desert regions for example, have extremely hot air while in the sunlight but cool rapidly once the sun has set. *Air temperature therefore has no direct relationship to energy or heat actually transferred to the Earth.*

Were it not for the stabilizing and counterbalancing effects of larger variables, i.e. water vapor, surface reflectivity, cloud formation, etc., the warming role of CO_2 in the atmosphere could be computed. This is the so-called "greenhouse" effect.

The overall warming of the atmosphere between 1885 and 1940 was generally felt to be related to rises in the concentration of atmospheric CO_2. Yet since that time, CO_2 insertion has markedly increased but temperatures have declined slightly:

"One might suppose that the increase in atmospheric CO_2 over the past 100 years should have already brought about significant climatic changes, and indeed some scientists have suggested this is so. The English meteorologist, G. S. Callendar (1938, 1940, 1949), writing in the late 1930's and the 1940's on the basis of the crude data then available, believed that the increase in atmospheric CO_2 from 1850 to 1940 was at least 10%. He thought this increase could account quantitatively for the observed warming of northern Europe and northern North America that began in the 1880's. From Table 2 and our estimate of the CO_2 partition between the atmospheric, the ocean, and the biosphere, we see that the actual CO_2 increase in the atmosphere prior to 1940 was only 4%, at least from fossil fuel combustion. This was probably insufficient to produce the observed temperature changes. [But it should be noted that up to 2.5% of the atmospheric carbon dioxide (after partition with the ocean and the biosphere) could also have been added by the oxidation of soil humus in newly cultivated lands.]

As Mitchell (1961, 1963) has shown, atmospheric warming between 1885 and 1940 was world-wide phenomenon. Area-weighted averages for surface temperature over the entire earth show a rise in mean annual air temperature of about 0.5°C (0.9°F). World mean winter temperatures rose by 0.9°C (1.6°F). Warming occurred in both hemispheres and at all latitudes, but the largest annual rise (0.9°C or 1.6°F) was observed between 40° and 70°N latitudes. In these latitudes, the average winter temperatures rose by 1.6°C (2.8°F).

The pronounced warming of the surface air did not continue much beyond 1940. Between 1940 and 1960 additional warming occurred in northern Europe and North America, but for the world as a whole and also for the northern hemisphere, there was a slight lowering of about 0.1°C (0.2°F in mean annual air temperature (Mitchell, 1963). Yet during this period more than 40% of the total CO_2 increase from fossil fuel combustion occurred. We must conclude that climatic "noise" from other processes has at least partially masked any effects on climate due to past increases in atmospheric CO_2 content." (6)

In view of the overall stability of the Earth's temperature (a rise of one to two degrees between 1885 and 1940 and a fall of a few tenths of a degree over the next 20 years) the role of CO_2, or the potency of a "greenhouse" effect seems rather tenuous. However, the failure of the atmospheric models which predicted the warming effect did not cause them to be abandoned. Another approach is to ask how much colder the climate would be without the atmospheric CO_2. One answer to this estimates a drop of 18°F. (1):

Models of atmospheric thermal equilibrium in which vertical convection is allowed to maintain the observed vertical temperature gradient have recently been constructed by S. Manabe of the U.S. Weather Bureau (Manabe and Stricler, 1964; Mannabe, 1965). These show that the effect of infra red absorption from the present atmospheric carbon dioxide at mid latitudes is to maintain a ground temperature about 10° C. (18° F.) higher than would prevail if no CO_2 were present. An increase in the CO_2 content without a change in absolute humidity would, according to these models, produce a somewhat smaller surface temperature rise than that estimated by Moller. But a considerable change would occur in the stratosphere, where the CO_2 concentration by volume is perhaps 50 times that of water vapor. A 25% rise in carbon dioxide would cause stratospheric temperatures to fall by perhaps 2° C. (3.6° F.) at an altitude of 30 kilometers (about 100,000 feet) and by 4° C. (7° F.) at 40 kilometers (about 130,000 feet). (6)

Since the CO_2 now present in the air can not be removed artifically, the predicted drop in temperature of 18° F. can not be tested. However, one difficulty with this approach is clear. The effect of CO_2 in all models is to predict higher temperatures in the lower part of the atmosphere. Also the concentration of CO_2 in the total atmosphere has risen at a steadily increasing rate since 1885. Yet during that time the mean temperature of the Earth elevated slightly during the time of least concentration, then fell slightly during the time of highest concentration.

It would therefore seem that the history of CO_2 in the atmosphere shows its effect to be unknown, *not for lack of knowledge on the infra-red absorption and heating values of CO_2, but simply because CO_2 in the context of all other variables and stabilizing factors, produces an effect so small that it is lost.*

It would appear that increasing concentrations of CO_2 can not be shown to be a significant variable to the climate. As a pollutant, CO_2 is colorless, odorless. Except for water-vapor, which is not generally considered a pollutant, CO_2 is the least toxic effluent of combustion. It is soluable in water and is used to carbonate soft drinks and beer. An individual is exposed to much higher concentrations of CO_2 in carbonated beverages than a dense smog condition. When the concentration of combustion products reaches a level where physiological damage can occur, the damage is done by combustion effluents other than CO_2.

Fuel consumed for work performed

Within the city, the work efficiency obtained from fuel becomes a matter of environmental safety as well as quality. The table below compares fuel consumed per horsepower/hour for various types of power sources. (7)

Power plant	(pound fuel/horsepower hour)
1. Draft Horse	10
2. Coal fired locomotive	4
3. Automobile	0.9
4. Diesel-Electric Locomotive	0.6
5. Aircraft Piston Engine	0.5
6. Fan Jet (Subsonic Aircraft)	0.4
7. Jet engine (supersonic aircraft)	0.3

Aerial commuter systems such as VTOL and STOL offer the city high production vehicles equipped with higher temperature cleaner burning engines compared to surface vehicle standards. Of more importance to the city is that exhaust from these vehicles is released at an altitude which gives the normal air movement a much more effective dilution rate than it can have for slow moving densely packed surface vehicles.

It should also be noted that pollution from surface vehicles while related to efficiency, is even more related to speed of traffic movement. Traffic congestion multiplies the running time (hence effuents) of all vehicles involved.

The effluents of combustion emitted outside of a city do not present a serious pollution problem when compared to those allowed to concentrate within a city. However, they can not be ignored.

Aircraft, particularly jet engined aircraft emit the lowest quantity of pollutants for fuel used of any vehicle. Their effluents are also released in the air where they may be dispersed readily.

The following table shows the pollutant yield for various vehicle engine systems based on using the same quantity of fuel.

POUNDS POLLUTANT EMITTED PER 1,000 LBS. FUEL CONSUMED

Vehicle	Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulfur oxides	Total (rounded)
Subsonic jet	0.1	3.0	0.5	1	1.0	6.5
SST	.9	3.5	.5	1	1.0	6.9
Ocean liner	(1)	10.0	.01	1	20.0	31.0
Piston airliner	100.0	50.0	15	2	1.0	168.0
Auto	200.0	20.0	40	1	1.0	262.0

[1] Negligible.

We should now compare the work potential obtained, that can be done from the same fixed amount of fuel. The next table places the comparison on the amount of effluents released per 1,000 seat miles for the same vehicles.

Finally, we may examine the same vehicles in terms of their productivity. The more productive a vehicle becomes, the lower the number of vehicles required to handle a given work load. A reduction in the number of vehicles required is of great importance to transportation economics as explained earlier. It is also a pollution variable.

EMISSIONS PER THOUSAND SEAT-MILES

Vehicle	Fuel (pounds per thousand miles)	Pounds of pollutants emitted per thousand seat-miles: Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulfur oxides	Total (rounded)
Subsonic jet	170	0.17	0.51	0.1	0.17	0.17	1.1
SST	193	.17	.68	.10	.19	.19	1.3
Ocean liner	660	(1)	6.6	.1	.6	13.2	20.5
Piston aircraft	133	13.3	6.6	2	.2	.1	22.3
Auto	100	20	2	4	.1	.1	26.0

[1] Negligible.

When a vehicle must be overhauled, a great deal of power (hence fuel consumption) is required. For example, six subsonic jets (like the Boeing 707) must be maintained to do the work that can be handled by a single Boeing SST. The table below compares the same set of vehicles in terms of realtive productivity. (4)

RELATIVE PRODUCTIVITY

Vehicle	Speed (miles per hour)	Fuel consumption (pounds per hour)	Seating capacity	Vehicles required for 2,000 seats	Vehicles required for equal work/year
SST	1,750	115,000	270	7.4	1.0
Ocean liner	40	53,000	2,000	1.0	5.9
Subsonic jet	550	13,000	140	14.3	6.1
Piston airplane	350	3,000	65	31.0	20.8
Auto	60	24	4	500.0	1,970.0

In all comparisons, the turbine engine powered aircraft is superior to other systems. The piston engine, particularly when used in automobiles, is clearly the worst.

The jet aircraft account for 3 times the intercity passenger miles of all other carriers combined. In local travel and commuting however, the automobile remains unchallenged.

Research to develop low cost automobile exhaust treatment systems is progressing, but must necessarily be regarded as a first step. These systems will improve air quality by removing a percentage of the more toxic effluents from the exhaust. However, they do not alter the total quantity of fuel consumed nor the extremely low vehicle productivity.

The comparative data shown suggests that the technology of the high temperature used in modern aircraft if applied to automobiles, would significantly reduce exhaust concentration and toxicity. The aircraft turbine when compared to the automobile engine produces less than 3% as much toxic effluents for the same amount of fuel. The amount of fuel required per hp/hr is also reduced by more than 50%.

III. STRATOSPHERIC CONTAMINATION FROM THE SST

Water vapor

A normal fleet of 400 supersonic transports making 4 trips per day will inject 150,000 tons of water per day into the stratosphere. In addition to the water, the exhaust gasses contain particulate matter, carbon dioxide, sulphur dioxide and other gaseous products.

Speculation over the consequences of this intrusion into a relatively unused layer of the atmosphere have included fears that climatic changes would occur. Both lethal rise in temperature and a new ice age have been predicted. A permanent cloud cover was associated with both forecasts. Another postulation includes a potential destruction of the ozone layer with a subsequent intensification of ultra violet irradication.

The stability of the stratosphere has also been questioned. The idea here postulates that the steady state of the stratosphere may result from a critically sensitive balance of natural forces, and man's use of it could destroy the critical balance and trigger vast changes.

Man's concern that he may alter the climate before he learns to control it is far from new. The Earth's climate is often identified as the price man will pay for some new (hence unfamiliar) technical or scientific development. In recent times, the indictment of climate change has been directed at nuclear detonations, rocket penetrations and rocket exhaust products.

The latest item to receive this indictment is the supersonic transport. Supersonic flight is unprecedented in the world of civil aircraft. A by-product of supersonic flight, the sonic boom (from military planes) served as its debut to the civilian world. The potential utility of the speed for civil applications was hardily suggested by the startling shock of this explosive greeting. Continued testing (by the Air Force in the early 1960's) to study sonic boom effects left many cities of people with more awe than understanding and more anger than curiosity. Supersonic flight to the military had become common place by then. It dates back 23 years, a period long enough for many thousand supersonic aircraft to have accrued an estimated [4] half a million super sonic flight hours at altitudes between 50,000 and 80,000 feet. Similar experience is common to most of the world's Air Forces.

But, the familiarty of the military with supersonic flight does not transfer to the public sector in any automatic fashion. The civil SST had a stark newness and an aura of great power. If it were allowed to fly, would it upset our atmosphere? The National Research Council of the National Academy of Science commented as follows:

The aerospace age has added another dimension to the problem of inadvertent weather modification. The advent of supersonic transport aircraft, flying routinely in the stratosphere, has raised a question concerning possible consequences of the additional water vapor to be injected by these aircraft into the stratosphere. Our tentative conclusion, based on an assumed traffic volume of four flights per day for 400 supersonic transport planes, is that neither additional cloudiness (contrails) nor water-vapor absorption of a long-wave radiation will be sufficient to disturb appreciably either stratospheric properties or the large-scale circulations that are influenced by its thermodynamic state. (8)

An analysis of the problem by the Environmental Science Services Administration led to the following comment:

It is the view of the Office of Meteorological Research that although an unequivocal answer cannot be offered, the general opinion of a large group of scientists almost unanimously rejects any significant threat to modification of the weather. (9)

[4] Total furnished by DOD.

Regardless of the authority behind these statements, they have had little effect on the disposition of this concern. Perhaps these analyses would have carried greater force if the meteorologists had explained the place this man-made perturbation holds in their realm of the atmosphere and its natural forces.

Let us examine some of the reasons why the meteorologists who were quoted were not disturbed by the prospect of water injection from a fleet of SST's.

During 1967, three common sources of combustion in the United States poured about 1.2 billion tons of water into the air, as follows:

Source:	*Hydrocarbon fuel burned, 106 tons*
Power plants	447
Automobiles	220
Aircraft	25
Total	692

Since each pound of fuel burned produces about 1½ lb of water, the burning of 692-million tons of hydrocarbon fuels will produce approximately a billion tons of water. This water, ejected as vapor, becomes a factor in the equilibrium of water absorbed or released by the atmosphere.

How much of a factor is a billion tons of water?

One often hears reference to "our sea of air." In a literal sense, the average moisture level of the air would indeed make a sea. On an average day our "sea" in the air weighs approximately 150-trillion tons. Condensed in one place this water would form a 3000-sq-mi. sea 1 mi. deep.

We can now place the water generated by burning fuels in its global context. If the billion tons of water generated in a year by the sources cited could be added to the air in a single second, it would add 1 part in 100,000 to the water normal to the atmosphere. Normal fluctuations in the atmospheric water content exceed this quantity many thousand fold.

Our projected fleet of SST's will occupy a previously unused part of the Earth's air envelope. Cruising height of 12 mi. will be five or six miles above that of conventional jet transports. Consequently, the atmospheric volume used for air travel will be almost doubled. The useful volume of air space is now about 1.2-billion cu. mi. With the SST the useful volume will rise to about 2½-billion cu. mi.

If we relate the water produced by fuel consumption of the fleet of SST's to the

water normal to the air, it appears as only 1 part in 1 billion. However, the water normal to the air is concentrated in the warmer, more-dense air near the Earth's surface.

In considering this aspect of the problem we can begin with the following observations. Up to 200,000 tons of water will be ejected over a flight path of some 2-million miles. The water would therefore be dispersed at the rate of about 200 lb. per mile.

If the relative humidity happened to be near saturation in a particular section of the normally dry (2 or 3% relative humidity) stratosphere, contrail could form. It would exist until it was dispersed into an area of air somewhat dryer and then it would become invisible, as water vapor.

The expansion of the water vapor behind the aircraft is rapid and continues until equilibrium with the surrounding air is achieved. Water vapor, like CO_2 absorbs energy in the infrared region of the spectrum. If one attempts to measure the change in radiation intensity on a square foot of Earth surface within about two minutes of the fly-over, he will be seeking a change in sunlight resulting from the light penetrating an expanding band of water vapor which by that time would have merged with the wing tip vortices. These two rotating tubes of air would have a total cross section of about 200,000 square feet.

The SST requires two seconds to fly a mile. Therefore, two minutes after passage the expanding water vapor would occupy a volume of a billion cubic feet of air per mile. Measuring solar energy intensity on a square foot area directly beneath one of the tubes (about 350'' diameter), existing at this instant would require detecting changes associated with the filtering efficiency of .0024 ounce of vapor (if weighed as water). Measurement would be most uncertain, if possible at all.

Gradual accumulation of water in the stratosphere

However small the daily effect may be, one aspect of the question remains. The SST, once in service, will remain in service. Will the year-by-year deposits of water cause a gradual acumulation which could eventually affect the normal environment? This question asks whether or not this normally dry, high layer of air contains mechanisms to preserve its equilibrium. It further asks: Will the water from the SST accumulate with time or be disposed of by the natural mechanisms which now preserve the equilibrium of the stratosphere?

The recently concluded symposium at Williams College to study critical environmental problems tentatively concluded that in cooler (polar) areas, the stratosphere could accumulate enough water for increased cloudiness. In expressing their concern, the symposium recommended that tests and research be conducted to determine first whether or not additional clouds would occur and second what effect these clouds might have.

To place these concerns in perspective, it should be noted that the stratosphere does, indeed, possess natural mechanisms which hold its conditions relatively constant. The higher strata of the atmosphere are not immune from the effects of low-altitude weather. A single, large cumulonimbus cloud, common to the tropics, can inject as much water vapor into the stratosphere as would a fleet of SST's making 1600 flights on a given day. (6)

The number of such injections per day is estimated to be between 2 thousand and 6 thousand. Seasonal variations and low altitude weather changes give a wide range to this daily insertion of water from natural causes. The relative humidity of the stratosphere, however, remains quite stable and very low. ESSA data shows that over the past five years the water content of the stratosphere has shown a slow increase and is now 50% greater than it was five years ago. In numbers, however, this 50% increase is the difference between 2 parts per million (ppm) and 3 ppm.

About 20% of the atmosphere lies above 38,000 feet. This quantity of air weighs 11.4×10^{14} tons. Stratospheric water would therefore be approximately:

at 2 ppm—22.8×10^8 tons
at 3 ppm—34.2×10^8 tons

Some idea of the water cycling capability of the stratosphere can be obtained by comparing the relatively stable amount of water present in the stratosphere with the amount received from tropical weather each day.

If we use the ESSA estimate of approximately 150,000 tons of water inserted into the tropical stratosphere from a simple large cumulonimbus cloud, then for each 500 such daily events the stratosphere would receive 75×10^6 tons of water.

This rate of water insertion (500 cumulonimbus clouds per day) would require 45 days to place in the stratosphere an amount of water equal to that now present. This consideration is less important than the fact that the water level in the stratosphere is extremely constant. To remain constant, or approximately so, the stratosphere *must release all the water it receives each day above the normal to its stable state.*

For each 500 large cumulonimbus clouds that occur each day in the tropics, the stratosphere receives *but also releases* seventy five million tons of water. The water injected by a fleet of 500 SST's would be 0.002 of this amount and being water, would be subject to the same cycling mechanisms. The stratosphere is dry, not because it lacks exposure to huge quantities of water, but because its natural mechanisms tend to stabilize its water content at a low level. Water beyond this level is rejected.

The cycle time for materials placed in the stratosphere is uncertain. The period of 18 months is often used. The figure was derived from fall-out detection following a nuclear test. The nuclear decay of the fall out indicated an 18 months period from the initial explosion. The cycle time of water placed in the stratosphere would have little bearing on stratospheric humidity. That is, the water released each day is approximately equal to the amount received, but it is neither likely nor necessary that the water *either released or absorbed be the same water.* When air is circulated into a cooler region, it becomes less able to carry water. A temperature change can cause condensation of water to occur, and the water will condense without regard to its time of residence in the air.

If we assumed that the water placed in the stratosphere actually did take 18 months to be cycled out, the supply of water placed in the stratosphere would rise steadily to reach a maximum in 18 months of 8.1×10^7 tons. This amount would boost the now normal 3 ppm to a new constant level of about 3.4 ppm. The Study on Critical Environmental Problems (SCEP), (10) using a similar approach for this assumption (18 months cycle), estimated the increase in strateospheric water would stabilize at a 10% increase or rise from 3.0 ppm to a maximum 3.3 ppm.

It should be noted that the rise in stratospheric humidity based on a residence time assumption for water is at variance with the observation that the stratosphere does not retain the water to which it is exposed expect for the amount which sustains its steady state humidity. The increase based on assumption of a residence time is therefore a "worst case" hypothesis.

Finally, should the "worst case" be true, the increase would represent a change only one fifth as great as the normal variation noted over the past five years.

During the winter season in the polar region, a local cloud effect was hypothecated by the SCEP. This cloud effect, if it occurs could be a contrail or a cirrus-like formation. Although stratospheric flights in the polar region have not indicated that contrails or false cirrus clouds have occurred during the past two years of observation, these flight experiments will continue.

Volcanic events: a test of stratospheric stability

Aircraft flying in the stratosphere deposit water, gaseous products and particulates. Regular use of the stratosphere by civil SST's will increase the amount over that now being injected by military aircraft.

The issue may be placed in perspective by examining the effects on stratospheric stability, ozone, and world weather of volcanic events. A volcanic eruption is a good test of stratospheric stability. Millions of tons of gas, water, dust and chemicals can be injected in a single day. The stratosphere receives the full impact of the injection because the injection is complete before cycling-out can start.

The National Center for Atmospheric Research (NCAR) cites six volcanic events in recent times which injected enough material to cause a decline in world temperature through reflection or absorption of reradiation of solar energy:

"Volcanic dust has been held responsible for several more recent dips in world temperature means, such as the notable temperature declines in 1787, 1816 [the "year without a summer"], 1837, 1884, 1893, and 1912."

Particulates from Volcanic action require about a year to settle. If the particles are exceptionally fine, their residence is longer. The finer particles are in a spherical shell known as the Jungle layer at an altitude of about 60,000 feet.

The content of volcanic emission is not limited to water and inert ash. It is frequently highly reactive (11):

"Analyses of material from Kilauea, in both its non-eruptive and eruptive phases, show that more than 95% of the fume particles are sulfuric acid droplets, often partially neutralized with ammonium and calcium ions. Other particles consist of ammonium bisulfate, ammonium sulfate, ammonium chloride, sulfur, and calcium and magnesium sulfates. The volcanic particles from Mayon contain all the same substances, but there is on the whole much less acid than at Kilauea. A considerable amount of ash, composed of fine particles of lava, was present in Mayon samples. Also present were many tiny spherules, in concentrations indicating that they originated from the volcanic action."

Perhaps the greatest burden placed on the stratosphere in recent time occurred at Krakatoa.

The Krakatoa eruption replaced an island containing 14 cubic miles of rock with a flat plane a mile across on the ocean floor lying beneath 1000' of water. Dr. Melvin A. Cook, one of the world's foremost authorities on explosives, computes the energy released by Krakatoa as equivalent to 5,000 megatons of TNT (12). The column of efflux left the Earth's surface at velocities exceeding mach 3. The resulting sonic boom was audible 3000 miles away.

The shock wave, detectable on barographs, traveled around the earth, reflected from itself, and returned, repeating the cycle four times before dissipating below the sensitivity of available instruments.

Estimates by Ernst Behrendt indicate that the efflux included a cubic mile of sea water in the form of super heated vapor. Behrendt's account was published by the American Nature Association (Nature Magazine, March 1946).

Sightings at the time produced estimates of the altitude achieved by the blast as 150,000 feet. Several cubic miles of materials, rock, lava, steam and water were pulverized and blended by shock waves and heat and brought night-time darkness to areas within a hundred mile radius.

The residue circled the Earth, giving the moon a green tint and turning the setting sun blue, grey or green for the better part of a year.

Here again it would appear that several cubic miles of water, chemicals and solids, interacting with the sunlight for over a year, as they cycled out of the air, caused no noted or dramatic effects on long term temperature cycles, world weather, or life on earth due to ozone disturbance. (It may be noted that the Junge layer and the area of highest ozone density coincide in altitude).

The contaminants placed into the air by the SST are not comparable either in quantity or chemical reactivity to insertions the stratosphere routinely experiences from natural causes.

Particulates from the SST

Carbon particles from the SST engine are estimated at five pounds per SST per hour. The carbon emission (20 lbs.) would be dispensed over a distance of about 1800 miles.

The highest concentration of carbon would exist about an hour after passage of the aircraft through a calm section of the sky. Most of the exhaust is drawn into the tip vortices formed by the wing. The lift generated by the wing imparts momentum to the air. The energetic air departs from each wing tip as an expanding, whirling mass of air. These two air masses rotate in opposite directions and horizontally to the ground. They depart in a downward direction and spread away from each other. They will eventually stagnate below and to either side of the flight path. The final diameter of the becalmed horizontal columns throughout which the carbon has been mixed will be several thousand feet across.

If we assume all the carbon emitted is contained within these two air columns, each will contain 10 lbs. in an hours flight. Based on a maximum diameter of 1000', each column will contain 7×10^{12} cu. ft. through which 10 lbs. of carbon are dispensed, or 7×10^{11} cu. ft. per lb. of carbon. This is not a detectable quantity.

A "normal" fleet of 500 SST's, operating ten hours per day would release a total of 50 tons of carbon per day. If an average stay time of 18 months is assumed for particulates placed in the stratosphere, then the steady state density of the carbon following an 18 month build-up is of interest.

550 daysx50 tons/day=27,500 tons

Based on an average residence time of 18 months, the carbon particulates reach a peak of 27,500 tons, or a concentration of 3 parts in 100 billion (by weight) with the air in the stratosphere or 3 billionths of a microgram per cubic meter. The average city during a smog free day contains 100 micrograms of dust per cubic meter.

In addition to the carbon, today's fuels would also release sulphur dioxide. This gas is heavier than air and tends to fall. It has an affinity for water and can combine with watervapor to form a particle of sulphurous acid. Sunlight might add enough energy to some of the particles to pick up an additional oxygen atom to form a heavier particle of sulphuric acid or ammonium sulphate.

In examining the sulphur dioxide quantities, the MIT sponsored study group on critical environmental problems (SCEP) assumed that:

(a) The fuel consumed in 1978 would contain the same amount of sulphur as the fuels in use today. The average of the fuels today ranges between .004% and 0.09% sulfur content. The value of .05 was selected. As well as being a pollutant, sulfur decreases engine life. Jet engine fuels have steadily decreased in sulphur content and will continue to do so. By the time the SST enters commercial service the sulphur content will be between 0.005% and 0.01%.

(b) The fuel consumption was assumed to be a constant of 66 tons per aircraft per hour. However, the Boeing SST must reduce power as its fuel is consumed. Its fuel consumption average is 53 tons per hour for a complete flight. The operating time for the "normal fleet" (500 aircraft) was set at 7 hours per day by the SCEP. Original calculations made for this review are based on a 10 hour day.

(c) The sulphur dioxide gas in the exhaust is not particulate. However, for purposes of the study, the gas was regarded as totally converted to particulates. The sulphate particles, once formed, tend to grow and eventually fall. A hypothetical and unnatural situation was assumed for the purpose of looking at the effects from the most conservative (worst case) viewpoint. This case assumes total conversion of SO_2 to particulates and no particle growth.

Using the SCEP assumptions, an SST will release 0.66 tons of sulphur dioxide per day. A fleet of 500 aircraft would release 330 tons per day. With a cycle time of 18 months the peak SO_2 concentration would reach 181,500 tons. This quantity, if evenly dispersed would become 2 parts in 10 billion with the air in the total earth's stratosphere or 21 billionths of a microgram per cubic meter.

Safety factor

The ratio of SO_2 which may become particulate through chemical interaction is unknown at this time. The safety factor for the assumption of complete conversion to particulates is therefore also unknown. It should be noted however that the safety factor without considering the degree to which SO_2 becomes particulates, exceeds 300%. In other words, the analysis provided by the SCEP would apply to a world fleet of 1,500 aircraft more accurately than to the "standard world fleet" of 500 aircraft identified in the study.

Dispersion pattern

The chances of a uniform dispersion are small. Knowledge of particle dispersion in the stratosphere is somewhat limited. Only in recent years has serious study of such events been possible. Some relevant data is available from observations of the materials injected by the Mt. Agung volcano. Although the actual quantity of material placed in the stratosphere by this volcano is not known, the SCEP felt that observations of the particle history and their effects would be relevant. The group speculated that the combined particle emissions (carbon and sulphur) from the SST might peak to be similar to a "small Agung," perhaps even equal to it.

The SCEP based this comment on measurements of particulates in the stratosphere made by Junge (15) prior to the Agung eruption. His measures indicated a particle concentration of 12 parts per billion with the air in the stratosphere. This figure is contrasted with measurements taken by Cadle et al. (16) in 1969. Cadle's data indicated that the stratosphere contained 360 parts per billion; a 30 fold increase. The higher density was associated with the eruption of Mt. Agung although the measurements were taken several years after the eruption.

The world wide peak particle dispersion from the SST's was estimated by the SCEP to be 33 parts per billion. They cautioned that in the Northern hemisphere, this concentration could rise to 330 parts per billion on heavily used routes. The coincidence of the peak route particle estimate and the post Agung measurements led to the comparison of the SST to Mt. Agung.

The use of the comparison by the press turned out to be somewhat more dramatic than the SCEP intended. The following points will place some of these observations in perspective:

Volcanic eruptions are not the sole source of particles in the stratosphere. The earth's gravitational field draws in meteoric dust as though it were a vacuum cleaner. NASA (17) estimates that a total of 10^{22} particles, ranging in size from 1^{-14} gram up to 10 grams enter the atmosphere each day.

The data is inadequate to establish the size distribution of the trapped particles. The total weight, therefore can not be calculated. However, a conservative estimate can be made by selecting a particle size on the small end of the size range and assuming that all particles are this size.

If all were 10^{-12} grams, the total weight of the dust would be 10,000 tons per day. Granting this dust the same 18 month cycle used for the Agung debris and the SST particulates, the steady state total is 5.5×10^6 tons.

The ratio between this quantity of dust and the entire atmosphere of the earth is 1.2 parts in 1 billion. Evenly dispersed but retained at the constant level of 5.5×10^6 tons the ratio of dust to the stratospheric atmospheric becomes 7 parts per billion.

Again, an even dispersion is an unnatural, actually a statistically impossible event. The dust would be concentrated by the earth's magnetic field into patterns. Also it is pushed by the solar wind and also influenced by the lunar pull. Its entry to the air could hardly be in a uniform pattern. Once in the air it would be subject to the movements of the upper air and would be accumulated in some areas, thinned in others.

Whatever the irregularity of the distribution, the dust from space is widely dispersed Its pattern therefore resembles that of the particulates released from the SST far more than the single point insertion of a volcanic explosion.

Ratio of meteoric dust to the SST particulates

The SST particulates, listed on the SCEP assumptions, combine to a total per day of 380 tons. The 18 month total would be 2×10^5 tons.

The meteoric dust 18 month total is 5.5×10^6 tons.

$$\frac{5.5 \times 10^6}{2 \times 10^5} = 1 \text{ part in } 27.5$$

In other words the particulates from the SST constitute a steady state total of 1 part in 27.5 of the meteoric dust. The ratio to total dust, including volcanic is unknown. During an eruption and for several years following it, the ratio of SST particulates to dust from natural sources would be conservatively 1 to 1000 and a times far greater.

It would seem that the research to determine the effects of the SST particulates on climate or on the stratosphere will be difficult. The challenge will be in isolating the effect of this variable from the somewhat overpowering "noise" levels of natural phenomenon.

The Ozone Layer

Normal (molecular) oxygen (O_2) and nitrogen (N_2) are broken apart by sunlight in the upper atmosphere, approximately at the mesopause (60 miles altitude). The resulting oxygen and nitrogen atoms drift down, occasionally joining with other molecules.

Ozone (O_3) is formed when an atom of oxygen combines with a normal oxygen molecule, ($O + O_2$). Ozone appears throughout the atmosphere with its highest concentration at about 60,000 feet. It is unstable and readily destroyed by sunlight. Since the sunlight is less intense in the polar regions, the ozone concentration reaches about twice that found in the tropics.

Ozone is a rare gas. The amount present in the atmosphere is variable but averages around 5 parts in 10 million. When it is drawn down into the lower atmosphere by the cyclonic action of a high pressure area, it is quickly combined with other compounds.

Ozone is relatively opaque to about 25% of the ultra violet spectrum, the region between 2200 and 3000 angstroms (A). The ultra violet (U.V.) radiation in this range is harmful to life.

Mercury lamps will emit U.V. at 2537 A, close to the center of the ozone absorption band. These lamps are commonly used to kill air borne bacterial or to control organisms on or near the surface of perishable products in storage.

U.V. below 2200 A is absorbed by almost all atmospheric gasses. Most of the U.V. spectrum above 3000 A is absorbed only to a minor extent by the atmosphere but is less harmful to organisms.

Over any given point on Earth, seasonal variations in O_3 concentration average about 25%. Daily fluctuations over any single point on Earth are at least 10% on a given day.

Sunlight will break apart other molecules, even complex chemicals, reducing them first to ions or radicals, then finally to atoms. The rate of photo-dissociation is slow, however, as the reduction requires the absorption of considerable energy. Water is broken into atomic hydrogen (H) and an (OH) ion.

If water is dissociated in the presence of atomic oxygen (O) the free hydrogen atom may combine with the oxygen atom to form an additional (OH) ion. Atomic oxygen, which might have become ozone (if it had combined with O_2), is thus diverted to becoming part of an (OH) ion instead.

As pointed out earlier, most of the water received by the stratosphere is from natural sources. The water injected by the SST is a minor part of the total water cycled each day by the stratosphere. Almost all of the water entering the stratosphere is returned to the troposphere. To be dissociated, the water would have to be elevated beyond the stratosphere to a height near the mesopause (about 300,000 feet). The sunlight at this height is energetic enough to cause some photo-dissociation.

Over the past five years, the water normal to the stratosphere has increased by 50% of its former value. Ozone measurements, made by ESSA weather stations since 1962 [5] show no correlation or change in ozone density, associated with the higher levels of water vapor in the stratosphere.

However, it should also be noted that the most potent ozone destroyer is the band of solar energy absorbed by it and which also causes it to form. As ozone is destroyed by this energy, more is formed. If ozone should be decomposed by some other circumstances, the solar energy which would have been absorbed proceeds through the cleared space and simply causes more to form perhaps a few feet below.

The destruction of the ozone layer could occur if for some reason the solar output in the region between 2200 A and 3000 A was increased by a few orders of magnitude. This would cause a destruction of the ozone at a rate faster than it could reform. Short of this event, however, the destruction of the ozone layer from other causes is not a likely event.

The SCEP Analyses of the Ozone Question

The MIT sponsored study group re-examined depletion due to water vapor and concluded that the effects, if they could be detected at all, would be well within the day to day variability of ozone density. (17)

[5] Data obtained from ESSA.

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Mr. AIKEN. Mr. President, I could use 2 minutes.

Mr. PROXMIRE. Mr. President, I yield 2 minutes to the Senator from Vermont.

Mr. AIKEN. Mr. President, I am not opposed to continuing research on high speed and high altitude airplanes or even on planes to be flown in outer space.

This is important if we are to continue our lead in the world's aviation industry and keep many qualified people in our scientific community working.

However, we are faced with severe—even critical—problems in our domestic airline industry, particularly those lines which are serving the rural areas, such as those which serve Northern New England.

I feel that the $290 million proposed for continued Government financing of the SST could be better spent in insuring the continuance of necessary domestic airline service in the United States.

Once this job is done, then I would look more favorably on the request for the funds to continue the research and development work on the SST.

Development of SST may be a worthwhile goal—in fact, I believe it is—but for the time being I am more interested in seeing that adequate air transportation is provided between Vermont and New York, Washington, and other points in the United States.

Mr. President, this is simply a case of putting first things first. This was brought home to me rather dramatically recently when I had a call from one of my constituents in Northern Vermont who was going to Rochester, N.Y., and had to travel something like 160 or 170 miles to Albany, to get a plane for Rochester.

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

In the absence of our distinguished committee chairman, Senator STENNIS, who was unable to preside over the subcommittee hearings due to the press of the military authorization bill, I was privileged to serve as subcommittee chairman.

I want to say at the outset that in my experience in the Senate, I have rarely, if ever, seen a program which has been subjected to more scrutiny than that directed at the SST over the past many months.

I think this is as it should be. I am a firm supporter of the fundamental principle that a proper stewardship over the public purse requires that a thorough going investigation should be made of any and all proposed uses of the taxpayers' moneys. And, I daresay, that there has not been a more open and thorough debate both within and without the Congress than that which has attended this supersonic transport development program.

This principle of careful inquiry has been faithfully observed by the committee. The SST is not a new program, but in view of the concerns that have been voiced, the committee has reexamined the project in great detail. The report of the House Appropriations Committee, prepared earlier this year—the comments of the Department of Transportation on the separate views contained in that report—and the testimony and statements received by the committee—were all carefully reviewed. The committee also took cognizance of the report issued in August by the Subcommittee on Economy in Government of the Joint Economic Committee, as well as the differing views of the Department of Transportation. A broad array of experts was

heard from and, of course, the committee has been alert to the general public debate.

In sum, the SST has been the object of painstaking consideration by your committee.

The committee has considered the potential benefits of U.S. leadership in SST technology and sales. It is the conclusion of the committee that a program to develop a U.S. SST remains firmly in the national interest, and that the prototype program now in progress should be continued at the pace requested.

In the opinion of the committee, much of the criticism directed toward the SST, and many of the concerns that have been expressed relative to its effects, pertain solely to supersonic aircraft in large-scale, commercial service; and then only on a purely speculative and theoretical basis. On the facts available, interruption or termination of the prototype program for environmental impact reasons is unjustified.

In the judgment of the committee, it would be contrary to the best interests of the taxpayers for Congress to take any actions which would prematurely or unjustifiably jeopardize the nearly $800 million invested in SST research and development to date, and at the same time risk erosion of the aviation leadership which has long served the economic and technical interests of the United States.

I might add to that the letter we received this morning from the Department of Transportation totaling the cancellation costs if this project should not go forward, and that amount is in the neighborhood of $277.8 million.

Mr. President (Mr. BYRD of Virginia), I ask unanimous consent to have the letter printed at this point in the RECORD.

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

OFFICE OF THE SECRETARY
OF TRANSPORTATION,
Washington, D.C., December 2, 1970.

Hon. WARREN G. MAGNUSON,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MAGNUSON: The contract modifications for the Supersonic Transport Development Program for December were recently signed, and I believe you should be brought up to date on the obligations of the government should the program be terminated by the Congress this month.

Members of the Department of Transportation testified in August of this year that a F.Y. 1971 appropriation of approximately $160 million would be required to cover possible government liability if the SST program were cancelled prior to the 15 October recess. Since that time, of course, we have incurred additional program costs under the authority of the Joint Resolution which has allowed the program to proceed on schedule. Our current estimate of the minimum additional appropriations required in the event of program cancellation is $196.9 million. In addition to this amount, program termination could impose certain other possible legal and moral obligations on the Federal Government as indicated below.

The liability of the Federal Government in the event of program cancellation could be extensive. The government would be obligated to return to the SST Contractors their share of the development costs to date, for which Congress would have to appropriate funds. The Congress would also have to appropriate funds to cover the expenditures incurred since the beginning of this fiscal year under the Joint Resolution. Further, the Congress would also have to appropriate funds to cover termination costs, and, perhaps, to restore the nearly $59 million airlines have invested in the good faith that the prototype program would proceed to completion.

As mentioned above, the minimum F.Y. 1971 SST appropriation the Congress would have to approve to discharge the government's responsibilities is estimated to be $196.9 million. Additionally, if the government accepts a moral obligation to repay the $59 million the airlines have contributed to help defray development costs, the required appropriation would total $255.4 million. Not included in the foregoing would be the government's obligation to refund to the airlines $22.4 million on deposit in the Treasury for the reservation of SST delivery positions. Thus, program cancellation at this time could require a total Treasury outlay of as much as $277.8 million. Enclosed is a chart showing the breakdown of these figures.

It is obvious that we face a situation in which the costs to terminate the SST program are fast approaching the F.Y. 1971 amount being requested by the Administration for continuance of the program.

One further point is worth noting. Upon completion of the prototype program, the government's commitments to the manufacturers and the airlines will have been satisfied. Should we proceed to that point, and then for any reason the SST program does not proceed, the investments of the manufacturers and the airlines would not be refundable.

I should add that an additional and very real cost of any such termination at this time would be the loss of substantial benefits to the nation in jobs, exports, tax revenues, and recovery of the government's investment through royalties. The United States would also forfeit its role as world leader in commercial aviation.

The transportation systems of the 1980's will include supersonic transport aircraft, and I believe they should be those manufactrued in this country.

Sincerely,

W. M. MAGRUDER,
Director, SST Development.

SST PROGRAM TERMINATION COSTS

[In millions of dollars]

	Dec. 1, 1970	Jan. 1, 1971
Contractor shares	77.8	79.8
Additional appropriations required to cover continuing resolution	86.6	105.1
Estimated additional termination liability	10.0	10.0
Program office	2.0	2.0
Appropriations required	176.4	196.9
Plus airline escrow funds (Treasury)	22.4	22.4
Total minimum Treasury outlay	198.8	219.3
Plus airline R. & D. contribution [1]	58.5	58.5
Total Government commitment	257.3	277.8

[1] Although not legally binding, a possible moral refund obligation.

Mr. BIBLE. The figure for cancellation if this program should not go forward is pretty high in itself. It is well documented. I think it is authentic and accurate, and it must be taken into consideration as we move forward in the debate this afternoon.

This is not to say that the committee is unconcerned about deterioration of our world environment. The committee is deeply concerned. As stated in last year's report, the committee is not willing to buy aviation leadership at further cost to our environment. The committee heard considerable firsthand testimony from those who claim the SST will have a detrimental impact on the environment. However, the detailed questioning of witnesses—the record will bear this out—and exhaustive study of the material and testimony provided no factual evidence to the committee that the SST would have a harmful impact on the environment. The consensus is that opposition to the SST from an environmental standpoint is not based on established facts.

On the other hand, the committee recognizes that supersonic transport suggests questions concerning which there is not enough scientific information to say positively certain claims of possible harm to the environment are false. Nevertheless, one fact is clear. The funding recommended by the committee in this bill—I think this muse be emphasized over and over—is for the development of prototype aircraft, and no one, including the program's most vigorous opponents, has alleged that two prototype aircraft will have any adverse impact on the world's climate.

Because gaps remain in our scientific knowledge which prevent positive answers to certain concerns, the Department of Transportation has drawn up, in conjunction with the National Oceanic and Atmospheric Administration, NASA, and other agencies, a comprehensive environmental research program. This program, extending over the next several years, will yield answers to environmental questions before the time any decision must be made on production of the SST for commercial use. This program is useful since the answers to environmental concerns are needed regardless of the future of the U.S. SST. Military aircraft have been operating supersonically at extremely high altitudes for years without benefit of any specific effort to record their effect, if any, on the atmosphere. An additional $4.6 million is being recommended for inclusion in the transportation planning, research, and development line item of the Department of Transportation bill to further this effort in fiscal year 1971.

Questions raised about the SST impact on the environment include concern over sonic booms, noise, and possible effects on the climate.

Regarding sonic booms, attention and a positive response to these concerns need not await research. As emphasized in the report, the committee is intent upon protecting the public against the sonic boom, and has in mind legislation specifically prohibiting overland flights at boom-producing speeds. Until very recently, however, the Department of Transportation had been unwilling to press for such a bill—preferring instead to impose speed limitations by agency rule. Such an approach provides less protection because any such agency rule would be subject to change through administrative action. Legislation would provide more permanent protection.

I am pleased to be able to say that this problem has been resolved satisfactorily.

The Secretary of Transportation has advised the committee that in view of the committee's deep concern in this area, the Department now has no objection to a statutory prohibition of flights over populated areas at boom-producing speeds. And I am further pleased that just last evening the Senate passed by a unanimous vote S. 4547 to effectively regulate exposures to sonic booms, and airport noise.

A great deal has also been said and written creating concern over the noise of the SST engines. After much examination, the committee believes most reports are incorrect. Some are misleading. Reliable evidence indicates that after takeoff and on approach to the airport, the SST engines will actually be quieter than those of current 707 type jet aircraft. While on the takeoff roll, the sideline noise of the SST will exceed that of the subsonic jets, according to present calculations. However, with 8 years still available for research before commercial use, engine experts express great confidence that noise suppression techniques will be developed to reduce even this sideline noise on the airport. And S. 4547—passed by the Senate last evening—requires that production models of the SST comply with the noise regulations applicable to the new subsonic jet aircraft.

The committee heard many charges from witnesses that the SST might modify the climate. One witness expressed the thought that SST operations might decrease ozone in the atmosphere which in turn could increase harmful ultraviolet radiation on the earth's surface. Another witness speculated on the possibility of an increased cloud cover resulting from added water vapor which in turn could either lower the earth's temperature, thereby creating a new ice age, or raise the earth's temperature resulting in a melting of the polar ice. The committee found no responsible witness who could say with certainty or on the basis of scientific fact that SST operations would in fact modify or harm the world's climate. Rather, present information indicates that any detrimental impact on the atmosphere is unlikely. However, because of the uncertainties that still exist regarding photochemistry, circulation response, and natural variability of stratospheric properties, the Department of Transportation has initiated its interagency environmental research program to make certain all required answers become available prior to production of the SST.

The Department of Transportation has also formed two advisory committees on noise and environment. These are made up of outstanding scientists from both within and outside the Government who will monitor the progress of the environmental research program and advise the Department of additional areas needing investigation.

I want to emphasize again that the committee in no way deprecates the concerns that have been expressed over environmental factors. Where accurate scientific information is not available today, we need answers, and the path to such answers lies in continued research. The present SST prototype program is, I think, part and parcel of that research effort, and I repeat: No one has charged that this prototype program alone poses any environmental threat.

On the economic aspect of the SST program, the record supports the committee's conclusion that this project is essential to maintain U.S. leadership in the international aviation market. U.S. leadership in SST technology and sales promise substantial economic benefits, including an estimated favorable balance of trade effect of between $30 and $38 billion over the period 1978 to 1990.

In this connection, it is appropriate, I think, to reflect a bit on the future. It used to be that the United States had an exclusive hold on the international aircraft sales market. It was a particular American "plum," if you will.

To a large degree, we still hold this advantage today. Over 85 percent of the jet aircraft now flying in the free world have been built in this country.

However, the handwriting is on the wall. Like it or not, aviation is entering a new supersonic age, and we all know that without special vigilance and unless the Nation responds to the challenge, today's hero may well be tomorrow's "has-been."

There can be no standing still.

The fact that the United States now enjoys the dominant free world position in commercial aviation sales is no guarantee for the future. Serious challengers are already circling the track. The Nation cannot ignore the fact that the British, French, and Rusians hold a significant lead in the development of commercial supersonic transports. In contrast to our program to develop two prototype aircraft, the Russian TU–144 has been flying since December 1968, and the Concorde took to the air in March 1969. Both have exceeded mach 2 speeds. While these foreign aircraft have somewhat lesser performance capabilities than those planned for the U.S. SST, the time lead that both hold is enough to introduce second generation Concordes and TU–144's sufficiently advanced to compete directly with our SST. The committee was also advised that West Germany may join in the development and financing of an advanced Concorde. So, we have to read the signs of the times. Supersonic transports are going to be built—if not by the United States, they will be built by Europeans and Russians. It now appears that the foreign civil aviation industries are making a determined effort to compete with the United States for the world airline market in both the subsonic and supersonic aircraft field. I point this out not so much to demonstrate that the foreign competition is ahead of our own effort, but to indicate how they got there and to put this in perspective with regard to our own program.

We have not been sleeping—but it is important that our effort continue with an understanding of the competitive atmosphere in which it must go forward.

In both the Concorde and the TU–14 efforts, the programs are totally supported by the governments involved. In our case, we could say to our manufacturer—you go ahead and compete against the combined financial resources of those governments and if you cannot, then this country will just get out of the airplane business, because—and I say this on the testimony of the most knowledgeable people in this business—that is just what will happen if we do not go ahead.

Also, I want to point out that is not totally a Government program. The aviation industry is itself making a sizable investment in developing this airplane. The total investment by industry for only the development is projected to be some $381 million, which is roughly 30 percent of what the Government will invest.

Now let me move on and touch briefly on the way the Government will get its investment back as I know this is an area of concern to us all. I want to emphasize the fact that I am talking about an investment. This is at odds with some descriptions of the Government's participation in this program. Some have characterized it as being a "subsidy" which means a grant of money. This is not a grant. It is an investment. It is money that we are putting in with the complete understanding that the Government will get it back.

The contractual arrangements provide basically that the Government will receive a royalty on each airplane that is sold. This royalty is calculated in such a way that when the 300th airplane is sold, the Government will recover its entire investment—there are no "if's," "and's" or "but's" about this. The contracts provide for the Government's investment to be repaid.

Naturally, in these circumstances the question arises—will 300 airplanes be sold? There has been a lot of discussion about the market for this airplane being restricted because it would be operated at supersonic speeds only on long-haul over water routes. I can say that the market will be restricted to these routes because it is the stated policy of the Government not to operate the airplane at boom producing speeds over land.

The record before the subcommittee indicates that there is a market for at least 500 airplanes to be used only on over water routes. When 500 are sold, we will get back not only our investment but also a profit of $1 billion.

Mr. President, I have one additional point before concluding my remarks and this deals with the financing of the program after the development phase. The Government's participation—and the stated policy has been and continues to be—that the Government will participate only to the extent of financing the development of two prototypes to demonstrate the feasibility of the production airplane.

Following that, the program financing will shift to the private sector. The Government has no commitment either contractually or otherwise to participate beyond the development phase.

I hope these remarks will serve to show that the financial aspects of this program are not really as confusing as some might have been led to believe. As a member of the subcommittee which has heard the testimony on both sides and had the opportunity to observe and ques-

tion the witnesses, I submit that the financial arrangements are sound.

Personally, I will continue to support our position in this battle for continued U.S. leadership in international aviation. This appropriation is critically important to that objective.

This supersonic transport program must be continued if the United States is to retain its superiority and competitive position in international aviation.

I strongly urge the Senate to continue its support for this program.

Mr. President, without hesitation I recommend rejection of the Proxmire amendment.

But let me say this about my good friend from Wisconsin, that he is one of the most energetic, vigorous, and dynamic men I have ever met. When he gets hold of a project, he never lets go. He works hard and long hours. He has made many statements on this matter and I admire him for his sincerity, for his enthusiasm, and his effectiveness in the committee.

Although I disagree with him on this question which he has raised, I certainly do admire him not only as a workman but for his great sincerity of purpose.

I yield 10 minutes to the Senator from Mississippi.

The PRESIDING OFFICER (Mr. ALLEN). The Senator from Mississippi is recognized for 10 minutes.

Mr. STENNIS. Mr. President, I thank the Senator from Nevada, and again express my profound appreciation to him for what he has done in the hearings and in the handling of the bill.

Mr. President, this is about the 7th or 8th year that I have been into this matter of the SST, sometimes in extensive hearings. Even though I did not hear the testimony this year, I have given it special attention, because it seems that even though the SST has proved its case many, many times, in both Houses of Congress, it is still under severe attack.

I believe that two major points are involved. One is leadership. Are we really going to continue as a leader? We are a leader now, and we have been a leader in the whole world, in the development and production of civil aircraft. We have that leadership and have had it for years. I think it would be a tragic mistake of the largest magnitude and portending grave consequences for us should we surrender that leadership. I bottom my belief upon that proposition.

Furthermore, the fallout from our production of civil aircraft over the years and from our military research and development of military planes has been tremendous. That is one of the main reasons why we have maintained leadership in the field of civil aircraft. It is due to the great profit that comes from the research and actual development and production of military planes.

In the field of military aircraft, we had reached the point where we were not producing planes beyond the old B–52. We undertook the construction of B–70's, and the research upon that military plane provided fallout and benefit to the advantage of the SST. The B–70 was abandoned and not produced, but it is an excellent illustration of how much good can come from research, even if we did not follow through.

The next step forward in the development of the SST will be of tremendous benefit to the future big-bomber program that is now in its initial stages of research—the M–1, as some call it, or the B–1.

So our preeminence and our security are directly involved. That is one of the main reasons why I have always strongly supported this program and have not been disappointed with it so far. If we reject the recommendations for this money in this bill, I do not think there is any doubt that it will be the beginning of our loss of leadership. I just do not want to see that happen.

Mr. President, today the United States leads the world in the development and production of civil aircraft. With the exception of the Communist countries, passengers throughout the world travel within and beyond their own borders in aircraft designed by American industry, built by American labor and often financed by American capital. The American aircraft industry and its products are one of the primary means by which the preeminence of our technological and industrial capability are brought home to millions around the world.

With the SST, America can continue to hold its lead as the primary producer of the world's aircraft. A listing of those countries which have already paid deposits to guarantee early delivery of the U.S.–SST reads like a world atlas: Holland, Italy, Britain, France, Australia, Israel, Canada, Japan, Germany, Spain, Ireland, India, Pakistan—all of these countries, as well as our domestic and international airlines, have ordered 122 supersonic transports while the aircraft itself is still in the prototype stage.

If we were to reject the recommendation of the Committee on Appropriations and see our $700 million prior investment needlessly used, American leadership in civil aviation would come to an end. In the 1980's hundreds of millions of air travelers would choose between the British–French and Russian SST, on the one hand, or American subsonic aircraft on the other. Our aircraft, based on the technology of 1950 and 1960 would compete with foreign aircraft based on the evolving technology of the 1970's. The hard truth is that supersonic transport, whether we like it or not, is already a reality, and the only question that remains to be resolved is whether the planes are to be American or foreign.

Some people have argued that we should not make the radical departure from the free enterprise system that is involved in giving a federal subsidy to private industry. But this argument overlooks the fact that the federal money invested in the development of the prototype will be repaid to the Treasury, and, if a reasonable sales estimate is reached, there will actually be a billion dollars of government profit.

Moreover, we are misleading ourselves if we think that government support for the research and development of a civilian aircraft is anything new. I say again with emphasis that every American civilian aircraft has had its military counterpart and the same process is continuing to the great benefit of both through this project. The fact is that the considerable sums of money spent on the development of the military versions have a direct bearing on the development costs of the civilian ones. The subsidies may have been hidden in the past, but they have been there all along.

I want to emphasize, too, that the action taken just yesterday by the Senate in adopting the amendment restricting the speed of overland flights for the SST, as well as other control measures contained in the amendment, should meet in very large part the objections to this aircraft based upon environmental problems.

I have heard endless testimony about the supersonic boom. I have been concerned about it. But when we get down to the facts of life, we have hundreds of supersonic military planes flying every day across this country.

Although I do not have the number of planes in mind, it is not in any experimental stage. They have flown literally millions of miles over a period of years. That is where any appreciable injuries could result from the effects of the supersonic boom.

We have accomplished this without any law. It has just been by the use of self restraint of the military. They have held the consequences to the minimum. Fortunately, we are going to have regulations that will grow along with the plane.

I am sure that the problem will be largely solved on this matter as well as many of the other problems that we have to confront.

On this environmental matter, the chances of controlling it through recognizing the problems as they develop will be much greater if the American manufacturers are the ones who turn out the product. We can then make our laws conform gradually to the various phases of the problem as they develop.

I think it is unthinkable that we would withdraw—we, the great Nation that we are and leaders in so many things—from this civilian aircraft supremacy just because it would create a few additional problems or just because it is going to cost some money by way of subsidy.

There is nothing in the world new about that, as I have already pointed out. Of course, we pay full Federal dollars for military planes. We have benefited from that over all these years.

No manufacturer is able to make the kind of expenditures for all of this research and development that goes with a plane of this magnitude. I think that we are lucky to have such a plane. It is something that we should have. We are lucky to have such a plan that has been carried through more than one administration and through several years in Congress and several years of debate. The need for the plane grows rather than lessens.

I think we have already turned the corner. We ought to appropriate this money and let the program proceed. Ultimately it will justify itself in my opinion many times over.

Mr. President, I urge my colleagues to face the reality of the SST. It exists now. It has been successfully flown in two countries. The issue before us is whether we will command or abandon the field and, with it, a proud history of being the supplier of 85 percent of the free world's aircraft.

Mr. President, I yield the floor.

Mr. PROXMIRE. Mr. President, I yield 5 minutes to the Senator from Michigan.

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

Mr. GRIFFIN. Mr. President, it is my conclusion that the Federal program for further development of the SST should be grounded, at least temporarily.

There is no substantial justification for spending another $600 million—and possibly as much as $2 billion more—in taxpayers' money over the next few years for an airplane which would benefit only a tiny minority of the American public.

Although developers are now at the stage where they are ready to construct a prototype, we still cannot predict whether the supersonic transport would ever be even a limited economic success.

Meanwhile, estimates of the cost to the taxpayers of participation in the development of this airplane have grown from $750 million, as announced by President Kennedy in 1963, to as much as $1.3 billion at present.

And there are suggestions that still another $2 billion-plus in Federal subsidy may be required for the production stage. Surely, such ballooning cost estimates are reason enough to view further Federal funding with great skepticism.

Theoretically, the Federal Government would eventually be repaid for its share of the cost, including a 6-percent return on capital. This is based on the "iffy" assumption that at least 500 planes will be sold.

However, these projections are based on Federal support through the development stages only. Additional costs are likely to be generated by environmental problems, arising either from technical modifications or from restrictions on flight routes for SST's.

Furthermore, international airports would have to be expanded significantly in order to handle these air monsters. The $5 billion, 10-year airport development bill which Congress passed earlier this year, is desperately needed just to meet existing needs to accommodate existing aircraft.

Recent air tragedies underscore the urgent necessity to install costly traffic control systems at many additional airports. Better radar, improved local air service, more efficient passenger and baggage facilities are desperately needed—and these needs must rank higher than the SST on the Federal funding priority list.

The sharp drop in airline profits over the last 2 years further impinges on the fate of the SST. It is at least possible that the SST would produce additional financial woes instead of a bonanza for the airlines, already troubled with heavy financial commitments for the purchase of 747's.

There is reason to believe that addition of SST's to the 747 fleet will inevitably lead to higher prices for all air travel. In the words of Economist James Tobin:

> I . . . suspect that the only possible way SSTs can be made to appear to pay their own way is by jacking the fares on jumbo subsonic aircraft up far above cost.

If that were to happen, even the jet set would not benefit.

Even if the SST is an unqualified success and the Government recovers its entire investment, an additional economic problem is raised:

Where do we get the necessary fuel oil to supply a fleet of 500 SST's in light of the current crude oil shortages?

An editorial in the Grand Rapids Press of September 5 focuses on this issue, which has not received much public attention. As the editorial points out, it has been estimated that if we have 380 supersonic transport passenger planes in operation by 1980, the amount of crude oil necessary to supply the jet fuel for such a fleet would equal approximately one-third of this country's estimated annual oil consumption in 1980. The SST's fuel consumption is double that of the 747 per passenger-seat-mile.

The effect of this potential oil consumption on domestic energy reserves should be studied very carefully before further Federal support for this project is provided.

Mr. President, a realistic assessment of the potential economic benefits flowing from development of the SST necessarily involves three somewhat related factors.

First, I am deeply concerned about the fact that private industry has not been willing to accept the risks of financing further development of the SST—despite the fact that the taxpayers of the United States have already poured more than $700 million into this project. According to Nobel Prize-winning economist, Paul Samuelson, this should be "a warning that the project is an uneconomical one—and only if the strongest possible case is made in terms of public interest could one ever pay any attention to the proposal."

Second, the potential purchasers of the SST—that is, the airlines—appear now to be less enthusiastic about the opportunity to purchase SST's or Concordes.

Third, the competitive threat from another SST—the British-French Concorde—has not materialized. The Concorde has technical difficulties, even if it becomes operational, transatlantic passengers will probably pay 30 to 40 percent higher fares than would be the case of subsonic planes. At least, that is the prediction of the president of Transworld Airlines, Mr. F. C. Wiser.

Accordingly, the Concorde thus could be priced out of the American market.

But, Mr. President, the most compelling reason for my opposition to the pending request can be put very simply: At a time when the Federal Government is running in the red and the squeeze is on to allocate priorities, it is impossible for me to assign the SST a higher priority than some of the other pressing needs of our country.

Let us compare the request for $290 million for the SST to some other areas of funding.

Funding for research on thermal pollution this year is less than $5 million. Thermal pollution is the most important inhibiting factor in expansion of nuclear power generation, a critical program if this Nation is to meet its expanding needs for electricity and power.

Drug abuse is funded for only $154.7 million during the current fiscal year. This amount is intended to deal with all phases of the drug problem—including law enforcement, treatment and rehabilitation, education and training, and research. This is approximately half the amount requested in this fiscal year for the development of the SST.

The $150 million funded for education research in fiscal year 1971 is about half the budget request for the SST.

The recently passed law establishing a National Railroad Passenger Corporation provides for only $140 million in Federal grants and loan guarantees over the next 5 years for operation of a national rail passenger system. The sad condition of passenger service and the poor economic condition of the railroads are known to all. Substantial Federal assistance is required and the act setting up the Corporation provides for significant Federal control over all passenger service. Despite this broad undertaking by the Federal Government, the amount of Federal money involved over 5 years is considerably less than that requested for the SST for fiscal year 1971 alone.

These examples only scratch the surface of our domestic programs which demand immediate attention. The Congress and the President will be faced with hard budget choices in the next few years. Our main concern should be to see that the American taxpayer gets the maximum security and social returns on his tax dollar. The SST just does not measure up to this standard.

Of course, I am well aware of the administration's commitment to proceed with this program. President Nixon stated in September 1969 that the primary reason for this commitment was to enable "the United States to continue to lead the world in air transport." I am sympathetic with this objective.

But I do not believe that a failure today to appropriate additional Federal funds for this fiscal year will necessarily signal the end of American air transport leadership.

Six production models of the Concorde are already under construction, while the American SST will not be in commercial operation until 1978. Thus, it seems entirely appropriate to forego further Federal funding until the fate of the Concorde has been determined.

As the Christian Science Monitor recently editorialized—

> There is no need for hurry. If the Concorde falters, then arguments for speed in developing the SST dissolve.

At the same time we will have an opportunity to reassess the commitment of private industry to this project.

Mr. President, I believe it will be wise

if the Senate does not approve the $290 million requested for the SST. Accordingly, I intend to support the pending amendment.

Mr. MAGNUSON. Mr. President, I yield myself 2 minutes.

The Senator from Michigan said in a general way that the Concorde was having some trouble. I wish to call to the attention of the Senator an advertisement which appeared in the latest edition of U.S. News & World Report, the edition of November 23, 1970, in which the Concorde is advertised for sale. It states:

On November 4 the Concorde SST became the free world's first civil aircraft to fly at Mach 2. That's twice the speed of sound at Concorde's altitude, fast enough to get from New York to London in less than 3½ hours.

To make this possible, Rolls-Royce and the French engine firm SNECMA developed one of the largest turbojet engines in the world, the Olympus 593.

Now we know it works perfectly at Mach 2—just as it did when ambling along at a mere Mach 1.

What's more, Concorde's four Olympus engines will be clean. They'll be fitted with smokeless combustion chambers, like Rolls-Royce RB.211 and Viper engines. There'll be a vapor trail, of course, the same stuff clouds are made of. But no smoke. And surprisingly little engine noise.

Is that floundering? This advertisement will be in every magazine in the free world.

Mr. GRIFFIN. I am sure the Senator realizes that advertisements are not always based on fact.

Mr. MAGNUSON. They would not advertise something that is not correct. Because of the sophistication of those executives who would buy the plane, the advertisement would be thoroughly checked.

I agree with the advertisement. I do not think there is any reason to believe that the Concorde or the Russian TU–144 will not be commercially successful. Neil Armstrong said it was one of the finest planes he ever saw.

I yield to the Senator from California.

Mr. MURPHY. Mr. President, I rise to speak in favor of the plan to continue the research and development and the building of the purposed supersonic transport. I have listened patiently for a long time to the debate on this transport program and it seems to me that the unemployment figures and the consideration of the capable people who have devoted their lives to the development of our aerospace industry are getting short shrift. They are being forgotten. It seems that they are getting lost somewhere in the rhetoric.

I have listened to discussions of the economics involved and the comparison of flying the aircraft at 60,000 feet at a supersonic speed as compared to 20,000 feet at a subsonic speed. I have listened to the possible problems of route planning in order to avoid flying over land masses where sonic booms might cause discomfiture and damage. I have listened to instant experts from all over the country discuss the questions of efficiency, and the possibility of total loss of investment.

I have listened to people who had no experience whatever in the matter of aviation, avionics, or the economy. I have listened to the trusted testimony of true experts who have spent years in knowledgeable research and study to prepare for this program.

My support of the SST program has been consistent, and I am pleased to see some of the potential which it has to offer finally coming into fruition. I am speaking directly of the employment aspects of this program which have been treated so lightly in the past. I say "lightly" but perhaps "contemptuously" is a more apt description.

Let me point out what was said by Prof. Wassily Leontief of Harvard University, a so-called economics expert who is opposed to the program, about employment on this program. Speaking about the development and construction of these airplanes, he said the program will absorb, and here I quote, "Several hundred thousand years of skilled labor and huge amounts of other valuable economic resources. At a time when the shortage of such resources compels us to forego badly needed improvements in public health care, education, housing and mass transportation." I am afraid the good professor, like so many of his calling, deals too much in theory and in the dream world of the academy with all of its dialectics and dialogs and not enough in practical reality.

First of all, I wish to point out for the professor that badly needed improvements which look to tax revenues for their instigation must be weighed in light of the available resources versus their contribution to the overall public interest.

At this time I know of no improvement which is more urgently needed than is gainful employment of our unemployed which will create the tax revenues which will allow these other desirable improvements to be accomplished, and I challenge any economics experts or academician to change my priority position on that.

I would also point out to the distinguished professor that dollars alone will not solve the health care, housing, education, and transportation problems. I have listened for several years to the professorial pleas for more money in these areas when what is actually needed are new, practical plans, feasible, workable ideas, a new approach and a proper use of the available funds. I would hate to have to measure the number of taxpayers' dollars that, in my opinion, have been wasted because of the application of just more money to the old idea rather than finding a new idea. I have already suggested several adaptations of the scientific-industrial complex capabilities involved the aerospace industry to be used in the solution of these problems, to find new ways to do it, new ways for health care delivery. We have not improved since 1955. We merely took the same service for one segment of society and delivered it to another segment, at a much higher cost. Newer ways must be utilized.

Now with regard to the program's absorbing several hundred thousand years of skilled labor at a time when a shortage of such a resource appears imminent, I can only say I wish this were true. Possibly this professor or, for that matter, any of those who dismiss the employment aspects so glibly will come forward with the jobs which are so desperately needed at this particular time.

I know that California would welcome the opportunity to make available and here I hark back to the badly needed improvements previously mentioned—California would welcome the opportunity to make available healthy and well-educated, highly skilled employees to fill these jobs—I believe the very best in the world.

These are good, reliable, hard-working people who do not seek nor are they looking for any handouts. They are people who want to work—who want to support their families and have prepared themselves educationally as well as in other respects to do just that—people who have proved their capability in the past by putting men on the moon and bringing them back safely.

Now let me tell you what these people are not. They are not people who can feed their families on economic oatmeal for breakfast—economic soup for lunch—and top it all off with a delicious meal of economic theory for dinner.

They are people who have proved their capabilities. They are available and very anxious for the opportunity. And so this consideration does not completely turn on whether the plane can or cannot be built, whether it will cause sonic booms. There are economic considerations that go right into the homes of our citizens, and that is my concern today as I rise to speak in favor of the continuation of this plan.

In conclusion, let me say this. The SST program offers substantial as well as meaningful employment for some 150,000 people in this country—good, sincere, hard-working Americans such as I have already described. These jobs will either exist for our citizens or for the people of some foreign power. I want those jobs for Americans. We already exported far too many jobs. It turns out to be a luxury we cannot any longer afford.

For this and many other obvious reasons, I shall enthusiastically support the plan to go forward with the building of the supersonic transport, and I urge my colleagues in their consideration of this problem, in making up their minds as to whether or not to support this program—I beg them—to take a good hard look at the practical side. We need the program—we need the aircraft—we need those jobs.

If the British and the French and the Russians get a second generation supersonic aircraft, we will have lost our chance for all time. We cannot afford to wait any longer. In my mind it is in the best interests of our people and our Nation that this program go forward.

So I beg my colleagues, do not get lost in scientific considerations. Do not get lost in matters of ecology, speed, and routing. Think of the basic things that are needed now—badly needed—jobs for our capable workmen.

I thank my colleagues very much.

Mr. PROXMIRE. Mr. President, I yield 3 minutes to the Senator from Virginia (Mr. BYRD).

THE PROXMIRE AMENDMENT

Mr. BYRD of Virginia. Mr. President, I support the pending amendment offered by the distinguished Senator from Wisconsin, for himself, for Mr. BYRD of Virginia, Mr. COOK and Mr. PERCY. My position is not new. I took the same position as long ago as 5 years.

My concern about this matter of a supersonic transport is twofold: First, I do not think it is realistic to expect the taxpayers to finance 85 percent of the development costs of this aircraft. Were it a more reasonable ratio, I might take a different view. But most certainly the aircraft companies should put up more than 15 percent. My second concern is with the total overall cost in this period of high inflation.

The amount under consideration is $290 million, but that is only a part of the total program, which will be a minimum of $1.3 billion. It could run a great deal higher than that. While it may be a desirable program, I am not convinced that it is an essential one at the present time.

I support the position of the Senator from Wisconsin, I shall vote against the $290 million appropriation. I think Senator PROXMIRE has done an excellent job in developing facts in regard to the amendment which he has presented, and I support that amendment for the reasons I have just outlined.

Mr. PROXMIRE. Mr. President, will the Senator from Virginia yield?

Mr. BYRD of Virginia. I yield.

Mr. PROXMIRE. I wish to thank the Senator from Virginia for his speech, and I want to tell him that I think he has hit a very crucial part of the problem. The cost of developing this plan is very likely to be far more than $1.3 billion to the Federal Government because of the overrun problem. Once we get beyond that, there is every indication from the Department of Transportation itself that we are going to have to put in another billion dollars or so to help along on production. So it could be an extraordinarily expensive operation.

I think the Senator from Virginia has done a superb job—as fine as any Senator since I have been here—in fighting wasteful expenditures and insisting on priorities which makes sense.

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

In the first place, there literally is no evidence about any overrun on this project. The Senator from Wisconsin keeps talking about it, but it just does not exist.

Any project may have rising costs because of inflation, but in this case it is not true. Everyone says, including General Electric, the subcontractors of Boeing, and Boeing itself, that they do not feel that they need to go over the $1.3 billion. There is no evidence at all about an overrun.

Mr. PROXMIRE. Mr. President, will the Senator yield at that point?

Mr. MAGNUSON. No, just a minute. I want to finish. The Senator has already talked a long, long time.

The Senator from Virginia talks about the taxpayers and public money. But no one mentions that there is a payback provision in this contract. It is a little like when we started to build dams and public work projects they all have a payback provision. They could not be financed by any one individual, any one county, or any private utility, so, as in the case of the Grand Coulee Dam, for instance, the Government furnished the money to build the job, and we were paid back with 3-percent interest. In those days 3-percent interest was fairly decent; today, it may not be. But there was a payback provision.

In this case, all the airlines and everyone else agreed that they would start with a royalty of 5 percent and pay the Government back, because it was too big a project for any company to take on by itself. In fact, as I said yesterday, it was too big a job in Europe for even one country to take on; they had to put two together, and now they may have a third one, West Germany, in a possible consortium to build the second generation Concorde. That is, of course, for the second generation; these things take years.

Mr. JACKSON. Mr. President, will the Senator yield at that point?

Mr. MAGNUSON. Yes.

Mr. JACKSON. Is it not a fact that if this program is terminated, a letter from Mr. Magruder which is on every Senator's desk, dated December 2, on the second page, states that:

> The program cancellation at this time could require a total Treasury outlay of as much as $277.8 million.

Mr. MAGNUSON. Yes. I shall put the letter in the RECORD.

We are talking about a $290 million appropriation—could I get the attention of the Senator from Wisconsin for a minute? The Senator from Maine, too. A $290 million appropriation, and if it were canceled, we would have to appropriate $277 million.

Mr. PROXMIRE. Will the Senator permit us to answer, or permit us to ask a question, or does he prefer not to deal with these things point by point?

Mr. MAGNUSON. I have the floor, yes. I want to put this in the RECORD. We are talking about priorities.

No one understands priorities and the social and welfare needs of the Nation better than the Senator from Washington. I have sat on the Appropriations Committees for years, and have tried to do a good job. It is a hoax to say to people that because you cancel this project, the money is going to end up being spent on social welfare programs.

In the first place, if we cancel it, we are going to have to appropriate $277 million right now, in the next supplemental. Let us get this straight right now.

Now, that has nothing to do with whether we should cancel it or not; but Senators ought to know what we are getting into if we vote for Senator PROXMIRE.

I want to put in the RECORD at this point the letter and the up to date figures on what would be the Federal obligation if this program were not carried forward.

Mr. JACKSON. Mr. President, will the Senator yield further on that same point?

Mr. MAGNUSON. Yes.

Mr. JACKSON. Is it not a fact that if this program is not completed, that is, the contract calling for two prototypes—and that is all that is involved here; we are not talking about a production program, but only a research and development program—if it did turn out that the two prototypes are not suitable for production purposes, and if it should turn out, in that connection, that the law is not complied with as we passed it yesterday, is it not true that the prime contractors and those associated with the project would lose all the money they have put in it?

Mr. MAGNUSON. Every bit.

The PRESIDING OFFICER. The Senator's time has expired.

Mr. MAGNUSON. I yield myself 5 more minutes, or such time as I need.

Mr. JACKSON. And in that case, as I understand it, the amount involved exceeds $200 million by a rather wide margin, for the one company.

Mr. MAGNUSON. By quite a wide margin; and there are taxes involved here, if they do go on with it, of $10.5 billion, and the balance of payments runs $6 billion one way or $6 billion the other way.

The Concorde is now up for sale, and the Russians have sold 4 to the Japanese, as I understand, and we are just out of it. This is a little like our merchant marine; we had the impetus after World War II, we lost it, and we never got it back. We are still struggling.

As to the royalties, there is no suggestion—every suggestion, every program, all the commissions that have studied this matter have agreed that the royalties would be paid back to the Government as soon as they fly. The Treasury investment would exceed the investment of $1 billion, of which $728 million, I believe, is already in this project.

This is nothing new; we have done it for all kinds of things. So I just want to point out, surely, it is a loan, but we have loaned a lot of money around the United States to develop things, to aid transportation, to aid our environment, to aid our rivers and harbors—hydroelectric projects and everything else. We spent more than this amount of money in the first few years of our air transport system just on subsidies alone, to keep it moving so they could buy the airplanes; otherwise, we would have had to subsidize the manufacturers, if they had not been under subsidies.

We have done it for the railroads, inland waterways—we have probably invested close to $8 billion in locks in inland waterways, so that we could have inland waterway transportation. This is not paid back, but it is a loan.

I just wanted that clear; and to be real up to date, I ask unanimous consent to have printed in the RECORD, from the Office of the Secretary, certified by the Treasury, the figures that show that this is what we would have to do if the contract was canceled, and it will add up, on January 1, 1971, to $277.8 million.

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

Mr. MAGNUSON. Yes.

Mr. BIBLE. I have no objection to that

being put in the RECORD, but I put it in myself earlier.

Mr. MAGNUSON. All right, then, it is already in.

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

Mr. MAGNUSON. I ask unanimous consent to put in the RECORD also a letter dated December 2, 1970, from the Airport Operators Council. These are the people that operate the airports. They strongly endorse this program, now that we have provided the assurance of lower noise levels in the bill passed yesterday. I do not know whether this has been put in the RECORD or not; but I think once in a while someone ought to mention that this is only a loan. It is a loan to keep our American air transport industry moving forward. If we lose it now, we will never get it back.

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

DECEMBER 2, 1970.

Re SST Appropriation—fiscal year 1971.
HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
United States Senate,
Washington, D.C.

DEAR SENATOR MAGNUSON: The Airport Operators Council International (AOCI) fully supports your amendment to S. 4547, accepted by the Senate this afternoon, which provides assurances that the U.S. SST's aircraft noise levels will not exceed those of new subsonic jet aircraft.

As offered in the Senate, your amendment adds a new Subsection (i) to S. 4547 as reported out of the Senate Commerce Committee as follows:

"Subsection (i)

The Department of Transportation shall modify its contracts with the contractors for the civil supersonic transport development program to provide that the contracts will not be satisfactorily completed until the contractors demonstrate that all production models of the prototype can operate in compliance with appendix C of Part 36 of the Federal Aviation Regulations now restricting takeoff, approach and sideline noise created by new subsonic jet aircraft as in effect on the date of enactment of this subsection."

In our earlier and widely reported statements on the SST appropriation, we stated our support for the development of an *environmentally-sound SST*. To assure that this objective would be met, AOCI, representing all the communities in the United States which are likely candidates to receive service from the first-generation SST, stated that the pending $290 million SST appropriation for FY '71 should be approved by the Senate only if there were a requirement that all production models of the aircraft meet the same noise standards now established in Appendix C of Part 36 of the Federal Aviation Regulations for subsonic aircraft and with the same trade-off provisions.

The amendment to S. 4547 adopted by the Senate today satisfies the airport operator's SST aircraft noise concern. Thus, we fully support action by the Senate to appropriate the full $290 million SST appropriation for FY '71. And, with the approval of this new statutory provision, AOCI can find no basis for any vote against the SST appropriation because of the aircraft's noise effect on communities.

Further, Congressional action to set definitive noise standards for SST operation will provide an additional impetus for SST aircraft produced by other nations to meet the same noise restrictions. Airport operators will be unable to convince their communities that service by any SST aircraft should be permitted which exceeds limits which the U.S. SST will be required to meet.

We are most appreciative of your continuing efforts to support the development of new technologically advanced aircraft which are also environmentally compatible with existing airports and their adjacent communities.

Sincerely,

HOMER B. ANDERSON,
President.

Mr. PERCY. Mr. President, will the Senator yield at that point?

Mr. MAGNUSON. I yield.

Mr. PERCY. I could not possibly accept the Senator's contention that this is a loan in any conventional sense. There is not a banker in the world today who would accept a loan on this basis. In fact, as I said yesterday, I would be quite willing to introduce legislation to remove the airlines' whole obligation to repay the Government, in order to get the Government out of this project. Even on this basis, there is not a single banker who would accept the risk.

Mr. MAGNUSON. Well, there would not have been a banker who would have floated the bonds for the Grand Coulee Dam, either.

Mr. PERCY. I know, but we have made it a matter of national policy for 200 years in this country that such projects as the Grand Coulee Dam are public projects.

Mr. MAGNUSON. All right; you people probably interpret loans differently but I firmly disagree.

Mr. PERCY. A loan implies a payback.

Mr. MAGNUSON. Nobody mentions that we are going to get the money back. If that is not a loan, I do not know what is a loan.

Mr. PROXMIRE. Will the Senator yield, for just a comment on this?

Mr. BIBLE. And then will the Senator yield to me?

Mr. MAGNUSON. No, I have the floor. There is no use arguing; I just want to point out that every consideration here, and every contract, involves a pay-back to the Government. Does the Senator agree?

The PRESIDING OFFICER (Mr. BELLMON). The time of the Senator has expired.

Who yields time?

Mr. PROXMIRE. Mr. President—

Mr. MAGNUSON. I have the floor.

I ask for 2 additional minutes.

Mr. BIBLE. I yield 2 minutes to the Senator from Washington.

Mr. President, I hope the time taken up with these interruptions is divided as to the Senator who is asking the question and the Senator who is answering them. We have approximately 16 minutes remaining, and the other side has 74.

I yield 2 minutes to the Senator from Washington.

Mr. MAGNUSON. Mr. President, the Senate has heard extensive debate on the civil supersonic aircraft—SST—development program. The Appropriations Committee recommends completion of the prototype development program. A decision to halt funding of the SST program would mean the loss of all of the $708.4 million appropriated to date plus $277.8 million in costs associated with termination. This does not include the reimbursement of the dollars contributed by the airlines for which a moral obligation of reimbursement by the Government may exceed $58.5 million.

The age of commercial supersonic air travel is here. Other nations are already well into the testing phases of commercial supersonic aircraft. The British-French Concorde has already flown at Mach 2. The United States has no real alternative to that of proceeding with the construction and flight testing of the two SST prototypes. We must maintain our capability for production of a U.S. SST for delivery to airlines in the latter part of this decade. Failure to do so would result in irretrievable losses in world aviation leadership, aviation industry employment, and exports of civil aircraft, one of the few remaining positive balance of trade accounts.

United States exports of commercial aircraft have shown a strong positive trade balance over the past 10 years in the U.S./Foreign Trade Exchange. Failure of the United States to enter the SST market would result in a total unfavorable balance of trade effect in the aircraft account which the administration conservatively estimates at $22 billion but which could run as high as $45.6 billion between 1978 and 1990.

The SST program is not a Government subsidy. In 1961 the U.S. Government concluded that it was essential to develop a commercial supersonic transport. Accordingly, the Government sponsored a competition for manufacturers to determine who would build the airframe and the engines. The U.S. Government has remained a partner, along with the airlines and the manufacturers, and has a contractual obligation to complete the prototype program. The Government is involved because of the magnitude of the funding required, as are the British, French, and Soviet Governments in the Concorde and TU–144 programs. However, the U.S. program is an investment shared by the manufacturers, airlines, and the Government. The Government's investment will be fully returned through royalties on aircraft sales by the sale of the 300th airplane. A conservative market forecast for sales of U.S. SST's is 500 aircraft; by the sale of the 500th aircraft the Government will recover in royalties every dollar of its investment plus an additional billion dollars. In addition to the royalty payments, it is estimated that, by 1990, the Government will also receive $6 to $7 billion in corporate and personal taxes as a result of SST production.

Concern has been expressed by some that the SST could have an adverse effect upon our environment. The Appropriations Committee, of which I am a member, has firmly taken the position that we will not "buy aviation leadership at further cost to our environment." Environmental questions were explored thoroughly in our hearings and a number of witnesses testified on these matters. There does not appear to be any evidence or factual substantiation that the SST will have a harmful effect on the environment. The charge is made that the

SST will greatly pollute the atmosphere. Yet, jet aircraft provides a cleaner mode of transportation per passenger mile of travel than any other mode of mass transportation.

The theory has been postulated that the SST will alter the world's climate by introduction of water vapor or particulants into the upper atmosphere, or that a possible alternation of ozone content in the upper atmosphere will increase ultraviolent radiation at the earth's surface to hazardous levels. The experts quoted by the critics who raise these points admit that these conclusions are mere speculation, unsubstantiated by any factual evidence.

All available scientific data from military supersonic flights, which total over 500,000 hours of supersonic flight, fails to substantiate the speculation of the SST critics. It is admitted by all, including the opponents of the SST, that the development and flight of the two prototype SST aircraft will not have any significant impact on the environment. Despite the lack of evidence that the SST will have a detrimental impact on the environment, the DOT has formed an interagency environmental research program as well as a committee of many of the foremost environmental experts in the country to make certain that all questions regarding possible adverse environmental effects are answered prior to mass production of the SST.

Aircraft flying at speds in excess of sound create sonic booms. The Government's policy, however, is that the U.S. SST will not be allowed to fly over land at speeds or conditions that would cause a sonic boom to reach the ground. Just yesterday the Senate passed S. 4547, the sonic boom bill, which would prohibit faster-than-sound airliners flights over U.S. territory and it would also restrict airport noise levels made by the SST. This bill would prevent either U.S. or foreign-made aircraft from overland flights over U.S. territory. The same ban was proposed by the Federal Aviation Administration, but now the Senate has written it into law.

The sonic boom bill also requires the Transportation Department to modify its contract with the Boeing Co. To provide that the plane will be canceled unless its prototype models comply with current FAA regulations restricting takeoff, approach, and "sideline" noise created by the SST.

I feel that this is a strong guarantee to those environmentalists who fear that persistent sonic booms and unreasonable airport noise created by the SST would not be prevented. Some critics also feel that economic demand will require supersonic flights over land. The passage of S. 4547 would ban these overland flights, and such flight would not have been needed in any case to make the SST economically successful.

Concern has been raised over the question of emission from the SST. This problem, however, has been covered under the Air Quality Control Act which was passed earlier this year by the Senate. Regulations regarding aircraft emission are being set by the Department of Health, Education, and Welfare.

Similar misunderstandings exist with respect to aircraft noise. The amount of noise associated with the SST has been incorrectly overstated by many of the program's opponents. Aircraft takeoff and approach noise is the type of noise about which people who live in communities adjacent to airports complain. The community noise level from an SST will be less than that of existing commercial jets. The "sideline" noise of the SST, which is confined almost entirely to the airport, is anticipated to be about equal to the noise made by the present jets and the manufacturers are working diligently to insure that goal.

Production of the U.S. SST will bring direct employment to 50,000 workers in American industry over a 15-year period. In addition, 100,000 jobs will be created as a secondary effect of the direct jobs.

In addition to the future effect of the production SST program on employment and revenue levels, the current SST prototype program has an immediate favorable effect on employment in U.S. industry. This effect—20,000 of the direct labor force working on the prototype program—will help stabilize employment at a time when the aviation industry has been following a marked downward trend since mid-1968.

I want to suggest something else: This has nothing to do with the merits or demerits of the supersonic transport. But I have another reason for this. Almost 100,000 people are walking the streets in two counties in Washington, and everybody, including the Federal Government, is trying to find jobs for them. I do not know what better thing we can do than to put them back to work on something that is going to be worthwhile for the future of America.

This is a personal matter. It is pretty serious. It just happens that situation exists in my State. We do not have a lot of jobs involved. We have only half of the contract, and approximately 78 percent of that is going to be done by subcontractors. But every job counts out in my Washington today.

I want to point out that I have a particular reason for getting people back to work, doing something good for the future of the United States.

Mr. PROXMIRE. Mr. President, I yield myself 2 minutes, and then I will yield to the Senator from Maine and the Senator from Alabama.

The Senator from Washington said that there have been no overruns on this program. There have been overruns. There is an overrun now of $57 million, which was testified to by the Department of Transportation in the hearings before the Joint Economic Committee.

In addition, we know that these programs rarely have overruns in the research and development stage. That comes in production. There is every indication that there will be an overrun, because they are using brandnew, exotic metal; and the experience has been consistently in production that when you get into a new technology, you have adjustments and changes, and they result in overruns.

The Senator from Washington talked about the termination settlement of $270 million. Take the amount of money that has already been spent in this fiscal year, because we are part way through it, add to that the $85 or $95 million required under the contract, and they come up with something that they argue is close to $230 million, $240 million, or $250 million. The fact is that if we go ahead with it this year, when they come in with the supersonic transport next year, it will be the same story. They will say, "Here it is October or November 1971. The termination costs are going to be $250 million. You might as well go ahead with it."

If we are going to stop the SST, the time to stop it is now. Next year, it will cost that much more.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. PROXMIRE. I yield myself 2 additional minutes.

Mr. President, so far as payback is concerned, they say this is only a loan. As the Senator from Illinois pointed out, this is a very peculiar loan, indeed. This is the kind of loan in which you do not even get your money back if it works out. All the risk is on the Federal Government. I should not say all the risk—90 percent of it. The Federal Government will put in 85 to 90 percent of the money. If this does not work out—as I pointed out earlier, there are many contingencies under which it would not—the Federal Government loses it. If this does work out, however, the Federal Government can get back, at most, what it has put in, plus 6 percent interest; and the Federal Government has to pay 7 or 8 percent interest for its money now. So there is no way in which the taxpayer can come out whole on this program.

It is a subsidy, with virtually all the risk taken by the Federal Government, and with the Federal Government in a position not to benefit even if it works out satisfactorily. Under almost all circumstances, the producer and the airlines benefit, because even if only 139 of these planes are produced—as Dr. John Walgreen predicts would happen—the Federal Government will lose all its money and the manufacturers make $500 million.

Mr. President, I yield 10 minutes to the Senator from Maine.

Mr. MUSKIE. I thank the distinguished Senator from Wisconsin.

Mr. President, there has been a great deal of debate in Congress and in the country as to whether we should proceed at all with the construction of a supersonic transport. I am not sure that I can add anything to that debate. Yet, I think the situation is so serious that it is important to emphasize the elements of that debate.

The administration says that we should proceed now, and that Congress should appropriate another $290 million for two prototype aircraft.

In my judgment, the administration is mistaken.

Almost 2 years ago, President Nixon appointed an ad hoc committee to review the supersonic transport program.

The members of that committee were members of this administration.

They include Under Secretaries of

Commerce; of Health, Education, and Welfare; of the Interior; of State; of the Treasury.

They include officials of the Defense Department, the Justice Department the Labor Department, the Council of Economic Advisers, the National Aeronautics and Space Administration.

They included the President's own science adviser.

They heard the testimony of witnesses, both in favor of the SST and against it.

And they submitted a report to the President which was clear, comprehensive, and straightforward—a report which the President chose not to publicize. We have had access to it only because it was leaked.

That report is most instructive.

It said:

If the U.S. overall balance of payments is considered, there is substantial reason for *delay* in proceeding to the next stage of the SST project—prototype production.

It said:

The record to date (as to whether an SST can be built in the given time that will meet the specifications of being efficient, safe and economical) is not completely reassuring.

It said:

Supersonic transport has the potential for intensifying hazards to the passengers and crew, and for causing significant further deterioration in the environment for people on the ground . . .

That is what the report said, among other things.

How did the President respond to these warnings?

Apparently, by ignoring them.

For none of the uncertainties which the President's hand-picked committee reported in March 1969 has since been resolved.

The committee concluded that the noise produced by SST operations would be "intolerable" to a "very high percentage of the exposed population."

Yet, no measurable progress has been made since the committee met—on reducing the level of that noise.

The committee found that the introduction of water vapor into the stratosphere as a result of SST flights might affect our atmosphere adversely.

Sufficient research has not been conducted—since the committe met—to assess these risks more accurately.

The committee emphasized that "there is an urgent need to carefully evaluate the inherent operational and environmental hazards that will be encountered while accelerating from zero to Mach 3 and cruising at supersonic speeds in a hostile environment."

Has that evaluation been made since the committee met? It has not. And we do not yet know the extent of the hazards which may exist.

These are the questions which the administration should answer—and answer fully—before Congress appropriates another $290 million.

Mr. PROXMIRE. Mr. President, will the Senator from Maine yield at that point?

Mr. MUSKIE. I yield.

Mr. PROXMIRE. This is the first time in the past few days that the ad hoc committee's report has been brought into this debate. I think it is most significant that it has, because this was a committee appointed by President Nixon and he selected those most competent to give him information as to the impact of the SST in various areas. They were experts.

As the Senator has pointed out so well here, the answer was just overwhelming. It was complete and clear, that the SST was not worth the millions in additional money that would be required.

Virtually with no exception, the Council of Economic Advisers, the Treasury Department, the Office of Science and Technology, the Labor Department—all agreed that this was not the way to spend the money.

I think the fact that the Senator from Maine has brought this out is very useful because it has escaped our attention and we have not got back to that inquiry, which was a year ago and was probably the most comprehensive inquiry made on the subject of the SST.

Mr. MUSKIE. May I say that I referred to the report for another reason. As the Senator knows, he and I have been undertaking to get from the administration, especially from the environmental agencies, their current evaluation of the environmental risks associated with this project. The question arose in the hearings on the conference with Mr. Ruckelshaus as the Administrator of the new Environmental Protection Agency. The Senator and I joined in a letter to Secretary Volpe of the Department of Transportation, requesting that those reports of those evaluations, which we understand have been made, be made available to the House and Senate while this debate is in progress.

We have received no such reports. We have received no indication of cooperation. For some reason, the administration does not want us to have those evaluations to influence the Senate at this point in this debate.

May I say to the Senator——

Mr. PROXMIRE. Along that line——

Mr. MUSKIE. I have received evidence today, which is revealing, as to why they do not want us to have those evaluations. It is because those evaluations concern the very warnings, the very questions which were raised by the President's ad hoc committee in the report to which I have already referred this afternoon.

I do not know whether I should be reading from these documents, as I do not want to prejudice my sources of information. But let me read an excerpt from one, on the noise factor—and this is an evaluation made in November of this year, 1970:

There is recognition in the Nation that the SST may generate more severe sideline noise relative to that currently produced by four-engined subsonic jet transports. Noise data filed in an FAA report suggests a three- to five-fold increase in the perceived noises of SST sideline sounds over that of conventional jet aircraft now in service.

Mr. MURPHY. Mr. President, will the Senator from Maine yield at that point?

Mr. MUSKIE. Mr. President, this report goes on beyond that, to suggest——

Mr. MURPHY. Mr. President, will the Senator from Maine yield for a question?

Mr. MUSKIE. I will be happy to yield to the Senator in a moment. Let me suggest that the standards now applicable to subsonic aircraft may be compromised in the interests of meeting the degree of technological problems faced by the SST in meeting such standards, and that this is why these environmental evaluations are not being made available to the Senate during the course of this debate.

Now I am happy to yield to the Senator from California.

Mr. MURPHY. I thank the Senator.

Mr. President, I wonder whether the Senator was apprised of the information given to this body yesterday by the Senator from Arizona (Mr. GOLDWATER), when the same question was raised about the sideline noise, when he pointed out that it seemed impossible to know what the sideline noise would be inasmuch as the engines have not even been built yet.

Was the Senator aware of that?

Mr. MUSKIE. There have been supersonic engines built——

Mr. MURPHY. Oh, yes.

Mr. MUSKIE. I will get to that point in my prepared remarks in a moment. The report has given us evidence upon which to raise these questions about sideline noise. I am not saying to the Senator from California what the answers to the questions are. I am raising the questions. I am saying to the Senator and to the Senate that these questions should be answered before this project goes forward. The Senator from California is therefore supporting my own argument by what he has just said.

Mr. MURPHY. If the Senator will yield further, it is my understanding that the Senator from Maine said he was reading from some report which he hesitated as to whether it should be read. The basis of the report I do not know, but as I understood it, it stated that the sideline noises would be unacceptable—I am paraphrasing that.

Mr. MUSKIE. May I say to the Senator from California that I want him to understand the basis of the question to which he is responding. No. 1, this information is available to the executive branch, which is your party. It is available to others—to your President—he is my President, too [laughter] but this information is available. The Senator does not have to take my word for what is in the report. It is available if the administration chooses to make it available.

Mr. MURPHY. I am not questioning its availability——

Mr. MUSKIE. This report raises these questions. It does not answer them.

Mr. MURPHY. I merely pointed out, if the distinguished Senator from Maine would bear with me——

Mr. MUSKIE. My time is limited, may I say to the Senator. I would be happy to answer any questions but I cannot give the Senator my time to make a speech.

Mr. MURPHY. The Senator has not answered the question.

Mr. MUSKIE. I have tried to, but the Senator prolongs his question into a speech.

Mr. MURPHY. The Senator has made his point. I merely asked him if he was aware of the information given to this body yesterday by the Senator from Arizona (Mr. GOLDWATER) in direct dialog.

Mr. MUSKIE. I have tried to follow what the Senator was asking.

Mr. MURPHY. The Senator has not yet answered the question. He has made some statements about whether information is available. If it is, I do not know why he was so hesitant as to whether it should be read at this point.

Mr. MUSKIE. I will say this: I have had some indication, as a result of activities in the Department of the Interior recently, of the disciplinary measures that may be taken in the executive branch against employees who do not want to meet the pleasure of the administration. This information has been made available to Congress, not officially, but it has been leaked. I do not intend to prejudice the "leakor" this afternoon. [Laughter.]

With all respect to the Senator from California, I am now going to proceed with my prepared statement. I am always interested in engaging in colloquy with the Senator from California, but I would like to finish my statement now so that I do not consume too much of the time available to this side on this issue. If there is time left over, I will be glad to get back to the Senator's question .

Mr. MURPHY. I point out that the Senator has not yet answered the question.

Mr. MUSKIE. If the question is whether I have read every word in the CONGRESSIONAL RECORD on this debate, the answer is "No; I have not read it all." That would take more time than any Senator has these days.

Mr. MURPHY. Mr. President, will the Senator from Maine yield?

The PRESIDING OFFICER (Mr. BELLMON). The Senator declines to yield further.

Mr. MUSKIE. It is impossible for me to read every word in the RECORD. I am aware of the arguments, however, plus the statements made by the Senator from Arizona (Mr. GOLDWATER). I am not convinced by them. I have no particular position, information, or knowledge on which to answer the question as to what will be the sideline noise, or what will be its effect on health. It is precisely because I do not have that answer, not because some particular answer is urged, but because we do not have that answer, that I believe we should not go forward with this project. That is my answer to the question of the Senator from California.

Mr. MAGNUSON. Mr. President, will the Senator from Maine yield on my time?

Mr. MUSKIE. I yield.

Mr. BIBLE. Mr. President, I yield the Senator 1 minute for the purpose of answering the question.

The PRESIDING OFFICER. The Senator from Washington is recognized for 1 minute.

Mr. MAGNUSON. Mr. President, we passed a bill yesterday on which I will stake my reputation as a Senator. We have defined allowable sideline noise to be that noise is now allowable for 707's, 747's, or the DC-9's. That is going to be the law of the land.

Mr. MUSKIE. Mr. President, may I answer that on the Senator's time?

Mr. BIBLE. The Senator can answer it on his own time.

Mr. MUSKIE. Then I will not answer it.

Mr. MAGNUSON. Was the Senator aware of the amendment?

Mr. MUSKIE. I also know that laws can be repealed. The answer to the argument made a while ago to the effect that another reason why we ought to spend this $290 million is that we have already spent so many millions of dollars. If we spend this additional $290 million and we cannot meet the test established in the law passed yesterday, the economic pressure will be on again. The argument will be made that we have already spent an additional $290 million; so, we should repeal that law or modify it to reflect the economic or technological limitations of the SST. That is what we want to avoid, I say to the distinguished Senator from Washington.

Mr. President, now, if I may, I will resume my speech.

The administration seems to be operating on the assumption that it must not prove anything at all.

It argues that this is not the time to answer questions about the possible adverse effects of an SST, because we would not be committed to its production—we would be committed only to building prototypes.

It has been argued that the development of two prototype supersonic transports is necessary to learn about the environmental aspects of SST operation. Standing alone, the argument has plausibility. Considered in context, it is wholly without foundation.

Since the early 1950's the United States has been engaged in the development and production of a large number of different types of aircraft with supersonic capability. In fact, almost all Air Force and Navy combat aircraft have supersonic capability. And these are not just small aircraft but have included the world's only operational supersonic bomber—the B-58. Although the Air Force has recently withdrawn the B-58 from active service, several hundred were produced and it formed an essential component of SAC for many years.

In addition, the Department of Defense has developed and accumulated flight experience on a huge prototype supersonic bomber—the B-70. Many other aircraft could, of course, be mentioned: the infamous TFX or F-111, the Phantom, the entire F-100 series of the Air Force, the X-15, the SR-71 and, although not supersonic but operating at high altitudes, the U-2. The SR-71 in fact is a high altitude supersonic aircraft that could certainly be utilized for research purposes.

It is clear then, that operational aircraft have existed, and do exist, to perform all of the research and experiment analysis that must be performed. Building two additional supersonic aircraft at a cost of some $290 million is an abhorrent waste of taxpayers' money at a time when everyone acknowledges the Government must exercise fiscal restraint.

What is needed is for the Department of Defense to open its records on the operation and characteristics of supersonic aircraft and to work in conjunction with the Department of Transportation and the National Academy of Sciences to develop research programs with existing aircraft to test these environmental problems that are likely to be created by the SST.

I am informed that many of the Nation's most outstanding atmospheric scientists have attempted to get information from the DOD on the characteristic of supersonic flight relevant to environmental analysis—such as Dr. Reid Bryson at the University of Wisconsin—and have been denied. The information developed by the military must be and can be made available to answer the questions raised by supersonic flight and DOD research should be directed to develop any necessary information which does not exist.

It is sheer folly to argue that two new aircraft are necessary to generate answers when similar aircraft are already flying.

And, Mr. President, that argument misses the fundamental reason why the SST has become a symbol to millions of Americans, and why this appropriations request must be rejected.

To devote $290 million now to a continuation of the SST program would simply be a gross misallocation of our resources.

In terms of transportation, the SST does not begin to compare with our need to revitalize our intercity rail service, or to reconstruct our urban mass transit systems.

In terms of aviation, the SST does not begin to compare with our need to build new and improved airports for the planes we already fly, or to develop new short-haul aircraft.

In terms of our most urgent national priorities, the SST does not begin to compare with our need to train sufficient health care personnel, to find better ways of protecting our environment, to provide adequate housing.

The administration argues that the United States must start spending $290 million more to stay competitive.

But competitive with what?

The Concorde, for example, has by no means proven itself a serious threat to American civil aviation manufacturers.

Although options are currently outstanding for 74 Concordes, not one of those options has been exercised.

Indeed, the presidents of Pan American, Trans World Airlines, United Airlines, have all—in recent weeks—been reported as expressing skepticism over the economic viability of these new aircraft.

And why?

Because to operate them at a profit might require a 30- to 40-percent increase in airfares.

Because their sonic boom—in the light of the Senate action of yesterday—would prevent flights over restricted geographic areas.

Because their initial capital cost could prove unacceptable for airlines hard-pressed to pay for the jumbo jets already on order.

Clearly, the SST is not a necessity.

It is a luxury—a luxury that few taxpayers would ever enjoy—a luxury that we cannot afford now.

I recognize, of course, that the money for an SST would provide jobs for some Americans whose security has been threatened by the deliberately restrictive fiscal and monetary policies of the last 2 years.

But no one can argue seriously that an SST is the best project—or even one of the best—for putting men to work, or for restoring health and vitality to our economy as a whole.

Indeed, the President's own ad hoc committee to review the SST program concluded last year that the employment which an SST would support "should not be considered as a justification for proceeding with the program . . ."

The time has come for us in the Senate to consider not just the immediate interests of one private company, but the long-range interest of the Nation; not just the appropriations request for a single project, but the overall balance between what is critical in our budget and what is not; not just the prototype of a supersonic transport, but the example of a responsible Congress.

The time has come for us to face reality.

On all of these counts it seems to me obvious, irresistible, and inevitable that the time has come for us to say "No" to this appropriation.

Mr. PROXMIRE. I thank the Senator.

I yield 10 minutes to the Senator from Alabama.

Mr. MAGNUSON. Mr. President, will the Senator withhold briefly so that I may yield myself 1 minute in order to place some material in the RECORD?

Mr. ALLEN. Mr. President, I am glad to withhold my remarks briefly so that the Senator may place material in the RECORD, without the time being charged to me.

Mr. MAGNUSON. Mr. President, I ask unanimous consent to have printed in the RECORD letters from the president of Pan American World Airways and Trans World Airlines. In addition, we have telegrams from the airlines that they all are most enthusiastic about the SST and have not changed their position one iota, which I ask now to have printed in the RECORD.

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

PAN AMERICAN WORLD AIRWAYS,
May 4, 1970.

The Honorable RICHARD B. RUSSELL,
Chairman, Senate Appropriations Committee, United States Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is to assure you that Pan American World Airways continues to stand behind the U.S. program for the development of a supersonic transport, and has the expectation of being able in the late 1970s to fulfill its plan for the purchase of fifteen of the first American-built supersonic airliners.

Pan Am has the alternative of relying solely upon supersonic airliners built by the manufacturers of some other country. This company already has options to purchase eight Concordes. And the Soviet Union is developing the TU 144, an aircraft similar to the Concorde, which will undoubtedly be offered to purchasers in the free world after the requirements of the Socialist airlines have been fulfilled.

But Pan Am nevertheless continues to stand behind the American program for these principal reasons:

1. The supersonic transport will be a significant contribution to expanding the use of human time and human talent, improving high-level international communication and to widening the travel and educational opportunities available to the average citizen.

2. To perform the public service we are confident it can perform, the supersonic transport must be capable of economic operation, and the record of the last 35 years confirms that American aerospace manufacturers have a better ability than the manufacturers of other countries to build large transports that operate economically.

3. Pan Am believes that a supersonic transport must be socially acceptable and operate without damage or disturbance to the public and the environment, and we believe that the best chance of having a supersonic airliner that conforms to the proper social and ecological standards is to have it built here under American control. With our route pattern preponderantly over water, we will not project a sonic boom on occupied areas.

4. The United States cannot prevent the rest of the world from building, selling and using faster airplanes. Their construction and use is in fact inevitable, once the safe, sound and socially desirable model is designed. The only question is whether and to what extent the supersonic transports operated by the world's airlines, and utilized by the people of the world, will be built in the U.S. with the rewards going to American labor and to American capital, or whether the world production of the supersonic transport will rest with other countries.

5. As an airline facing intense and worldwide competition (by a total of 92 other airlines most of which are state-owned or subsidized), Pan Am will have no choice but to operate supersonic transports as soon as foreign-flag airlines are able to do so even though initial foreign aircraft may fall short of economic objectives. We would prefer to do so on the basis of following Pan Am's historic policy of encouraging development of the American manufacturing industry.

Time is running against the United States aerospace industry and, to the extent it can produce a superior SST, against United States airlines, Mr. Chairman. Should the American project be much delayed, the market for it will be reduced through (1) the greater availability of Concordes and TU 144s, and (2) the development of improved versions of those two aircraft.

We therefore believe the program should proceed on a deliberate, orderly, efficient basis as a national investment in the future of an ever more efficient and publicly useful system of worldwide transportation.

Sincerely,

N. E. HALABY.

TRANS WORLD AIRLINES,
New York, N.Y., May 20, 1970.

Mr. WILLIAM M. MAGRUDER,
Director—SST Development Program, Department of Transportation, Washington, D.C.

DEAR MR. MAGRUDER: In view of the current Congressional hearings regarding the U.S. SST program, I thought it would be in order for TWA to express its views on this matter.

It is our strong view that the best interests of the United States require that the U.S. Supersonic Transport Program be carried through to completion vigorously and expeditiously.

Supersonic travel will bring great benefits to the traveling public and to the cause of international understanding. The initial family of subsonic jets provided a major breakthrough in the ease and convenience of travel, with resulting benefits to those traveling in furtherance of their business interests, as well as those traveling for their own pleasure, education or cultural advancement. The much greater saving in time with the supersonic transport will, we are confident, represent another major breakthrough, still further encouraging the interchange of cultural, social, and business interests.

In any case, the issue which faces the United States at this time is not whether there shall be a supersonic era in air travel. This is practically upon us with the continuing development of supersonic aircraft by the British and French as well as by the Russians.

The real issue which confronts the United States is whether this country will be an active participant in the development and sale of this new family of aircraft, or whether we will turn over to other countries the leadership in aeronautical technology which we have so long held.

This acknowledged leadership of the United States in aeronautical matters has paid great dividends to this country thus far. Quite apart from the intangible considerations of national prestige, the sale of U.S.-manufactured aircraft has meant a great contribution to our balance of payments, and has meant related benefits for employment of U.S. labor and capital.

The same benefits can continue in the future if the United States is prepared to become a full and active participant in the supersonic era of aircraft development. This will not only mean the capability for improving our balance of payments by export sales to foreign purchasers; it can prevent the erosion of our balance of payments picture which would otherwise occur if U.S.-flag operators are themselves compelled to look abroad for the availability of supersonic transports.

Clearly, supersonic transport operations must satisfy reasonable environmental requirements with regard to noise and related matters. We are satisfied that this will be the case. Sufficient flight paths will exist to permit the limitation of the supersonic phase of operations to non-populated areas, with restrictions to subsonic speeds over populated areas. We believe such operation to be feasible and acceptable. At the same time, we would expect that further progress in the alleviation of engine noise and sonic boom intensity will result from continued future research, thereby eventually permitting operations to be conducted with fewer such restrictions.

In conclusion, our view remains as previously expressed, namely, that the varied interests of the United States Government and the United States public will best be served by actively proceeding with the development of a U.S. supersonic transport, so as to obtain a superior and economically viable aircraft at the earliest practical time.

Sincerely,

F. C. WISER.

NOVEMBER 24, 1970.

Honorable R. RUSSELL,
Chairman, Senate Appropriations Committee, U.S. Senate, Washington, D.C.:

I have heard that my recent remarks in London and elsewhere regarding supersonic transportation have been misinterpreted as a change from the Pan Am position stated in my letter to you of May 4, 1970. This is to let you know that we stand on that letter and are convinced that our country should proceed with the program as proposed.

N. E. HALABY,
President, Pan Am Airways.

NOVEMBER 25, 1970.

WILLIAM M. MAGRUDER,
Director, SST Development Program, Department of Transportation, Washington, D.C.:

This is to reaffirm to you that the views on the U.S. SST program expressed in my letter of May 20 to you remain my views. Continuation of the U.S. supersonic transport development program is believed to be in the best interest of the United States since it will help maintain a strong aircraft industry and a favorable balance of payments situation.

F. C. WISER,
President, Trans World Airlines.

Mr. MUSKIE. Mr. President, I ask unanimous consent to have printed in the RECORD news stories upon which my argument earlier this afternoon was based.

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

PAN AM, TWA SEEKING TESTS BEFORE BUYING CONCORDE JETS

(By Robert J. Samuelson)

America's two major international airlines—Pan American World Airways and Trans World Airlines—are becoming increasingly leery of making a large commitment for rapid delivery of the British-French Concorde supersonic jet.

The airlines' growing wariness has surfaced over the last two weeks during individual trips to Europe of the carriers' presidents, Najeeb Halaby of Pan Am and F. C. Wiser of TWA.

Neither of the airline presidents departed from the industry's longstanding support for a supersonic aircraft. Nevertheless, their reservations on Concorde could have implications for an American SST program.

Any major slowdown in the Concorde would provide strong ammunition for critics of the U.S. project, now awaiting $290 million funding from the Senate. Proponents of an American SST have consistently argued that a U.S. plane is required to prevent the loss of a major aircraft market—ultimately worth billions of dollars, they say—to the Europeans by default.

Likewise, if the Concorde were to be delayed and development of the U.S. plane proceeds on schedule, the British-French aircraft would lose its major selling advantage over a bigger, faster American SST; a four- or five-year head start.

Pan Am's Halaby, in London a week ago, made a straight-forward appeal for delay.

Citing the technical complexities of a new supersonic transport which lacks a military forerunner, Halaby proposed that mass production of the Concorde—now undergoing flight tests—be postponed until a consortium of international airlines has subjected the plane to extensive operational checks by flying it on regular commercial routes.

"We are confident, but skeptical (of the plane)," Halaby said in an interview with the London Financial Times. "The airline industry does not want to plunge into this new era without cautiously testing Concorde before it commits itself."

Just a few days earlier, speaking in Geneva, TWA's Wiser said the Concorde would be a money "loser" unless travelers are willing to pay a ticket surcharge of 30 to 40 per cent more than today's first class and economy rates.

The airlines' apparent cautiousness reflects two longstanding reservations about the Concorde—and, indirectly, an American SST.

First, the airline industry, now burdened with huge debts to purchase a new generation of jumbo jets, simply won't be able to raise sufficient capital to pay for the Concordes, priced at more than $20 million each. Inflation and the economic slowdown, which has limited traffic growth, have weakened airline profits to the point where some analysts fear that carriers will have to cancel orders for jumbo jets—planes for which substantial "progress" payments have already been made.

Second, the Concorde, despite its higher speed (last week, it reached twice the speed of sound), will cost more to operate than the present subsonic jets. The Concorde will seat only 114 to 144 passengers against 360 for the Boeing 747; the British Aircraft Corp., one of the Concorde's major manufacturers, says the supersonic plane will cost about 36 per cent more to operate than a 747.

Neither of these problems is of recent origin, and the Concorde's backers tend to see Pan Am's and TWA's recent outburst of criticism as an attempt to improve their bargaining positions approaching price negotiations.

The British and French have received 74 "options" for the Concorde, with Pan Am (8) and TWA (6) representing two of the heaviest commitments. An "option," however, required only a minimal payment (reportedly between $100,000 and $250,000). The real negotiations to buy the supersonic planes should begin in late 1970 and early 1971.

"We have been expecting some fairly tough comments to come out of the airlines who are in early delivery positions," says a British Aircraft Corp. spokesman.

One knowledgeable American official, Bernard Vierling, deputy director of the U.S. SST project, agrees. "They (the airlines) are doing some negotiating in public," he says.

Halaby's proposal may also be an attempt to ease the burden of simultaneously financing Boeing 747s and Concordes by deferring deliveries of the supersonic jet.

According to industry observers, even airlines that do not want the Concorde would be forced to buy it if their competitors purchase the faster plane. "We've got to fly the things if the British and the French do," say both TWA and Pan Am.

Halaby's prolonged tests would postpone this day of reckoning. The first deliveries are now scheduled for late 1973 or early 1974.

As he describes it, the program of extended flights—he did not say who would pay for the trials—would involve several large airlines. They would fly regular routes, possibly transport some demonstration groups, but probably not sell tickets to the general public.

The Concorde's manufacturers do not like the plan. Of 4,000 hours of planned flight testing, 1,500 hours are already marked for operational problems in which airline pilots probably will take part.

"We are not going to ask early-delivery airlines (those receiving the Concorde first) to do development testing for us," Edwin H. Burgess, British Aircraft Corp.'s sales manager for Concorde, said in a Washington speech last week.

The corporation's officials don't seem perturbed by the other problem raised by the airlines—the ticket surcharge. Without a surcharge, they say, passengers would flock from the subsonic planes to the Concorde, even though the narrow-bodied supersonic jet will be less roomy than the Boeing 747.

"I cannot see supersonic aircraft operating without surcharge," Burgess said. However, British Aircraft Corp. officials have also suggested that the Concorde be converted exclusively to first-class passengers. In that case, they say, ticket prices would probably remain the same or might even drop.

The maneuvering over Concorde has imprecise implications for the American SST project.

The first Concorde is expected to be delivered four or five years ahead of the target date for the initial American SST. Because the American plane will seat more people (more than 300) and is projected to fly faster, any prolonged deliveries would tend to favor the American plane.

Halaby specifically denied that his suggestion is a "ploy."

"I am not trying to get a lead for the U.S. aircraft," he said. "It is a bigger, faster, more expensive machine than Concorde and so ought to be subjected to the same tests before the airlines commit themselves to buy it."

Mr. MAGNUSON. These letters are from the people themselves.

Mr. MUSKIE. These news stories can be verified by the writers of the letters if they choose.

Mr. ALLEN. Mr. President, since coming to the Senate I have given strong support to meeting the defense needs of this country as presented by the administration. The SST falls in a different category. It is just another Federal boondoggle—and I might add, of which there are many—from which the Senate can yet extricate the Nation and minimize its already staggering losses of some $700 million.

Much has been made of the letter from William Magruder Director of SST development, wherein it is pointed out that program cancellation at this time would require a total Treasury outlay of $277.8 million. It was suggested that that is only $12 million short of the $290 million appropriation that is sought by the DOT bill.

Mr. President, it appears to me that the ultimate recipients of the $277.8 million in cancellation penalties and expenses would be the same people who would ultimately receive the $290 million appropriated by the bill.

It has been suggested, too, that the Government has, in effect, a joint venture in this project with the aircraft industry, and stands to earn a half-billion dollars if this project is allowed to go on. So, it would occur to the junior Senator from Alabama that if this contract should be allowed to lapse at this time and the $277.8 million in cancellation charges is paid to these recipients, they might use that in lieu of the $290 million appropriation to go ahead and get the prototypes in shape where private industry and private investment would be willing to carry on this venture. The aircraft industry and the airlines would then be the recipients of this $500 million alleged or suggested profit that the Federal Government will gain by being a joint venturer. So this windfall, it occurs to me, could be used in lieu of the $290 million that is appropriated by the bill.

I recall the remarks of the distinguished national columnist, James J. Kilpatrick, in commenting on debate in the House of Representatives on the question of whether or not to appropriate an additional $290 million toward development of the supersonic transport plane. Mr. Kilpatrick said:

> Arguments on both sides were reasoned, persuasive, and well-informed: but in the end, the wrong side won.

Mr. President, I concur in the judgment that the wrong side won on this matter in the House. The Senate now has the chance to remedy the situation and call a halt to this pie-in-the-sky program that has already taken a hefty bite

from the Federal Treasury, and could chew up a lot more unless it is stopped.

Mr. President, when President Nixon asked Congress in October 1969 to finance development of the SST, I expressed my opposition to the proposal for a number of reasons. Since then the proposal has been the subject of voluminous arguments pro and con in the media and in Congress. Nevertheless, I am aware of no evidence and no argument that would override the reasons for my original opposition to this project.

Supporters of the SST insist that the United States must build this plane because they say it will enhance our national prestige in the eyes of the world. They say that development of the SST is needed for technological progress and to strengthen the economy of the Nation by providing jobs and improving the balance of payments with foreign nations.

But these are arguments without basis in fact. Certainly a country that can put men on the moon need not fear loss of world prestige just because it decides not to build an SST with tax dollars.

Other than its projected speed, this airplane has nothing new to offer. The Boeing 747, which is already in service, carries twice as many passengers as the SST plus a vast amount of freight. It can fly safely at top speed over land or sea, which is more than can be said for the SST. More than that, the 747 was developed entirely from private sources and is designed to make a profit for the aviation industry, something the SST is not expected to do without Federal subsidies.

In 1961, when President Kennedy established the SST as a national priority, he promised that the maximum cost to the Government would be no more than $750 million. But today the anticipated cost of this plane to the Government has already gone up to more than $1.3 billion, and the end is not yet in sight.

If Uncle Sam also has to put up money for production of the plane—as seems likely—then the taxpayers' commitment will be $4 billion or more.

There are more pitfalls in the way of the SST than its development can be worth to the Government. Because of its speed, the SST will create a sonic boom track 50 miles wide, in which windows, glassware, house foundations, and buildings will be broken and cracked. This is to say nothing of the disastrous effect to the hearing and nervous system of men and animals. One scientist says that when the SST roars down its 2-mile-long runway—which taxpayers will also have to pay for—it will sound like 50 regular jets taking off at the time.

Despite the optimism of the SST supporters, no one has yet come up with a cure for the plane's noise level.

There are other important considerations to take into account. For example, the President is asking Congress to appropriate $106 million this year for control of air pollution. At the same time, he is asking for another $290 million for the SST which will spew its black clouds of fuel into the air we breathe.

The President's own Council on Environmental Quality has reported that the SST will cause climate and weather changes because of its high altitude pollution.

Mr. President, on November 17 of this year the distinguished junior Senator from Alaska directed the attention of the Senate to an exhaustive and unbiased report on the environmental issues surrounding the debate on the SST program. This report was prepared by Dr. George N. Chatham, a specialist in science and technology for the Science Policy Research Division of the Library of Congress. I have been deeply impressed by the report and I commend it to those who have not yet studied it.

The U.S. Treasury is not a bottomless well, and the sources available for the Federal budget are already stretched too thin. If there is to ever be a time for sober consideration of Federal spending priorities, that time is right now.

The overriding need for transportation is not to get a few well-to-do travelers to Europe 3 hours sooner, it is to get millions of our people to and from their jobs and the marketplace.

It is my position that if private investors wish to undertake development of the SST, and it can meet the standards of safety, noise abatement, and pollution, then that is private business, and I wish them every success.

I am happy to support the amendment of the distinguished Senator from Wisconsin.

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

Mr. ALLEN. Yes; I am delighted to yield.

The PRESIDING OFFICER. The Senator's time has expired.

Mr. PROXMIRE. Mr. President, I yield 2 additional minutes to the Senator from Alabama.

Mr. FULBRIGHT. Mr. President, I should like to associate myself with the remarks of the distinguished Senator from Alabama. I think he has summarized the various arguments, and particularly stressed the last argument about the question of transportation and what is most important. I believe the President, or at least the Department of Transportation, has recently suggested the reorganization of our railroads. I am very much in favor of it. It hits at the area which the Senator described here as making some contribution to our economy and the quality of life of our citizens.

It seems to me the ultimate in absurdity to spend this kind of money on this project when the need of money in the railroad area is so great and is nowhere to be seen. No one has proposed where it is to be gotten from.

On the matter of priorities, the Senator from Alabama has made a most persuasive case.

Mr. PROXMIRE. I yield 5 minutes to the Senator from Missouri (Mr. EAGLETON).

Mr. EAGLETON. Mr. President, I shall not delay the Senate by repeating the fine points made in the discussion of the Senator from Alabama or the remarks of the Senator from Maine (Mr. MUSKIE).

Even if the SST did not pose these potentially grave threats to the environment, it would still, in my view, represent an unwise investment of public funds.

If the Government's investment did not go beyond the currently projected $1.3 billion—and there are good and sufficient reasons to believe it could ultimately reach $4.5 billion—there is no assurance that that investment would ever be repaid.

What we are assured, under the 90 percent Government-financed development contract, is that if the SST fails the Government will take the loss and if the SST is a commercial success the manufacturer and the airlines will reap the profit. Why should the American taxpayers undertake a commercial venture which our normal commercial instruments—business and the banks—will not?

It is argued that more than a private commercial interest is at stake—that America's future balance of payments and its prestige are at stake if we do not have an SST to compete with the British-French Concorde. This assumes that the Concorde will actually go into production and sell.

The producers of the Concorde, and the proponents of the American SST, hold to a philosophy of equipment purchases known appropriately as the "Judas-goat" theory. This theory has it that whenever a new plane is produced that represents some real innovation the airlines must inevitably buy it to remain competitive even though it is certain to be a money loser.

But here is evidence that the U.S. airlines, now experiencing the worst financial year in their history, are taking another look at this theory. Newsweek recently quoted one airline executive as saying:

> I don't buy the Judas-goat argument if the plane is uneconomic. You get to the point of absurdity. I'd like to believe the world has not gotten so irrational."

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

Mr. EAGLETON. I do not yield. I want to finish my remarks in the limited time allotted to me.

Whether or not the world has gotten so irrational remains to be seen. What is certain is that at least three major airlines have recently expressed reservations about the Concorde.

A BOAC official has warned that the Concorde would put "a heavy demand on limited investment funds" of the airlines "with as yet no certainty of increased return."

The president of TWA has stated that the capital and operating cost of the Concorde would be too high for profitable operation and that its small capacity would require a fare from 30 to 40 percent above present transatlantic fares.

The president of Pan Am, in what appeared to be a delaying tactic, has proposed that a small group of airlines be allowed to fly the Concorde in passenger service before it goes into quantity production.

These concerns about the high cost

and doubtful eocnomic viability of the Concorde are not idle when seen in the context of the financial condition of American airlines.

The president of TWA has estimated that the 12 major U.S. airlines will lose $200 million this year. A number of factors are contributing to this situation. The economic slowdown has produced a decrease in the rate of traffic growth from 9 percent last year to an estimated 2 percent this year. Labor costs are increasing at an 11 percent annual rate. Overcompetition has resulted from route duplications applied for by the airlines and approved by the CAB.

Another major factor is the cost of putting the new generation of jumbo jets into service. To finance acquisition of the 747's and related outsized ground facilities, U.S. airlines will have to lay out $10 billion over the next 4 years. They are having to borrow heavily to finance these purchases and at an interest rate higher than that for any other major industry. Annual interest payments for the industry rose last year to $262 million as compared to $89 million in 1964.

Burdened with this debt, the airlines are understandably concerned about the prospect of having to finance the purchase of the Concorde—whose price is now put at $24 million but may well be $32 million by delivery time.

Add to this the fact that U.S. airlines are supposed to provide 80 percent of total cash requirements for American SST start-up costs during the period 1975–77 and it is easy to see why the airlines have begun to question the Concorde, the "Judas-goat" theory and, I would suspect, in private, the American SST.

The future of the Concorde itself is in doubt. The new Conservative government in Great Britain has made it clear that the Concorde is still on trial. A decision to drop out or stay in the program may come next spring when performance standards will be established and when it is seen how many of the 74 options to buy now held by 16 airlines are converted into firm orders.

There is considerable opposition among the British public to the Concorde program. The total development cost—without any production—is now estimated at $2 billion. Even Concorde supporters concede that the British and French governments will never recoup more than one-third of this cost even if the plane is a commercial success. The cost of the Concorde program to British taxpayers is now running at $158 million a year—almost exactly the amount of the recently announced cuts in health and welfare services in Great Britain.

Mr. President, it may be that American industry can eventually build a second-generation SST which will be more cost effective than the Concorde—perhaps even more cost effective than subsonic jet aircraft now available.

Let private industry decide when that time has come. Let private industry take the risks, and let private industry make the profits—or take the losses.

And let us not in the meantime invest the tax dollars of the American people in a commercial venture which promises no reasonable economic return to forestall competition which appears not to exist.

Let us not follow the British-French example and mortgage billions of dollars worth of domestic social services in a project whose social return would appear to be virtually nil.

On November 13, 1970, the Wall Street Journal said editorially:

> Supersonic air travel is inevitable. If development had waited until private industry found such a project feasible, though, there is at least the chance that some of the present problems would not loom so large. Of course development did not wait, so Congress now must decide what to do. We can only hope that decision will be based on evidence more persuasive that the fact the Concorde now has flown twice as fast as sound.

Perhaps the supersonic transport is inevitable, although I am not convinced of that. It is conceivable that we have reached a point in human history where we will discover that every new technological breakthrough does not necessarily represent progress and cannot be made cost effective if human values are entered in the ledger. Perhaps the time has come when a little technological toilet training may be required if man and his planet are to survive.

In any case, with the future of the Concorde highly uncertain, the advantages of deterring further development until private industry is willing to undertake development of the SST are now strikingly clear.

Mr. President, I believe the only responsible course for Congress is to withhold further public funds for the development of an SST.

Mr. FULBRIGHT. Mr. President, will the Senator yield for a question?

Mr. EAGLETON. If I have some time left; yes.

Mr. FULBRIGHT. The Senator keeps talking about the Concorde. We passed a bill, with the sponsorship of the proposer of this amendment——

The PRESIDING OFFICER. The Senator's time has expired.

Mr. PROXMIRE. I yield the Senator 1 additional minute.

Mr. FULBRIGHT. If we do not permit the Concorde, or the Russian version, whatever its name is, to come here—and the policy as expressed in the bill passed yesterday was opposed to it—where are they going to fly? How are they going to be economical at all, if they are not allowed to fly those outrageous planes into this country?

Mr. EAGLETON. The bill passed yesterday would not necessarily prevent their landing here.

Mr. FULBRIGHT. Why should we permit it?

Mr. EAGLETON. But that would be what I would consider the next logical step.

Mr. FULBRIGHT. Even if we do not go forward, there would not be any competitive threat at all, if they were not allowed to fly into our cities and over our country; and if that plane is as bad as I believe it to be, I do not know why we should not take that step. That would certainly solve that particular minor question.

Mr. EAGLETON. I agree with the Senator from Arkansas.

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

Mr. BIBLE. Mr. President, I yield 10 minutes to the Senator from Alaska to comment on the point.

Mr. GRAVEL. My colleague the Senator from Arkansas is much more knowledgeable globally and in our international affairs than to suggest there are not a lot of other places they could fly their planes.

Mr. FULBRIGHT. Where would they fly?

Mr. GRAVEL. Around South America, South Africa, Asia—there is no limit.

But there is an interesting point here, in the idea that we could capriciously use our power to inhibit the economic interests of the British Empire or the Soviet Union. If we tried that, we could start a commercial war. They would deny us landing rights at Heathrow for our 707. There would be no end to the battle that would ensue.

If we had some data, whereby we could show a definite ecological danger involved, there might be some point in attempting to exercise international police powers. But if we do not vote for this appropriation today, we will never have that knowledge.

Mr. FULBRIGHT. The Senator from Maine (Mr. MUSKIE) presented rather convincing evidence that this is ecologically dangerous.

Mr. GRAVEL. I listened very carefully to the Senator from Maine, and have read the testimony carefully, and what I come up with, very simply, is that no one knows, at this time. That is why we are appropriating the money, to study the question. It is that simple.

If the Senator from Wisconsin had offered an amendment to strike out the development cost of the prototype, and left some money in to study the problem, it would be more logical than striking everything out, which is what we would be doing here.

But let me move to the point raised by my colleague originally, which is the Judas goat theory—a fabulous theory, though this is the first I ever heard of it. It must be related to the propensity of man—because that is what we are talking about, with the SST—to devise a better instrument, something that works better.

We could stop where we are, because it is frightening to look ahead into the unknown. We could say, with respect to our environment, that we know we have certain problems and we should stop. We could grab the club and crawl back into the cave.

But, Mr. President, I take a different view. I think we can demand of science and technology the answers to our environmental problems; and in my mind, the SST is not environmentally deleterious. In my mind, it is a model of environmental industrial undertaking. Had we had the same foresight with the automobile, we would not be in the mess we are in today.

What we are doing is undertaking a prototype; but at the same time, we are studying the effect of these prototypes, and I am sure the Senate and Congress would be intelligent enough 2, 3, 4, or 5 years from now, when the data are in to face the issue. But not now. We should say "I do not know" until the facts are before us.

We are almost at the point, nationally, where we are bringing upon ourselves a psychic death wish, that apparently our economic position in the world is too much for us to carry.

Mr. FULBRIGHT. That is right.

Mr. GRAVEL. We are committing economic suicide. And the action we take today, if we vote "no," is the first significant step in that direction.

I do not get hung up with the competitive argument of the threat from the Soviet Union, or the French, or the British. If they succeed in developing an economic productivity better than ours, so be it. But I think it is important that we realize that we are not talking merely about competitiveness; we are talking about the economic fiber of this country, and if we destroy that fiber, whence will come the quality of life? From where will come the ability to pay for housing, hospitals, health care?

The argument was made by the Senator from Wisconsin that the airlines cannot afford the planes today. That is right; they cannot. If the situation continues, they will go bankrupt. They will go bankrupt because there is no one flying in the airplanes. Because we are in the syndrome of going downhill economically.

A lot of people have made speeches in this Chamber in the last few months about jobs and employment. This is the first issue before us which offers a chance to vote for jobs.

An issue has been made involving comparisons with the automobile and the railroads. There is no question in my mind; the history of that development is a tragedy. Our surface transportation is a disgrace.

But who is at fault? Some of my present colleagues and those who preceded me; the leaders of this country are at fault.

We have the most efficient means of transportation in what industry? The aviation industry. While all other modes of transportation have been increasing in cost, the aviation industry has been decreasing in cost—through more productivity.

What we are saying today is that if we vote "no," we are not going to elevate surface transportation, but what we are going to do is take the efficient segment of our system and tear it down to the inefficient levels of the others.

The document placed on our desks by the Senator from Wisconsin (Mr. PROXMIRE), the Senator from Illinois (Mr. PERCY), and the Senator from Kentucky (Mr. COOK) discusses various points.

In the first instance, it makes the statement that "Congress should not subsidize commercial air travel," and the inference was made in the colloquy here that this is a new departure.

Mr. President, this is nothing new. We have been subsidizing the operation of commercial aircraft ever since it started. What is different between dealing with the operating aspects of it and the capital aspects of it? It amounts to the same thing. So that point, in my mind, is very specious, very weak.

The second point made was that the SST has no projected military use.

That is right. That tickles me to death. We have had our technology dependent upon our defense posture far too long, and this is one instance where we have our technology trying to move for its own reasons—not for defense, not from fear, but from the fact that it could be good for mankind.

The next point that is made is that the SST represents a distorted sense of priorities, and it makes the comparison of $290 million for the SST with $105 million budgeted for air pollution.

I agree. That is right; that is terrible. But that is an indictment of whom? It is an indictment of all of us. I think it is appalling we have only $105 million for air pollution. We should have a good deal more.

I think it is appalling that the President of the United States would veto hospital funds and then push for this program. I think that is a distorted sense of priorities.

The SST is not the No. 1 priority in this Nation, but it is not the last priority, either. The SST appropriation represents 3 percent of the total transportation budget, not including the amount of money we have appropriated for surface transportation. That level does not indicate a high priority item. That is a low priority item. That is just what it is. But the argument has been made those of us in favor of it are calling this a high priority item.

The next point involves the expenditure of $103 million. I cannot comment on that. That is simply a fact.

The next point advanced is that potential impact to the environment is severe. That cannot be proved one way or the other at this point, and can only be studied.

Mr. BIBLE. Mr. President, will the Senator yield at that point?

Mr. GRAVEL. I yield.

Mr. BIBLE. I should like to make a point, because this particular bugaboo has come up time and time again.

We examined this matter exhaustively in the hearings. It seems to me that we will not know the answer to that question until we have finished the two prototypes and have had a hundred hours of flying time, and that is 2 years down the road. We will not know the answer to that question until late 1973 or early 1974.

We have another $4.6 million earmarked in this bill for research on the environment. I do not recall how many dollars already have been plowed into this.

Mr. GRAVEL. Mr. President, a great deal has been said about the Concorde. I think I am the only Member of the Senate who has been to Bristol, England, to visit the Concorde, to visit with the president of the British Aircraft Corp., to visit with the chief test pilot, to visit with the engineers, to visit with the officials of that government, and, to spend a whole evening and a whole day with them.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. BIBLE. I yield 2 additional minutes to the Senator from Alaska.

Mr. GRAVEL. All I can say is that what I have read from opponents and what my hosts told me do not match. They have encountered no difficulties. The difficulties they have encountered are the same as here.

Some Senators may wonder why Great Britain would want to spend so much of its capital to develop an SST. It is very simple. They are trying to strengthen an economy. They have had difficulty ever since the Second World War, and they figure the best way to do it is to get some industry, some viable industry, something productive, and something that will operate for the future. And they are doing just that. The Concorde is economically viable.

The Senator from Missouri quoted a statement made by the president of Pan Am, and I think the president of Pan Am will rue that, because he was trying to negotiate the price of the Concorde in public. Of course, if the decision is such in the Senate, it probably will be the only such aircraft they will be able to buy which will provide such rapid transportation.

Incidently, in connection with rapid transportation, the only amenity left that can be acquired in transportation is time, and that is what will be acquired with the use of the Concorde, the TU–144, and the SST.

Let me make one brief prediction, before concluding, in consonance with the statement once made by Nikita Khrushchev that they would "bury" us. That statement was highly misunderstood, because he meant that they would bury us economically. They may well have that opportunity, because the Soviet Union has a definite policy to overtake us in the field of commercial aviation.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. BIBLE. I yield 1 additional minute to the Senator from Alaska.

Mr. GRAVEL. What they are offering is the sale of their aircraft for 2-percent money. Many of the European and Asian nations do not want to buy this because of the poor performance in the past and the bad record. But this is going to change, because the Soviet Union is changing in the field of commercial aviation; and I predict that within 3 years it will overtake the United States, if we produce a negative vote here.

Not only will they offer enticements with soft money, but also, they will offer the enticement of the polar routes over Siberia, and there will be routes that will connect Asia and Europe which will not even have to touch the Western Hemisphere.

Mr. President, I ask unanimous consent to have printed at this point in the RECORD a letter which came to my atten-

tion this morning. It is a very important letter from Mr. William Magruder to the Senator from Washington (Mr. MAGNUSON) outlining the amount of money that would be forfeited with the cancellation of the SST program that would follow an adverse decision on that part of the bill.

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

OFFICE OF THE
SECRETARY OF TRANSPORTATION,
Washington, D.C., December 2, 1970.

HON. WARREN G. MAGNUSON,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MAGNUSON: The contract modifications for the Supersonic Transport Development Program for December were recently signed, and I believe you should be brought up to date on the obligations of the government should the program be terminated by the Congress this month.

Members of the Department of Transportation testified in August of this year that a F.Y. 1971 appropriation of approximately $160 million would be required to cover possible government liability if the SST program were cancelled prior to the 15 October recess. Since that time, of course, we have incurred additional program costs under the authority of the Joint Resolution which has allowed the program to proceed on schedule. Our current estimate of the minimum additional appropriations required in the event of program cancellation is $196.9 million. In addition to this amount, program termination could impose certain other possible legal and moral obligations on the Federal Government as indicated below.

The liability of the Federal Government in the event of program cancellation could be extensive. The government would be obligated to return to the SST Contractors their share of the development costs to date, for which Congress would have to appropriate funds. The Congress would also have to appropriate funds to cover the expenditures incurred since the beginning of this fiscal year under the Joint Resolution. Further, the Congress would also have to appropriate funds to cover termination costs, and, perhaps, to restore the nearly $59 million airlines have invested in the good faith that the prototype program would proceed to completion.

As mentioned above, the minimum F.Y. 1971 SST appropriation the Congress would have to approve to discharge the government's responsibilities is estimated to be $196.9 million. Additionally, if the government accepts a moral obligation to repay the $59 million the airlines have contributed to help defray development costs, the required appropriation would total $255.4 million. Not included in the foregoing would be the government's obligation to refund to the airlines $22.4 million on deposit in the Treasury for the reservation of SST delivery positions. Thus, program cancellation at this time could require a total Treasury outlay of as much as $277.8 million. Enclosed is a chart showing the breakdown of these figures.

It is obvious that we face a situation in which the costs to terminate the SST program are fast approaching the F.Y. 1971 amount being requested by the Administration for continuance of the program.

One further point is worth noting. Upon completion of the prototype program, the government's commitments to the manufacturers and the airlines will have been satisfied. Should we proceed to that point, and then for any reason the SST program does not proceed, the investments of the manufacturers and the airlines would not be refundable.

I should add that an additional and very real cost of any such termination at this time would be the loss of substantial benefits to the nation in jobs, exports, tax revenues, and recovery of the government's investment through royalties. The United States would also forfeit its role as world leader in commercial aviation.

The transportation systems of the 1980's will include supersonic transport aircraft, and I believe they should be those manufactured in this country.

Sincerely,

B. WIERLING.

SST PROGRAM TERMINATION COSTS

[In millions of dollars]

	Dec. 1, 1970	Jan. 1, 1971
Contractor shares	77.8	79.8
Additional appropriations required to cover continuing resolution	86.6	105.1
Estimated additional termination liability	10.0	10.0
Program office	2.0	2.0
Appropriations required	176.4	196.9
Plus airline escrow funds (Treasury)	22.4	22.4
Total minimum Treasury outlay	198.8	219.3
Plus airline R. & D. contribution [1]	58.5	58.5
Total Government commitment	257.3	277.8

[1] Although not legally binding, a possible moral refund obligation.

Mr. GRAVEL. Mr. President, the figures contained in the letter are very interesting. They demonstrate, I think, an unusual point. We would be spending almost the same amount of money if we were to reject the appropriation of funds for the SST today as we would if we were to approve the appropriation.

The amount of money that would have to be paid out for contractor shares, the additional appropriations to cover the expenditures under the continuing resolution, the estimated additional termination liability, and the program office would amount to $196.9 million. We are talking about an appropriation of $289 million. In addition to the amount I have mentioned, we would have to appropriate from the Treasury $22.4 million, that being the amount that the airlines helped to put up in escrow for position buying, and another item that might come under question which concerns the fact that the private sector of our economy has put up money for research and development in the amount of $58.5 million. It may be that they could take legal action to recover that money. However, without adding the $58.5 million, we still come to a total of $219 million.

Mr. President, I think it is interesting to note that there would be no appreciable gain budgetwise in turning down this project.

Mr. President, I ask unanimous consent to have printed in the RECORD a letter to the Senator from Washington (Mr. MAGNUSON) from Mr. Homer B. Anderson, and an editorial printed in this morning's Washington Post entitled "The SST: What's the Hurry?"

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

DECEMBER 2, 1970.

Re SST appropriation, fiscal year 1971

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

DEAR SENATOR MAGNUSON: The Airport Operators Council International (AOCI) fully supports your amendment to S. 4547, accepted by the Senate this afternoon, which provides assurances that the U.S. SST's aircraft noise levels will not exceed those of new subsonic jet aircraft.

As offered in the Senate, your amendment adds a new Subsection (i) to S. 4547 as reported out of the Senate Commerce Committee as follows:

"Subsection (i)—The Department of Transportation shall modify its contracts with the contractors for the civil supersonic transport development program to provide that the contracts will not be satisfactorily completed until the contractors demonstrate that all production models of the prototype can operate in compliance with appendix C of Part 36 of the Federal Aviation Regulations now restricting takeoff, approach and sideline noise created by new subsonic jet aircraft as in effect on the date of enactment of this subsection."

In our earlier and widely reported statements on the SST appropriation, we stated our support for the development of an *environmentally-sound SST*. To assure that this objective would be met, AOCI, representing all the communities in the United States which are likely candidates to receive service from the first-generation SST, stated that the pending $290 million SST appropriation for FY '71 should be approved by the Senate only if there were a requirement that all production models of the aircraft meet the same noise standards now established in Appendix C of Part 36 of the Federal Aviation Regulations for subsonic aircraft and with the same trade-off provisions.

The amendment to S. 4547 adopted by the Senate today satisfies the airport operator's SST aircraft noise concern. Thus, we fully support action by the Senate to appropriate the full $290 million SST appropriation for FY '71. And, with the approval of this new statutory provision, AOCI can find no basis for any vote against the SST appropriation because of the aircraft's noise effect on communities.

Further, Congressional action to set definitive noise standards for SST operation will provide an additional impetus for SST aircraft produced by other nations to meet the same noise restrictions. Airport operators will be unable to convince their communities that service by any SST aircraft should be permitted which exceeds limits which the U.S. SST will be required to meet.

We are most appreciative of your continuing efforts to support the development of new technologically advanced aircraft which are also environmentally compatible with existing airports and their adjacent communities.

Sincerely,

HOMER B. ANDERSON,
President.

THE SST: WHAT'S THE HURRY?

The Senate is scheduled to vote today on the money to proceed with the production of two prototype supersonic transports (SSTs) and our firm view, which we would be the first to admit has been slow in evolving, is that the vote should be to deny this appropriation and forgo further development of this aircraft at this time. It is not that we don't think that a safe and workable SST would be a nice thing to have—for the country or, for that matter, the world that has

everything. It would carry almost 300 passengers at a breathtaking 1,800 miles an hour once in use, now scheduled to begin in 1978; and this would mean that you could leave New York City at 6 a.m. and attend a 3 p.m. business meeting in Paris and enjoy a dinner and even a little night life on the Champs Elysee, and be back in New York by 9 p.m. if all went well. It would, as its advocates contend, greatly shrink the globe, and this would be of particular significance for trans-Pacific travel—Los Angeles to Tokyo, for example. And it would enhance this country's reputation, not only as the predominant aircraft supplier on earth, but also as the greatest technological leader. It would be good for our image, and our economy and the balance of payments, and failure to build it would probably be injurious, to one degree or another, on all three counts, temporarily.

So there is much to be said in principle for having SSTs, not the least of which is that if we don't proceed, the French and the British are very likely to go ahead anyway with their Concorde, which is quite inferior to our proposed product, but also much farther advanced; moreover the Russians are quite likely to proceed with their similarly inferior version, the TU–144. So whatever we do, there may well be SSTs aloft in large numbers in the late 1970s, which would seem on its face to be reason enough to proceed posthaste, especially since all the Nixon administration is really asking for right now is $290 million, as part of a total cost to the government of $1.3 billion to build two prototypes. We can decide later, we are told, whether to go into full production, at an estimated cost of $3 billion to the aircraft industry (which may or may not involve further financial support from the government).

The first thing to be said about this is that the increment under consideration will increase greatly the momentum of this project, to the point where it will be exceedingly difficult to cancel the whole thing later on, no matter what we discover from test flights of the prototypes. And the second thing to be very clear about is that we may make some very disagreeable discoveries from these test flights. There is, first of all, the problem of the engine noise which in the vicinity of airports will be considerably more intense than anything we are now familiar with, and of the shattering impact of the sonic boom. We are assured that these will not be allowed to discomfort us; that SSTs will be forbidden to fly overland until we have learned to muffle the sonic boom; that sharper descents and ascents will alleviate the noise; and that the proponents are prepared to write these rules into law. But we also know from past experience that laws can be changed and that the pressure to err on the side of progress-and-never-mind-the-inconvenience will be very powerful. When something is in hand that makes money—automobiles, for example, or factories that pollute—there is a tendency to try to live with it, however much it may diminish the quality of life.

So there are these uncertainties and one more which, by itself is argument enough, in our view, against proceeding with the SST now: that is the potential havoc it could wreak world-wide by the effect it may have on the air—the upper atmosphere—which envelops this planet. There is sharp disagreement on this point among the most distinguished and learned scientists; some predict that the vapor trails of a future fleet of SSTs will coat the globe with cirrus cloud, shutting out the sun and permanently affecting the climate; others see the SSTs destroying ozone and removing the shield against dangerous cancer-inducing, ultraviolet radiation.

Others say these things won't happen. And that is just the point: *at this state they don't know.* Thus the Senate may today be giving a conclusive push forward to a project which is freighted with unknown menace, but which will, by this action, become all that much more difficult to halt; in the desperate international competition for purchase orders and prestige, hard-headed judgments become all the harder as the investment grows; yet if we seriously pollute the upper atmosphere and discover our error too late, it will be a good deal harder than even the Potomac River to de-pollute.

It is all very well to argue that we would be careful about this, and that if we found these aircraft to be a menace, we would have blown, at the worst, no more than another $500 million in addition to the $600 million or so already spent; you could even say that this is a fling worth taking—for the country that has everything.

But we don't. We confront shameful pockets of poverty, and a terrible and growing shortage of housing, and shockingly inadequate educational facilities, a fragile, inflation-ridden economy. We live in a time of social ferment, when a whole new generation is profoundly questioning our priorities; when something like an SST is to many people the very symbol of misplaced values and of old-fashioned reflexes to industrial jingoism and a concept of prestige which is sorely out of date.

President Nixon said he decided to proceed with the SST because "I want the United States to continue to lead the world in air transport." But he gave the game away just a little at the ceremony announcing that decision by pointedly offering his congratulations to the governor and other representatives from the State of Washington, which would be the principal economic beneficiary of the SST project. Either way, it's old-hat; even if you concede that the SSTs will work, the gain, let's be honest about it, would be marginal—a few hours saved for a relative handful of hard-pressed international businessmen (surely no vacation-bound tourist is going to insist on supersonic haste.)

So our view is what's the hurry—either to cross the oceans or to build the SST? If the Nixon administration wishes to give leadership to the world, it might consider instead the impact of this country's foreswearing temporary financial gain and a transitory feather in its technological cap in favor of a role as the leader in an urgent re-ordering of this country's and the world's priorities.

Mr. GRAVEL. Mr. President, the editorial which I have just had printed in the RECORD is very revealing for two reasons.

The editorial refers to the momentum of this project. That means that if we approve this project now and move ahead, regardless of what we discover later when we acquire the prototypes and acquire more knowledge of the environmental effects of the aircraft, the Senate or the House or the Congress collectively would not have the wisdom or the intelligence to make the decision whether to stop the commercial proliferation of this aircraft.

Mr. President, I am confident that the House or Senate in the next year, 2 or 3 years would not be that mindless if we receive evidence indicating that there would be a problem with the ozone—something which we do not know at this time. But this is something we will not discover, because if this project is turned down, the research also will be turned down. We will essentially remain in ignorance.

I believe the Senate could make an intelligent decision at that time. I do not think the environmental concern of the people of this Nation will be any less 2 years or 3 years from now when we are more equipped to make a decision.

The editorial goes on to state that another reason for voting against the SST is that at this point in time we do not know what the ecological effects would be. That is a very accurate statement. We do not know but we do know that if we do not continue with the prototype we will not find out.

Those who advance the argument that we could use our sovereign powers to stop foreign SST's from entering the United States would be advocating a very capricious use of those powers. I do not think that in the international community we could with honesty carry out any effort to deny the Concorde or the TU–144 from crossing American boundaries if we did not have good reasons and sufficient logical data to back up that decision.

Obviously, if we say no to the SST program today we will not have that good and sufficient evidence to prove the case one way or the other. Unfortunately, the vote today is not on whether we have an SST; we have one. I saw it in flight in Bristol, England. I sat with the chief test pilot, government officials, the design engineer, and the project engineer. I visited with them and I can say that after an evening of discussion and the facts I gleaned from first hand observation, there is not the slightest appearance of the problems I have read about numerous times.

I stood at the sideline to listen to the aircraft take off. That was the most unusual experience of all. I was 200 feet off the concrete apron and 500 feet down the strip. When the plane roared by I had a natural inclination to put my hands to my ears. I did not because I wanted to get the full blast. It was quite loud but what really struck me was the fact that it was not as loud as I thought it would be. Even as a proponent of the SST I was emotionally intimidated as a result of the vast amount of negative press coverage we have all been exposed to.

Mr. PROXMIRE. Mr. President, I yield 5 minutes to the Senator from New York.

Mr. JAVITS. Mr. President, I wish to announce my position in this critically important matter, to which I have given much thought and which has a very mixed reception in my State.

The present provision of the appropriations bill regarding the SST no longer makes business sense to me. Therefore, I have decided to support the effort to delete this provision.

Should it be deleted, I, for one, would be willing to support a reduced appropriation based on a renegotiated position for the Federal Government with an expenditure on the order of magnitude of an estimated $100 million for the coming year—a sum which bears some relationship anyhow to the estimated termination costs if the existing contract is cancelled.

I do not see the airlines in any financial condition to buy these new aircraft. Indeed, the strain could hurt them even further, and they are already hurting badly. The Concorde is ahead of us by several years anyhow, and all the U.S.

airlines are doing now is estimating that they will have the capability to buy and will need to buy a supersonic plane to meet competition in 1975–78. The U.S. plane is expected to have greater capacity, efficiency and economy, and I cannot see that if it is slowed up by a few more years—as long as it cannot be first anyhow—there will be any fatal result. The aircraft to start will in any case be designed only for the "carriage trade." The delay may prove to be an advantage indeed in leapfrogging the competition, by developing a much better plane than the Concorde.

I know it will be alleged that we must appropriate the full amount now or cancel, and I realize that the vote is yea or nay. But I think the only way to record my views is to vote nay. If this appropriation is defeated, another way will be found on a more modest and long-range basis. I do not consider it seemly at this time, considering our national financial condition and national priorities, to go full steam ahead on the SST as this appropriation requires.

Two other points are essential:

First. I have read carefully a great deal of the available material on the ecological argument. I am confident, and always have been, that the supersonic plane would not be permitted to fly if it were an ecological hazard, and thus this argument need not be an element of judgment in respect of it. The Senate itself has already gone a long way to answer that argument by the passage of S. 4547, authored by Senator MAGNUSON and amended by other Senators, including Senator PERCY.

Two. Other economic arguments are directed to the balance-of-payments problem and the employment need in the aircraft manufacturing industry. The balance of payments can hardly hinge upon this aircraft; it has many other aspects including the trade policy of the United States which is the preponderant question. I can certainly do my utmost with respect to the trade bill to assure that we have a highly favorable balance of trade overall, and I consider the continuance of the enlightened trade policy of the United States far more important to the balance of payments than the SST.

Regarding employment in the aircraft industry, New York, through a whole list of companies led by GE, has an enormous stake in the SST; but this question does not arise in any material way—and I have seen the figures—until the aircraft is proven and in production. Employment in respect of the prototypes is not a major factor. My desire to assist the industry and its workers is a major reason why I would be for a modified program, but I believe the weight of the evidence tells me to vote "no" on this appropriation in the interest of the overwhelming majority of the people of my State. I shall, of course, do all I can to help with employment in the industry in New York.

Mr. President, I conclude as follows:

In respect of these points I am impressed with the argument of Prof. C. P. Kindleberger, professor of economics at MIT. One of the 15—out of 16—leading economists who came out against the SST appropriation and who said:

> It makes no sense to argue that we ought to produce something we don't need because we need the employment, or not to produce something we do need because we already have full employment. The question of employment, and of balance of payments adjustment should be separated from the issues of what we * * * but within the total budget.

I am also encouraged by the words of Henry C. Wallich, the only one of the 16 economists dealing with the question who came out qualifiedly in favor. He said:

> A case can be made for postponing immediate construction of the plane in favor of continued development work. This may lose us some part of the market for the plane, but we might compensate by having a better plane later at lower cost to the government. Meanwhile, urgent priorities facing the government could be better attended to. But work will have to go forward in some form, and we must proceed on the assumption that supersonic transports will fly, ours or someone else's.

For that reason, Mr. President, I shall vote, at the same time lending my support to a modified program.

Mr. PROXMIRE. Mr. President, I now yield 10 minutes to the Senator from Illinois (Mr. PERCY).

The PRESIDING OFFICER (Mr. BELLMON). The Senator from Illinois is recognized for 10 minutes.

Mr. PERCY. Mr. President, I would judge, having talked with a number of Senators on both sides of the aisle in the last few hours, that this vote will be a cliff hanger. The totals seem separated now by 2 or 3 votes at the most. I have talked to a number of my colleagues who are still undecided, thus causing me to believe that it is more important than ever that we use our time right up until 3:30 p.m. Hopefully, we will be able to convince some of those who are undecided as to the logic of our case.

Mr. President, I am delighted that this is not an ideological battle. To find myself alined with the distinguished Senator from Alabama (Mr. ALLEN) on this issue is heartening indeed. The Senator from Alabama is a strong and stanch conservative. Though we have not always agreed on every issue, I respect his judgment. I am also delighted that the distinguished Senator from Virginia (Mr. BYRD) has indicated his strong support for our side. As I have sought to emphasize throughout the debate, our opposition to the SST is not ideological. It is a matter of judgment.

More important, this vote is a symbol to the United States of America and its people, that they can have their views reflected as they relate to our national priorities, and the allocation of our resources. This includes tax dollars, scientific hours, energy, and effort.

Today, we are required to make such a decision. I trust it will be made on the basis of logic and good judgment and as a result we will right our national priorities by putting the SST at the bottom of the barrel, where it belongs, rather than up on top where it has been.

Let me point out, because of the huge Federal deficit facing us in fiscal year 1971, that we will borrow every penny of the money we will put into the project if it is authorized. This will be true despite the fact that the terms of the agreement make the appropriation appear to be merely a loan and which is repayable.

If this is the case, I submit it is the "softest" loan anyone has ever heard of. There is not a banker in the world who would want to buy a part of that loan.

In my judgment, neither is there a Senator in this Chamber who is young enough to ever see this money repaid, including some of my distinguished colleagues who have come recently to the Senate.

Thus, I think we have to look at the proposition for what it is. If the SST project is not a good business risk, it is not a good taxpayer risk. I cannot understand, if bankers, airlines, and aircraft manufacturers do not think this is an economically sound investment, why the taxpayers should then be stuck with it.

I have talked to military officials. Certainly the national defense interests require efficient movement of goods and personnel. One would think, therefore, that the military would want to pay a part of the SST. But they do not seem to have any interest either in paying part of its cost.

I say, then, if it is not worth the investment to serve our national security interests by moving rapidly our military goods and personnel, who believes it is worth all this money to move tourists and other civilians more rapidly?

Certainly not the tourist. The tourist will not pay a premium of 25 percent, 30 percent, or 40 percent in order to get a seat on an SST. And it is not unreasonable to expect such a fare increase.

As for the businessman who wishes to save every precious moment he can, he will lose in the long run on his investment. Dollar for dollar, in terms of the yield on his investment, that same businessman spends perhaps 3 hours a day en route between his work in the city and his suburban home. Better he should direct his money to improving mass transit. In the long run, the 3 hours he saves on his trip to London hardly compares to the 3-hour trip daily to and from his work.

Mr. ALLEN. Mr. President, will the Senator from Illinois yield?

Mr. PERCY. I yield.

Mr. ALLEN. I appreciate the Senator from Illinois making reference to the fact that the junior Senator from Alabama is now on his side on this question. I should like to call the attention of the distinguished Senator from Illinois to the fact that when this measure was up last year, the junior Senator from Alabama voted against the SST and the distinguished Senator from Illinois voted for it. [Laughter.] So it would seem to the junior Senator from Alabama that that is not always the position of the Senator from Illinois.

Mr. PERCY. Mr. President, I am delighted to have the interjection of the Senator from Alabama. It is not, however, a correction because I did not say that it is nice "now" to be on his side,

rather, I simply said it is nice to be on the side of my colleague from Alabama, who represents my father's home State. I was born right across the bay.

Let me repeat, I am delighted with the Senator's statement. When I changed my position, I made it abundantly clear that I had made an initial mistake in judgment when I voted for the SST. I spent a year studying what caused me to come to that position, and I have concluded that it was simply a lack of preparation, and lack of adequate factual grounding in the issues at the time. I tell you, though, Mr. President, when one gets "religion" and becomes converted, he sometimes becomes as enthusiastic as the distinguished Senator from Wisconsin (Mr. PROXMIRE) has been all along on this particular issue.

For many compelling reasons, Mr. President, I have changed my mind.

I have seen reference to the cancellation costs. I would say, better cancel out now when we see where we are headed; it will simply cost more and more the longer it goes. The SST is in my judgment clearly a terrible boondoggle. I have heard it referred to as a "West Coast WPA project."

I have no objections to the Government serving as an employer of last resort but there are many urgent items of higher priority now that require our resources more than the SST.

I have recently returned from a trip to London where I spoke with aircraft engineers about their Concorde. I would not be surprised if some of the members of the House of Commons wished they had stopped the Concorde 1, 2, 3, or 4 years ago. They have a $1.8 billion investment in it now between the two countries engaged in its production. Even though they have some planes flying, they still do not know what to do about it. They know it is not an economically sound venture.

Yesterday, this body passed a bill to prohibit supersonic flights over this country——

Mr. GRAVEL. Mr. President, will the Senator from Illinois yield at that point?

Mr. PERCY. Because of my limited time, would it be possible——

Mr. BIBLE. Mr. President, I am just about out of time myself. I cannot yield time even for myself.

Mr. PERCY. I will be glad to yield to the Senator later if I have any left, but I would like to defer that for a moment.

Mr. President, I pose again the critical issue: If banks do not want any part of this venture, why should the taxpayers have to pay? Today we sit as a board of directors; we are being asked for our judgment on an investment of the taxpayers' money.

The SST is an unsound, uneconomical investment. It is also an unsound ecological investment.

It is a gross distortion of our national priorities.

I will vote a resounding "yes" on the amendment offered by the distinguished Senator from Wisconsin (Mr. PROXMIRE), which I am privileged to cosponsor.

Mr. President, yesterday, on the floor of the Senate, the distinguished Senator from Arizona (Mr. GOLDWATER), whom I am delighted to see is now in the Chamber, made a statement in which he commented on the half truths and the untruths emanating from "so-called scientists." "I have become convinced," he said, "that we have some scientists and economists here who can be more easily prostituted than some girls on a Saturday night." [Laughter.] The distinguished Senator from Arizona is noted for colorful manner in which he describes a situation. I am not now going to get into the details of "Saturday night," but I will comment on the distinguished people who have added their names to the growing number against the SST.

I am certain that General Quesada, an eminently respected military leader and a man who served as the first administrator of the FAA, from 1958 to 1961, is solidly against this. He reaffirmed his opposition to me on the telephone just 2 hours ago. Because of the economic conditions of the airlines, he has reaffirmed his solid opposition.

James Douglas, former Deputy Secretary of Defense and Deputy Secretary of the Air Force, whose letter I put in the RECORD yesterday, has been my adviser on many matters of this type, including the ABM. He is solidly opposed.

Many highly reputed scientists unanimously oppose it. The Federation of Scientists in a signed statement indicated that they are opposed.

Chairman Herbert York; Dr. Jeremy Stone, Dr. George Kistiakowsky, the science adviser to the President of the United States; Dr. Harold Urui; Dr. Jerome Weisner; Dr. Robert Wilson, another of the most eminent scientists in the world today; are all unalterably opposed to the SST on the basis of logic. They are hardly people whose judgments can be "prostituted."

I pay tribute to the chairman of the Foreign Relations Committee for soliciting the advice of economists.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. PROXMIRE. Mr. President, I yield an additional 2 minutes to the Senator from Illinois.

The PRESIDING OFFICER. The Senator from Illinois is recognized for an additional 2 minutes.

Mr. PERCY. Mr. President, I mention Dr. Milton Friedman, professor of economics at the University of Chicago, another of the Nation's leading economists and an adviser to the distinguished Senator from Arizona. He is also opposed to public investment in the SST. I value the Senator's judgment in selecting a good friend of mine, an eminent economist. This is what Dr. Friedman said:

> If the SST is worth building, the market will make it in Boeing's interest to build it without a subsidy; if a subsidy is needed, the SST should not be built.

Dr. Kenneth J. Arrow, professor of economics at Harvard University, a leading economic theorist, and expert on technology and public investment shares this same view.

Certainly Dr. Richard R. Nelson, professor of economics at Yale University and former economist with Rand Corp., is an undisputed expert on technology and economic growth.

Arthur Okun, former Chairman of the President's Council of Economic Advisers, is another expert economist.

Mr. President, I ask unanimous consent to have printed in the RECORD the entire list of economists who are opposed to this project.

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

ECONOMISTS WHO CONTRIBUTED SST STATEMENTS

Kenneth J. Arrow, Professor of Economics, Harvard University, leading economic theorist, expert on technology and public investment.

Frances Bator, Professor of Political Economy, Harvard University, Special Consultant to Secretary of the Treasury (1967–69).

W. J. Baumol, Professor of Economics, Princeton University, expert on business behavior and growth.

William M. Capron, Associate Dean, John F. Kennedy School of Government, Harvard University, Asst. Budget Secretary under LBJ.

Milton Friedman, Professor of Economics, University of Chicago, nation's leading monetarist economist.

John Kenneth Galbraith, Professor of Economics, Harvard University.

Walter W. Heller, Professor of Economics, University of Minnesota, former Chairman of Council of Economist Advisers.

C. P. Kindleberger, Professor of Economics, Massachusetts Institute of Technology, leading expert on international trade (balance of payments) and the international corporation.

Wassily Leontief, Professor of Economics, Harvard University, Director of Harvard Economic Research Project, expert on structure of the American economy, president of American Economics Association.

Richard R. Nelson, Professor of Economics, Yale University, formerly economist with Rand Corporation, expert on technology and economic growth.

Arthur M. Okun, former Chairman of Council of Economic Advisers.

Merton J. Peck, Chairman of Department of Economics, Yale University, expert on economics of competition in the transportation industries, Former member of Council of Economic Advisers.

Paul Samuelson, Professor of Economics, Massachusetts Institute of Technology, author of the leading introductory economics textbook.

Robert M. Solow, Professor of Economics, Massachusetts Institute of Technology, leading economic theorist, books published include *Capital Theory and the Rate of Return, Sources of Unemployment in the U.S.*

James Tobin, Professor of Economics, Yale University, President-Elect, American Economics Association, member of Council of Economic Advisers, 1961–62.

Henry C. Wallich, Professor of Economics, Yale University, member of Council of Economic Advisers, 1959–60; chief consultant to Treasury Secretary Kennedy.

Mr. PERCY. Mr. President, these men are men whose judgment cannot be bought and paid for by anyone.

Mr. President, I have had printed in the RECORD many articles on the SST prepared by physical scientists. The last article I shall request be printed in the RECORD is prepared by what I might dub a "journalist's scientist." He deserves to have the last word. I, therefore, ask unanimous consent to have printed in the RECORD an article from the New York Times of Thursday, December 3,

1970, written by Tom Wicker, entitled, "The Everest Attitude."

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

THE EVEREST ATTITUDE

(By Tom Wicker)

WASHINGTON, December 2.—The Senate debate on the provision of $290 million for the further development of the SST is part of a process that is more important than the outcome of the vote. That is not because the issue itself is negligible but because it is vital to advanced societies to make political decisions on great technological questions.

Whatever else is true of the SST, it apparently would represent a purely technological advance of some magnitude. The question, therefore, is whether the benefits of this advance are enough to outweigh whatever human and environmental prices must be paid for it. Since the dollar cost of the SST is so great that government participation was required, this particular technological decision has been subjected to continuing political debate.

At the very least, that debate has resulted in major modifications of the original concept to reduce the aircraft's noise and the pollution it would cause. Flights at supersonic speeds over the United States may even be barred by law. This kind of regulation will not satisfy those who see no need at all for the SST, but suppose a similar political process had surrounded the development of the automobile three-quarters of a century ago? This might be an infinitely more habitable country today.

Far too many important technological developments, touching upon millions of lives, go forward like that of the automobile—in the hands of private interests, which may or may not feel a public responsibility. The computer boom of recent years is a classic example; only now, rather like a farmer locking his barn after his horse was stolen, is some beginning political consideration being given to the threats and abuses implicit in the proliferation of computerized data banks. Similarly, the development and widespread use of detergents, insecticides and herbicides was largely unhampered by any thought of the consequences now becoming horridly plain.

Just recently, the Canadian Government of Prime Minister Trudeau began the sensible process of protecting the Arctic waters against the disastrous consequences of major oil spills. In trying to write maritime regulations that would *prevent* such spills, rather than concentrating on cleaning up after them, the Canadians were shocked to learn that so many supertankers are presently ordered and under construction that shipyards can make no major design innovations to guard against spills until late in the 1970's. Once again, the horse has been stolen from an unlocked barn.

This problem takes on increasing importance with every year that passes, impelling the world further into an era of technological explosion. Moreover, technological discovery has a multiplying effect; the more we know, the more it becomes possible for us to know. The pace of change, like the speed of a falling object, constantly accelerates, but there is nothing resembling a rational process by which most technological changes can be weighed and judged by those to be affected by them.

Of course, it is not possible to know in advance what all the consequences of some new pieces of wizardry will be; and even if that were possible, it would be difficult to know in some cases whether a given consequence would work for the good or the detriment of mankind—or both. Blessings have a way of being mixed, and the most evil winds do occasionally blow some good in this contrary universe.

That is why the SST debate is important. The French and British are already building supersonic planes, and so are the Russians; it appears unlikely therefore that, whatever happens in the Senate this week, the world will hold itself inviolate against sonic booms and superspeeds. It is vital, nevertheless, that if the thing is to be done it should be done with as much foreknowledge as may be had, and with as many safeguards as possible for the environment and for the human condition.

Beyond that, the SST debate ought to have useful effect in conditioning the world's—particularly the American—state of mind to a new form of political responsibility. "What hath God wrought?" asked Morse in the first telegraph transmission a century and a quarter ago; but the question now is "What can men do?" So many possibilities, of such incredible scope, lie immediately before us that the Everest attitude—climbing the mountain because it is there—will no longer suffice. In the technological era, there may be no way to get down.

Mr. BIBLE. Mr. President, I yield 5 minutes to the Senator from Arizona.

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

Mr. GOLDWATER. Mr. President, I rise to support the SST money contained in the bill. I will try to be as brief as I can and explain my reasons.

Mr. President, I think the Senator from Illinois did a great service in pointing out many of the men that I would like to identify with in a way in which he would not like to do. I would be delighted to give him some instruction in this general field at any time he would like to have it. I think that what the Senator from Illinois was talking about brings out more the logic contained in my arguments than anything I have heard on the floor.

What we are talking about is not the airplane, but the research and development.

The reason that I have been upset by economists and scientists who have come out against the SST is that they have nothing except their judgment to go on. They are talking about the sideline noise of an engine that has not been built. They talk about the sonic boom. We realize that we have made advances. We have made studies of the effect of the sonic boom on people.

What we would be doing if we were to vote in favor of the pending amendment would be to vote out the research and development money which could result in having an engine and an aircraft by which we could find some of the answers to the problems troubling us.

I am amused to find some of my friends on the other side of the matter talking about boondoggles and waste of money. I wonder what they think of the billions of dollars that have been and are being poured into urban renewal when we do not know how to go about spending it. How about the billions of dollars being spent on an educational system that has not been improved by the expenditure?

We want some hardware developed so that we can get the answers. I do not know how many people have studied this matter to the extent that I have.

I have flown at 80,000 feet at three times the speed of sound for the purpose of finding whether any vapor came out of the tail pipe. I could see no vapor and I was close to it.

The argument used by the Senator from Wisconsin (Mr. PROXMIRE), particularly in the papers I find on my desk today, has no background. No scientist will say that these things absolutely will happen. They will say, "If." I have to go along and say, "Maybe." But from the personal experience I have with the problem, not enough vapor will be developed by the engine to worry about. Three automobiles traveling at 60 miles an hour will put more vapor into the air than a whole fleet of SST's flying at 60,000 feet.

These scientists have said that there would be a collection of pollutants suspended in the air. There is no way that a pollutant, if it did exist, would be suspended in the air.

I would like to remind my friends of the eruption of the Krakatoa Volcano in the 1870's. It threw material into the air that would last for 60 years. It did not change anything except in the near vicinity of the volcano.

The cost of developing an SST, if my information is correct, is twice the total value of the Boeing Co., and of every other company associated with it.

Yesterday we were told that the Boeing Co. could only meet a small portion of this. Still they cannot finance it by private means.

It will be said that it is strange that a conservative like the Senator from Arizona (Mr. GOLDWATER) would be talking about the Federal Government doing this. I merely say that we have been doing it since the beginning of the Government. We have built canals and waterways. We just finished one in Arkansas. I wish that we had built one in Arizona. We have been doing this ever since the Government started.

I feel that it is the Federal responsibility to develop things that private industry cannot take on because of the very size of the project.

I remind the Senate that because of war we have produced every advancement we have had in aviation since World War II. I do not want to have another war come along before we decide to build some new aircraft.

The PRESIDING OFFICER. The time of the Senator has expired.

Mr. GOLDWATER. Mr. President, will the Senator from Nevada yield me some more time?

Mr. BIBLE. Mr. President, I am out of time. Can the Senator wind it down?

Mr. GOLDWATER. I am wound down.

Mr. BIBLE. Mr. President, I yield 3 minutes to the Senator from West Virginia.

The PRESIDING OFFICER. The Senator from West Virginia is recognized for 3 minutes.

SENATOR RANDOLPH SUPPORTS FUNDING OF SST PROTOTYPE

Mr. RANDOLPH. Mr. President, the supersonic transport presents a dilemma for those of us who have been in the forefront of air transport technology and

the struggle to improve the quality of American life. When President Kennedy proposed in June 1963, that the United States proceed with the development and testing of a prototype SST, he indicated that if after flight testing the airplane did not prove to be safe and sound and publicly acceptable it would be canceled. He also recommended that the manufacturers and operators of the aircraft would pay back the temporary investment of the Federal Government in the project. Our Nation has now advanced 7 years on the program and faces the very difficult question of financing two test models.

Obviously the airplane must be proved to be safe. Second, it must not damage any person or any part of our environment. The bill passed yesterday by the Senate goes a long way to protect U.S. citizens from one effect of supersonic flight—the sonic boom. This legislation together with Federal regulations and the self-restraint of the airlines assures airport neighborhoods of no greater disturbance than that produced by current jets.

I listen very carefully to the views of a number of sincere scientists when they speculate about the effects of supersonic flight on the atmosphere around us. This facet of the SST has received my painstaking study. They would be the first to admit that they are speculating, but men should speculate before taking major technological steps. And it seems to me that few military or space projects in the last 10 years have been subjected to so much research and speculation. However, the time has come for actual flight to determine whether the concerned scientists or the SST advocates are right. That is why this appropriation is limited to prototype testing and development. I do not know the impact on the atmosphere. I do not believe others have any proof or evidence. It is clear, however, that the extensive debate and controversy are a warning to the administration that before an SST is permitted to go into production there must be assurances that it not only is safe but ecologically acceptable.

I have long expressed my concern for the health of the airline industry. It is obvious that it could not afford to buy this airplane if it were being delivered today or tomorrow. Despite current financial problems, there is every indication that the economic future of the industry is sound. And as the airlines moves out of the present difficulties in the coming months and years, they should be able to afford the aircraft when its tests are completed and, assuming the tests are successful, it is ready for delivery in the late 1970's. In fact, the heads of two airlines, American and Pan American World Airways, have indicated their willingness today to proceed with the program if it meets the tests I think are required. We must remember that if the tests are successful the airlines and the manufacturers will be required to return the temporary Federal investment out of the sales on the commercial market of these planes. In fact, the airlines already have invested approximately $81 million deposited to the U.S. Treasury since 1963.

So, far from being a giveaway program, or a program where there is no direct financial return to the Government, this is a businesslike investment.

Mr. President, today I received a letter from Secretary of Transportation John Volpe analyzing some of the SST issues. I ask unanimous consent that Secretary Volpe's letter be printed in the RECORD.

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

THE SECRETARY OF TRANSPORTATION,
Washington, D.C., December 3, 1970.

Hon. JENNINGS RANDOLPH,
U.S. Senate,
Washington, D.C.

DEAR SENATOR RANDOLPH: I appreciate the opportunity to comment on the SST. After our conversation I asked the staff to put together a few ideas which I hope will be useful to you as you consider this afternoon's vote.

As I understand it, the primary points at issue are:

(1) The environment. We must bear in mind that all of the environmental objections raised to the SST are as yet theoretical; that is, *they are possibilities*. There is not a single proven environmental consideration which would rule out the successful building and operating of the American SST.

We have launched on and are continuing a comprehensive program of research to check out every possibility of environmental damage. The Administration is committed to the proposition that should any firm damage appear as a result of the research we will not proceed with the production aircraft.

(2) Airport noise. This is a subject that has been widely discussed but is badly misunderstood. The facts are that current projections of SST noise indicate that during the take-off the present state-of-the-art in SST engines will produce noise three or four times as loud as the standard jet for subsonic jets. What we must understand, however, is that the noise levels are constantly being reduced by new technology and that the production aircraft is at least eight years away. In other words, we have eight years in which to bring the noise level into line with the proposed standard. We should also recognize that most of today's subsonic jets themselves do not meet the proposed standard. In other words, even if there is no appreciable change in the state-of-the-art with the SST, it will not be much noisier than present subsonic jets during take-off.

The very significant point which is overlooked, however, is that the SST is *quieter* than present jets while over the community, either taking off or landing. Many SST opponents have made the mistaken assumption that "sideline" noise described above means noise over the community. While the FAA has had literally thousands of complaints about community noise, they have yet to receive a single complaint about noise which is generally confined to the airport itself. I think it is significant that in the area of community noise the SST is significantly quieter than subsonic jets.

(3) Employment. While the estimates vary on the employment impact of the SST, a conservative figure is 50,000 direct jobs. When you add up the number of Federal taxes, State and local taxes, and royalty payment dollars which will come as a result of this program if it is successful, it is clear that it can be a very significant contribution to the economy. Far from being a "misplaced priority," it is potentially an investment which will reap rich dividends in helping the Nation meet its social obligations. I think the point is sufficiently obvious that I need not belabor it further.

(4) Some additional considerations. Many people have been concerned in the past with the sonic boom. The Administration has now made it clear that we would support legislation which would prohibit boom producing flights over land. Some have turned their concern to the effects of low-level booms on the water. These people should realize that this airplane will be physically incapable of laying down a low-level boom. If it attempted to do so, it would fly apart. It will reach supersonic speeds at 60,000 feet, and the effect of its sonic booms upon the water will be nil.

There has also been concern expressed about a Federal commitment to participate in production financing. While this may have existed in the Kennedy and Johnson Administrations, this Administration has made it clear that its financial commitment is to the prototype only. There is no possibility that this will turn into a multi-billion dollar subsidy for the building of production aircraft.

One final thought—we have already invested over $800 million in research, development, and hardware. If the program is terminated now, we shall have to spend close to $200 million more in cancellation costs. What will the Federal Government do with one billion dollars worth of research, all of which is promising and optimistic, which cannot be carried forward? Do we simply ignore that investment? Or do we try to auction it off at a substantial loss? I am convinced that the logical thing to do to avoid paying the cancellation costs is to put the additional money into the research needed to finish the project properly. We will then stand an excellent chance of recovering all of the investment through royalty payments as well as billions of tax dollars from the economic activities it generates. I hope that this is useful for you and that you will be able to give us your support.

Best personal regards.

Sincerely,

JOHN.

Mr. HARRIS. Mr. President, development of the supersonic transport is a subject which, like the proposed plane, has generated a boom of controversy. The House and Senate Appropriations Committees have both approved an appropriation of $289,965,000 requested for fiscal year 1971 to continue development of the SST this year.

Many considerations weigh against the continued pouring of the taxpayers' money into this questionable project. These range from concern about national priorities to the very real dangers of noise and pollution.

According to President Nixon, our Nation cannot afford to build hospitals and health care facilities, as evidenced by his veto of legislation authorizing these programs on the grounds that they were too costly. The shortage of hospital and other health care facilities is increasingly acute. Many jobs in our depressed construction industry would be filled in building these facilities vital to the health of our entire Nation. Yet, this expenditure was said to be unwise and bad for the economic picture.

The same administration, however, approves the spending of nearly $300 million to continue work on the SST. This, they say, is not bad for the economy. But how many Americans will actually

be benefited by the SST, when and if it ever becomes operational?

For an airplane to function, it obviously must have a place to take off from, and a place to land. This assumes either use of existing airport facilities, or a new system of airports. The biggest drawback of SST, insofar as use of airports is considered, is noise. The sideline noise generated by the SST is estimated to be anywhere from 4 to 50 times as annoying as that of present jets. The Airport Operators Council International, composed of governmental bodies which operate the principal airports in the 50 States, Puerto Rico, and the Virgin Islands, has made its position clear:

> We therefore respectfully urge the Senate to approve the expenditure of public funds for further development of the SST only if the Congress and the country can be assured beyond doubt that the SST will meet the stringent noise standards necessary to permit it to operate at existing airports.

The Airport Operators Council has worked in the past with the problems of noise resulting from subsonic air travel. Since 1958, when commercial jet air travel was introduced, airports have expanded their size and increased operations. Congress in 1968 enacted legislation requiring certification of new and existing aircraft for noise acceptability. With the increase in air traffic, a multitude of lawsuits for damages and injunctive relief have been filed by citizens infringed upon by the excessive noise. If present levels of subsonic noise create problems of this magnitude, one can only shudder to think of citizens and community reaction to the noise pollution of SST. The noise level limitations in the bill passed yesterday in the Senate give no guarantee that a commercially feasible plane will result, even though continuing appropriations are made.

Our community presently have airport facilities which have become closer to residential property due to growth patterns of our cities. To build an entire new system of airports in more uninhabited areas would be prohibitive in cost, and out of all proportion to the supposed benefit to be gained from SST. Further, the ground transit time would cancel much, if not all, of the time to be saved by use of SST.

Another problem raised by SST is the sonic boom. This has been supposedly cured by the Senate bill limiting overland flights at supersonic speeds. However, once the SST is a reality, it is not hard to envision the change of this law to enable the SST to operate at a commercial profit.

Still unanswered are the relationships between flights of the SST and the world climate. Scientists do not all agree on effects of supersonic flight on the stratosphere; however, to spend another $300 million without serious environmental research and clearer knowledge of the possible effects would show a lack of plain common sense.

The fact that we have already spent $700 million on the SST is not persuasive. A bad deal is a bad deal, and the sooner we acknowledge this fact, the more we will ultimately save. If we are concerned with our national image and ego, let us look to our manned space flights to soothe our feelings about our scientific capability. I therefore urge that the Senate withhold appropriation of additional funds for development of the SST in the fiscal year 1971 budget.

I take this position again this year despite the fact that many people who work in the aerospace industry have urged me to do otherwise.

Jobs are our greatest need in this country. People want to work. Many are needlessly out of work. Many fear they may lose the jobs they have.

But, Mr. President, there are plenty of jobs which need to be done in this country. We don't have to fight a war or build an SST or continue unnecessarily high military expenditures as a kind of WPA project.

With the proper governmental attention industries and workers can be shifted to the production of antipollution devices and mass transit equipment, for example.

Other jobs in the fields of health, education, law enforcement and rebuilding our cities face critical manpower shortages.

The plain fact is that with all our pressing national problems, an increasingly hard-pressed national budget and with taxpayers already loaded down—and with the serious questions which have not yet been satisfactorily answered concerning feasibility of the SST and the problems of noise and air pollution—the government should not again this year subsidize the building of this aircraft for private industry.

Mr. CRANSTON. Mr. President, the air transportation industry, and the American people as a whole, would be far better served if the huge public and private funds contemplated for the SST were invested instead in making flying safer and more convenient for the vast majority of the flying public.

The continued investment of Federal money in the construction of prototype SST's will not improve the strength and stability of the aircraft production industry, nor will it contribute to the real prosperity and permanent employment of the people involved.

Instead, it is diverting the aviation industry and the Nation from the positive direction we should be taking toward modernizing air travel and is leading us down a costly and uncertain path.

Far too little is known about commercial supersonic aircraft.

Nobody knows which economists are correct—and which are wrong—in the running debate over whether the SST would improve or worsen U.S. balance of trade.

Nobody knows whether an SST would be economically viable, whether the taxpayers of the United States and the stockholders of private companies will make money—or lose money—on the vast investments that would be required. What, for example, would an economic failure with SST do to the many American airlines that are already facing severe financial problems?

Nobody knows how water vapor and other emissions from a fleet of SST's at 60 to 70 thousand feet will affect the earth's climate or energy production; the construction of two prototypes will not provide the answers.

Nobody knows how sonic booms will affect our oceans or arctic land masses, nor whether SST sideline noise can be sufficiently quieted to permit the planes to use existing airports.

In contrast to the uncertainties of the SST are the all too well-known problems currently facing aviation in America. Faster and higher air travel is not the only consideration in sailing through the skies. There are other, far more urgent considerations that cry for attention.

Because of inadequate research and development in air navigation and traffic control, many lives are tragically lost and many more are needlessly threatened in crashes and near misses in our crowded, uncontrolled skies. It is ironic that the same administration that is asking us to spend $290 million this year on the SST is proposing to sidetrack $250 million that is supposed to be spent on airport safety.

Too many planes get stacked up at too many airports every day, unable either to take off or land on schedule. There are so many delays and long "holds" at crowded airports that a passenger on a jet going from one airport to another in the Northeast corridor averages a mere 60 m.p.h., and the FAA forecast a 170 percent increase in the number of passenger airplanes by 1979.

Too many of us cannot reach airports, or leave them once we land, without enduring endless traffic jams and adding to the air pollution of our already polluted city streets.

Too many present aircraft make too much noise and spew out too many noxious fumes.

Development of the SST will solve none of these problems, yet they must be solved if the American aviation industry is to grow and prosper.

Nor will an American SST protect the industry from a major competitive threat, as claimed.

The real competitive threat the air industry faces is not the Concorde nor the TU–144. England, France, and the Soviet Union have all expressed growing doubts about continuing their heavy investments in these questionable planes. The real competitive threat comes from the rapid development in Japan, Germany, Britain, Canada, and France of short takeoff and landing planes, STOL, and vertical takeoff and landing craft, V/STOL.

With STOL and V/STOL planes an airport need merely be large enough for a terminal, a short landing strip and a parking lot; it would not need 2 miles of runway built on 2 square miles of land as will be required by the SST. Conveniently located small airports, close to where the traveler lives or works, could replace monstrous airfields far out in the country. And thousands upon thousands of those who make up the flying public could be better served through such commuter aircraft—in contrast to the limited number of jet setters and other international travelers who would benefit from the SST by being able to eat pate de fois gras in Paris an hour or

two sooner. That is about the only advantage to travelers, since it is increasingly recognized that those with serious business to conduct—including significant decisionmaking—had better defer such matters for at least 24 hours after arrival if they have flown through more than four or five time zones, if they want to avoid grave risk of committing grievous errors.

While we have been focusing our attention on a flying white elephant to serve the affluent few, foreign governments have been helping their aerospace firms develop craft suited to the traveling needs of the many. Because of our shortsightedness, foreign governments and foreign industries are well on the way toward dominating the real future for commercial flying—England has the vertical takeoff fighter plane, the Hawker-Siddeley-Harrier; France has the Breguet 941S, a 55-seat STOL which can land on a 650-foot runway, and Japan is developing a STOL that can land in harbors and large lakes.

The Japanese have been extremely active in meeting their growing needs for short landing planes. By 1975 they will be ready with the Nikon Y S–33, a fanjet plane capable of carrying 150 passengers and taking off on runways under 5,000 feet. Americans have watched the Japanese move in our automobile, television, camera and other highly technological markets with astounding swiftness and efficiency. Japanese STOL development is an example of their determination to fill a production gap created by lack of American foresight and initiative and by our preoccupation with supersonic development. They are also moving into the development of a vertical takeoff plane using vertical lift technology acquired in licensing agreements with American helicopter manufacturers.

Our country possesses the technological capability of resolving many of American aviation's still unresolved problems. Devoting our time, attention, and resources to tackling these problems would do far more for more aerospace companies, airlines, the people they employ and the people who depend on their products and services than would further development of the SST.

Let us get off the SST hang up and get our sights back on the right runway. Let us forget the SST and focus Government and industry time, talent, and money on the real needs of American aviation today: easier, faster access to and from airports; fewer delays in landing and takeoff; greater flying safety; nonpolluting quiter aircraft, and short landing-takeoff airplanes capable of feeding smaller airports more conveniently located for the flying public.

I shall work for sound programs and appropriations to these ends.

I believe we should continue our research into the unknowns, environmental and otherwise, of supersonic transport. I certainly would have no objection to faster commercial planes if they can be built without adverse economic effects on the United States and on the aerospace industry and its employees, if they can be operated without adverse physical effects on its passengers, and if they can be flown without adverse ecological and environmental effects on our Nation and the world.

If we decide to drop plans for building the two SST prototypes at this time, I shall seek legislation to deny foreign made SST's landing rights at U.S. airports until we know that the environmental questions have been resolved. The threat to the environment is as great from a foreign-built SST as from a domestic product. We must protect all our people from environmental damage and reduce the danger that others may injure us either environmentally or economically.

In the meantime, we would do well to listen carefully to Mr. Scott Crossfield, division vice president of Eastern Air Lines, who complained before a House subcommittee recently that in order for Eastern to test a STOL craft:

> I had to go to France to get the airplane (Breguet), England to get the elements of the navigation system, and we are also looking to England and France for quiet and nonpolluting engines. I think that should be of very great interest to anybody in this country, how it happens that we are going back there to get the things that really we should be doing.

I have not come to my conclusions about the SST easily or lightly. Views for SST and views against SST are firmly buttressed on both sides with all sorts of facts and figures, and they are strongly held—particularly in California. I have read deeply on the subject, and consulted widely.

Among those with whom I have consulted are a number of leaders of the aerospace and airline industries. I can assure you that they by no means unanimously favor going ahead with the SST.

Dropping the SST need not cause a further drop in employment in the aircraft industry. On the contrary, spending Federal money more wisely on improving airports and aircraft, on developing mass commuter air transit, and on increasing air safety will create many more jobs for aircraft industry workers who possess valuable special skills. I intend to do everything I possibly can to see that the Federal Government encourages and financially supports aircraft industry conversion to meet these and many other pressing domestic needs.

Mr. GOODELL. Mr. President, this year has been marked with significant debate and important first steps in Congress to eliminate now and prevent future unnecessary and wasteful Government spending. These efforts must be sustained if "re-ordering priorities" is to have real meaning and impact on the living of our people.

"Re-ordering priorities" must continue to signal the "promise of change" and we must guard against the relegation of the phrase to the dismal category of convenient cliche.

Today we have a chance to fulfill this promise of change. The question is on the further funding of the SST program. We have before us an amendment to cut the $290 million requested for continued government spending on SST prototype development. I shall vote for this important amendment.

Debate on the SST has been thorough. Many of the arguments against the SST have a familiar ring to those of us who have also examined closely costly and questionable military weapons. Arguments against the SST include environmental costs; mounting dollar cost to the Federal Government; extra costs for side features, such as new airports far away from populated areas; and the yet to be answered questions, such as how to save that time gained in airflight when passengers at remote airports want to get into cities.

Proponents of the SST say that it means jobs and hence, a real reason to continue Government funding. Testimony before the Joint Economic Committee severely questions the alleged employment benefits of the SST. Beyond this testimony, is the point that jobs are sorely needed to tackle the real pressing problems of our people, one of which is hardly supersonic transport development. Clearly, Government funds rather should be spent on job development in areas of priority needs of our people.

Hopefully, we have learned from past mistakes. The XB–70 was one of those costly mistakes. It can now be seen in the Air Force Museum in Dayton, Ohio. From development-to-display, this plane cost the taxpayer over one billion dollars. It contributed nothing to its defense-intended objective.

We can hardly afford the questionable luxury of another bird perched in a museum of ill-advised expenditures. The time is for change in Government spending from capricious funding to careful assessment of real needs and full funding to meet these real needs.

Mr. MATHIAS. Mr. President, history plots its own course, and seldom has this been more evident than in the chronicle of the SST. Forces put into motion by diverse agents in Western Europe, the Soviet Union, Japan, and other parts of the world have created imperatives that the United States cannot ignore. By prudent and timely action we can perhaps deflect and direct the forces already in motion. I seriously doubt that we can either control or extinguish them.

Under these circumstances we do not have the opportunity to make the initial decision as to whether the earth shall be subjected to the additional potential hazards inherent in the creation and employment of supersonic civil transportation. Planes for this purpose are now flying and are available for purchase by a worldwide consuming public that has shown an active appetite for them.

If this were not so, I would question whether we should move toward supersonic air transportation serving a small segment of world population when basic ground transportation serving all the Earth's people is so inadequate and so antiquated. If this were not so, I would question whether the funds necessary for this purpose might not be better utilized in providing vital social services now in short supply, such as medical care, education, research, and housing. But wishing will not make it not so.

Further, in large part, these funds are already spent. They cannot be recovered

and reallocated to schools and hospitals anymore than Humpty Dumpty can be glued back together again. We have already invested approximately $750 million to date. Everyone agrees that between $100 million and $200 million will be required to close out this project if it were canceled today. The sum needed to complete the development of two prototypes is very little more than that. In this calculation the obvious priority of schools, hospitals, and housing units will not be hopelessly and permanently prejudiced. If proponents of the SST are correct, these programs may ultimately benefit.

In a cutthroat competitive world, we stand to lose heavily if we do not compete effectively and seasonally. If we abstain from entering the supersonic transport competition when other national entries are now flying we will suffer in common with the rest of humanity all the dangers and drawbacks involved, without any compensating benefits.

On the other hand, by developing an American model which is of superlative quality, which meets the most rigorous standards of environmental protection, which offers the world the best pattern of protection from pollution, and which will advance the science of aviation in harmony with the environment and not at its expense, we can do a positive service.

To believe that we can do this is a big order. I am not sure that we can. But it is worth the effort to try, upon the firm understanding that we shall not compromise with the integrity of nature, that we will abandon our investment rather than risk our survival.

Many times in recent years we have gambled on technical success in the field of new weapons systems. Sometimes we won, other times we lost. This is a more positive kind of chance, the chance to achieve a civil aircraft of practical peaceful utility with the odds as good if not better than many of the games of Pentagon roulette played so often with such high stakes. If we win, the place of America in the front rank of peaceful technology will be secure. If we do not compete, others will take that place.

With these serious reservations, and with the conviction that our success must be total or the project must be abandoned as less than useless, I am prepared to support appropriations for development of two prototype SST planes for experiment and evaluation.

Mr. SPONG. Mr. President, quite aside from the economic questions it raises, the unresolved environmental problems posed by development of a U.S. supersonic transport are of such a serious nature that an appropriation for two SST prototypes cannot be justified.

Of particular immediate concern is the high level of noise which would be generated by the SST in the vicinity of airports. This is noise created in normal operations such as landing, taking off and taxiing, and is quite apart from the problem of sonic booms. The SST's noise field radiating perpendicular to airport runways, called sideline noise, would be substantially greater than that of conventional subsonic jets. Expressed in terms of the standard used by the Federal Aviation Administration to assess annoyance, sideline noise from the SST would exceed the current FAA standard by 3 to 4 times, and the noise of the new Boeing 747 by 4 to 5 times.

Mr. Russell E. Train, the distinguished Chairman of the Council on Environmental Quality, recently expressed doubt that the added noise burden from the SST would be acceptable to communities adjacent to our existing airports. Four possible solutions have been suggested to the sideline noise problem: Technical improvements to the airplane itself; confining the noise to the airport; converting communities near airports into industrial areas, and developing new airports.

Mr. Train has commented pessimistically about each of the contemplated solutions. He has said it is doubtful that current technology can reduce the required lowering of noise levels, that it is not practical to confine to airport boundaries the noise projected by the SST, that the redevelopment of areas near airports would require the expenditure of billions of dollars, and that it is unrealistic to assume the country would accede to the airport investment necessary simply to accommodate the SST.

The effect of sonic booms from the SST also is of great concern. The Department of Transportation has acknowledged that such booms would be objectionable to the public, but has opposed legislative efforts to prohibit supersonic flights over populated areas. While it is assumed that supersonic flights over the continental United States would not be permitted, great pressures would be exerted to allow such flights if it were found that the economic success of the aircraft were dependent upon overland flights at boom-producing speeds.

I say this mindful of the fact that on Wednesday the Senate passed a bill which is designed to deal with some of these noise factors. While I supported that bill and believe it is a constructive step, I would note that at this point it is only a Senate-passed bill and not public law. Moreover, to the extent that the bill depends on FAA noise regulation, there is some question in my mind whether it will in fact resolve the noise problem. But in any event, the bill deals only with noise and does nothing about the other environmental factors and the economic questions involved.

The long-range implications of the SST are even more disturbing. The aircraft would be flown at altitudes of 60,000 to 70,000 feet, and would discharge substantial quantities of water, carbon dioxide, nitrogen oxides and particulate matter. At such altitudes, it takes approximately 18 months for a water molecule to descend to the lower atmosphere. A fleet of 500 supersonic aircraft could increase the water content of the stratosphere by as much as 50 to 100 percent over a period of years.

Mr. Train's observations about this phenomenon are as follows:

> Water in this part of the atmosphere can have two effects of practical significance. First, it would affect the balance of heat in the entire atmosphere leading to a warmer average surface temperature . . . Second, water vapor would react so as to destroy some fraction of the ozone that is resident in this part of the atmosphere. The practical consequences of such a destruction could be that the shielding capacity of the atmosphere to penetrating and potentially highly dangerous ultraviolet radiation is decreased. As in the case of surface temperature, we do not have adequate knowledge on which to make secure judgments as to the practical significance of the effect of water on the ozone. Finally, the increased water content coupled with the natural increase could lead in a few years to a sun shielding cloud cover with serious consequences on climate.

Mr. President, the potential environmental problems associated with the project are so grave that we should stop work on prototypes until more information is developed. This is a situation in which the cart is before the horse. It is my understanding from a review of the facts available that flights of the British-French Concorde supersonic transport and our own supersonic military aircraft would provide the data on which to assess the magnitude of the problems, and to make a more intelligent judgment on whether prototype SST development should be continued.

The necessary research, in my judgment, ought to be completed and evaluated before we consider investing any additional funds in SST development. Even then, I would suggest there is a serious question of whether the SST should be given priority over the many other programs which are competing for scarce funds. But, at the very least, we need to know a great deal more than we do about the environmental impact of the SST.

I am constrained to believe that the desire to proceed with SST development is based on the premise that new things automatically are better because they are bigger or operate faster. Our technology is developing at such a rapid pace that new products are being manufactured and marketed with little consideration to their impact upon man and his surroundings.

The time has come, Mr. President, when we must consider whether something new is worthwhile in terms of the total context of the environment. We cannot allow our technology to become incompatible with the ecological systems that support human life.

Mr. STEVENS. Mr. President, the SST program has been characterized by its critics as a waste of national resources, or at best a misplacement of priorities. There are compelling reasons, in my judgment, why such criticisms are invalid. If the SST program has been a mistake, then indeed the Congress must accept the full measure of responsibility, for its continuation has been reviewed almost annually and its worth to the Nation weighed long and carefully. The arguments in favor of the U.S. SST program have, in fact, been heard and observed by the Congress many times. I submit that those arguments remain sound, and that the program is in the national interest.

But for those who contend that America is wrong to pursue an option on the supersonic air transportation market of the future—and the prototype program

we are engaged in does represent an option, not a commitment—the costs of ending that program seem not to have been considered. I would like to invite the attention of my colleagues to that subject, for it is of great importance to our future deliberations.

Aside from the national benefits that would be lost by our forfeiture of the SST market, the waste in resources would be staggering.

To begin with, the Government has almost $800 million invested and spent in support of SST design and development. We have a contract stipulating the full return of that Government money on completion of a successful production program; however, by the terms of the same contract, those millions are lost by termination of the program for the convenience of the Government.

Then, second, there is little public awareness of the success of the SST engine program. Eight engines have been built and operated on the test stand. They have met performance requirements; in fact, the GE–4 engine for the SST has set a world's record for thrust. Tools, parts and materials for another 27 equivalent engines have been ordered. These are the flight engines that would have to be canceled if the program were to be halted. I do not have the precise calculations of the costs involved here, but more than $50 million has been invested in materials alone for these 27 flight test engines.

Third, construction of the prototype airframe is moving ahead rapidly. Major subcontracts have been awarded. A large amount of tooling has been completed, and fabrication is underway on the many thousands of parts which next fiscal year are to be assembled into the two prototype aircraft. Not only Boeing's work but the work of literally hundreds of companies would cease, and the advancements in technology the SST represents would grind to a halt.

Fourth, there is the employment factor, where the waste of a canceled SST program might be most acutely felt. Employment in the aircraft industry is already down 13 percent over last year's total. Stopping the SST program at this point would put another 14,000 people throughout the country on the labor market overnight, without any ongoing programs to absorb them. Many of the people affected would be highly trained, high salaried professionals whose job displacements would be keenly felt in those communities sustained in large part by the aviation industry. In addition, another 28,000 indirect jobs in supporting services would be lost.

In addition to these considerations, all of which add up to gross waste, there are the terms of the contracts to be met. Should the Government default on the cost-sharing contracts held with Boeing and General Electric, we would be obligated to return to the contractors their share of the development costs to date. The Congress would have to appropriate funds to pay those costs. The Congress would also have to appropriate funds to cover the expenditures incurred since the beginning of this fiscal year under the continuing resolution, which is the only way the program has continued to operate. The Congress would also have to appropriate funds to cover termination costs and, perhaps, to restore the nearly $59 million the airlines have invested in the good faith that the prototype program would proceed to completion.

In short, the minimum appropriations the Congress would have to vote to discharge the Government's responsibilities under the terms of the contract would be $177 million as of the end of this month. The $22 million on deposit in the Treasury to cover SST delivery position reservations would have to be refunded to the airlines increasing the total to $198 million. Additionally, should we accept a moral obligation to repay the airlines' contributions made to help defray the development costs, that sum would total $257 million.

We face a situation whereby the costs to terminate the SST program are now fast approaching the amount being requested by the administration to continue it through fiscal year 1971.

One further point is worth noting. On completion of the prototype program, the Government's contractual agreements with the manufacturers and the airlines will have been satisfied. Should we proceed to that point and then for whatever reason the SST program should be stopped, the investments of the manufacturers and the airlines would not be refundable.

I do not argue here today that the SST program can or should be justified on the grounds of what has already been invested in it. The potential benefits to the Nation in jobs, exports, balance of trade and SST-generated tax revenues are in themselves persuasive arguments for continuing the development program, but we would be ill-advised to ponder the cessation of the program, for reasons good or bad, without at least considering the waste such an action would entail.

There should be no question of the direction we must go. I for one do not choose to vote for the appropriations which would be needed to terminate the program and put to waste the productive efforts of nearly 10 years of work on a project of great potential importance to the United States, when for virtually the same appropriation we can bring that project close to fulfillment.

I say the decisions made in the past and repeatedly confirmed by the Congress have been sound ones, and merit our continued fiscal support.

Mr. CANNON. Mr. President, this year marks the 50th anniversary of the first international airmail service. In October 1920, Boeing Model B–1 float planes began carrying the mail on a regular schedule between Vancouver, British Columbia, and Seattle, Wash.

In half a century, aviation has grown from a novel and sometimes risky mode of transport to a safe and accepted form of transportation preferred by tens of millions of people. The remarkable ability of the industry, in producing successively better and more productive aircraft, and the initiative and resourcefulness of the airlines, in providing increasingly better service at lower fares, have combined to make air transportation a vital public service and a major factor in our economy.

The growth of air travel has been especially pronounced in the past two decades. In 1949 U.S. scheduled airlines carried fewer than 17 million passengers. In 1969 they carried more than 159 million passengers. Twenty years ago only 2.2 million passengers traveled by air between the United States and other countries. Last year 18.3 million passengers flew international routes on our air carriers.

Looking ahead to the 1980's, forecasts tell us we can expect some 28 million Americans to be traveling by air internationally, which is over 10 percent of our population. Traffic on the North Atlantic routes, where passenger volume increased 243 percent in 8 years, reached 6 million in 1969 and is projected to be 28 million in 1985. Growth rates of 14 percent through 1975 are anticipated; 8 percent annually in the years 1975–80. This growth trend in international air traffic is indicated by the fact that in a period when the domestic passenger growth rate is leveling off, as it is at the moment, international air traffic is increasing. In 1 recent month, passenger traffic on North Atlantic routes increased 28.9 percent over the same month in 1969.

The challenge to the industry is fourfold. The airlines, in planning for the 1980's, must: First, hold fleet sizes to manageable levels and offset cost escalation; second, maintain reasonable fare levels; third, provide for the growth in travel without diminishing comfort or safety; and, fourth, improve the financial health of the industry.

In short, the industry faces some difficult challenges that must be met if aviation's future is to be as illustrious or as productive or as fruitful to the public interest as its past. The development of the U.S. supersonic transport, while not the single or all-purpose answer to aviation's needs, is nevertheless necessary to the satisfaction of air transportation in the 1980's and beyond.

Studies show that airlines operating the larger, faster, more efficient U.S. SST in the 1980's will not need to charge any more than normal fare to make SST's profitable. Some airlines may choose to add a small surcharge to the prevailing fare so that their subsonic jetliners will continue to carry a share of the market. But there is no reason to assume, as some observers do, that the SST's will be reserved for the wealthy or the members of the so-called "jet set."

Aviation has grown and matured rapidly, as developments in the short 50 years of commercial aviation history attest. The aviation scene continues to change rapidly, and the term "jet set"—which may have been relevant for a short time when jets first came into use—is totally out of date today. The SST in the 1980's like the jets of today, will benefit the businessman, the tourist, the educator, the student, retired couples, honeymooners, servicemen—maybe even Members of Congress.

I have witnessed for many years the

development of air transportation, with admiration for aviation's accomplishments, and concern for its problems. To assume that the supersonic air age could arrive without some clouds on the horizon would be inconsistent with aviation's heritage. But to presume, equally, that aviation is not up to the challenge would be contrary to aviation's character and long record of proven performance.

The present jetliners proved the critics of the 1950's wrong, when they said jets would be inefficient, too expensive to operate, and incapable of competing with piston-powered airplanes. I believe the SST will similarly disprove today's critics. The prototype can be the proof. I favor continuing that program, as recommended by the Senate Appropriations Committee, in the interests of sustaining America's aircraft leadership throughout the second half century of commercial aviation.

Driving to the office last Wednesday morning I heard what I consider a very fine editorial broadcast over radio station WMAL. It is entitled "SST Showdown," is not very long, and reads as follows:

The Senate vote scheduled tomorrow on the supersonic transport has been heralded as a symbol of national priorities. It shouldn't be. It is a simple economic decision on a relatively minor appropriation in a customarily routine process. If Senators want to slay dragons of national priorities, let them cut some of the Pentagon spending . . . or farm programs . . . or foreign aid. The claims and counter-claims about the SST have been recited out of proportion to the project's real place in national life. We believe it is neither an environmental horror nor a public works project. It is simply a transportation advance that must be funded by the Government until commercial sales repay the investment. There is no alternative but Russian or Anglo-French competition. Environmental concern has been built into the project now, as a result of long debate. A vote for the SST tomorrow will be a vote for progress. It will enable the Senate to move on to more urgent problems. It is time to stop talking about the supersonic transport . . . and start flying it!

Mr. HRUSKA. Mr. President, I have a brief statement relating to the supersonic transport issue now pending before the Senate. Many Nebraskans have written me on this matter, both pro and con. There are reasonable arguments on both sides of the question.

The current issue before the Congress relates to research and development, specifically the construction of prototype aircraft. The administration believes that we should continue the study of the feasibility of this type of transportation, in order that an intelligent decision can eventually be made as to whether general use is advisable.

It seems certain that the world will have supersonic transport aircraft. It will be unfortunate if the United States is not able to compete in the vast market. We now produce about 80 percent of the world's commercial aircraft. It would seem unwise to take any step which would cause us to lose our position in this industry.

France, England, and the Soviet Union are already flying prototype supersonic aircraft. The Russians have announced that their TU–144 will be in service by 1972, or before. The French/British Concorde is expected to be in commercial service in 1974.

Some people say that to avoid air and sound pollution, the United States could frustrate other producers of the transport by prohibiting them to land in the United States. This is unrealistic; they could retaliate against us in many ways, including denying any U.S. aircraft the permission to land at their airports.

At the same time, I am very much concerned with the possible degradation of our environment. Certainly, before the world allows large fleets of supersonic transports to be used, we must be satisfied that they do not in fact represent a significant danger.

Mr. President, yesterday I voted to support S. 4547, to regulate public exposure to sonic booms by prohibiting supersonic flights of civil aircraft over lands of the United States, after adopting committee amendments and Magnuson amendment. This bill upon enactment will assure that production models of the prototype civil supersonic transport aircraft can operate only if in compliance with present noise limitations established by the Federal Aviation Administration.

With the above bill, coupled with reviewing much material both pro and con on the issue, I believe it to be in the best public interest to support the administration on this issue and I shall so cast my vote.

Mr. PEARSON. Mr. President, by virtue of my participation on both the Aviation Subcommittee and the Transportation Subcommittee of the Appropriations Committee, I have had the opportunity to study and consider in depth the arguments, pro and con, on the continued development of an American civil supersonic transport program.

Accordingly, I would like to emphasize a few points. First, supersonic flight is inevitable. Air passenger travel at speeds of two and three times that of sound will take place in our lifetime. No Member of this body questions this fact—there will be an SST. The question is whether the United States will continue to play a leadership role in the development of this aviation advance.

The British and French have jointly developed a plane known as the Concorde, two of which have been tested and 10 of which are under construction. The Soviet Union is currently testing its version of an SST known as the TU–144. And it is interesting to note, Mr. President, the development of both of these foreign SST's is being financed solely by funds provided by the respective governments involved.

Second, I wish to emphasize that the request before us today is a limited one. The Department of Transportation is asking only for sufficient funds to construct two prototypes. We are not being asked to build a fleet of SST's. Congress is merely being requested to continue research and development by building and testing two prototype versions of this aircraft in order to better judge the feasibility and desirability of actually constructing SST's.

Mr. President, many questions are yet to be answered before full production of this aircraft can be undertaken. Conflicting data on the environmental impact of supersonic flight must be satisfactorily resolved by the actual field testing of those prototypes. New techniques designed to reduce or eliminate supersonic booms must be developed before we fill the skies with supersonic transports.

In this connection, I call the Senate's attention to legislation passed by this body yesterday which will prohibit by law overland flights of any supersonic transport, foreign or domestic. This legislation would, in large measure, eliminate the concerns that many of us have held. Accordingly, I raise this important measure as an indication of congressional determination that concern for the environment will not be disregarded as we proceed with the development of an SST.

Mr. President, critics have raised the question of priorities. As one who is greatly concerned for the need to solve our many social and practical dilemmas, I am sensitive to the feelings that motivate criticism of this and other programs. But realistically speaking, Mr. President, the list of priorities is not inflexible. Times change. People and their needs change. Things that appear to be important today may not be tomorrow. For that reason I am persuaded, Mr. President, that failure to go forward with this program would be irresponsible. It would mean no return on a large national investment already made. It would mean a loss in technological leadership. It would mean quitting a 9-year research and development effort without reaching the intended goal. It would mean not reaping the benefit of the years of hard work which so many people in my State have given and will continue to give to this challenging program.

Mr. President, until now no other nation has been able to seriously challenge us in the field of aviation. I feel that in making this decision today we should indicate our confidence that our aviation industry can overcome any problems associated with supersonic flight in the same way that they were able to overcome the problems of flight to the moon. The future overall benefit to the United States, in my opinion, will be well served by such a decision.

Mr. COOK. Mr. President, today the Senate will once more consider whether additional appropriations should be approved for the development and construction of two prototype supersonic aircraft. By a very narrow margin the House passed this measure. The Senate Appropriations Committee also recommended its continuation. Now we must decide whether to accept the Department of Transportation's $290 million request for further development of the SST.

I voted against Federal funding for the SST last year.

I shall also oppose it today.

Very briefly, I would like to outline my reasons for doing so. First, a number of eminent scientists have also raised the question of atmospheric pollution by an SST flying at 60,000 feet altitude. The threat of a fleet of SST's introducing

large quantities of water vapor into the stratosphere possibly causing unpredictable weather modification on a global scale, certainly cannot be ignored. Further study of this problem should precede the commitment of funds for development.

Other qualified scientists have voiced their concern over the potential environmental effects of this aircraft. The sonic boom and sideline takeoff noise have been cited as having an advance impact on both the population and the wildlife. Yesterday the Senate approved a bill which is a step in the right direction toward eliminating these objections.

This legislation would prohibit supersonic flights of civil aircraft over the lands of the United States. It would also require the proposed civilian SST's to comply with the Federal Aviation Administration noise limitations. We should realize, however, that the latter is an administrative regulation subject to change.

Even assuming the best, the overland flight prohibition, while ostensibly eliminating one problem, also raises another. A number of qualified economists have said that such a prohibition would reduce the market demand for the aircraft, thereby reducing the Federal Government's return on its money invested under the royalty contract.

This form of Government participation also raises the question of our commitment to reorder our national goals and priorities. At a time when many of our needs in the field of transportation alone are going unfulfilled, I question whether the Federal Government should fund the development of a strictly commercial aircraft—which at most would benefit only one-half of 1 percent of all Americans.

Also, its proponents have argued that it would create a favorable balance of payments. Others disagree. Some of the Nation's top economists have stated that it would be a mistake to build an SST for that reason. They also contend that it would not benefit our balance of payments in world trade.

As a firm believer in our system of private enterprise, I seriously question the need for Government funding. The United States has achieved a dominant position in the field of international aviation because of our belief in this principle. I see no valid reason to alter it.

Also, if the SST is as economically viable as its proponents argue, then sufficient financing from the private sector should be available. The recent success of the Boeing 747 illustrates the principle that when a new development in aviation becomes economically sound, the private sector will be willing to finance it. In the matter of the SST, however, the private banks and financial lending institutions have been unwilling to invest any money in this highly questionable project. They believe it is a money loser.

Mr. President, I urge my colleagues to vote aye on the amendment I have cosponsored which would delete any appropriation for the SST.

Mr. FANNIN. Mr. President, during the past year we have been bombarded with the pros and cons of continuing the SST program. I have read, listened to, and studied the arguments on both sides of the question.

As a result, I have decided to continue my support of the SST program.

I would like to say that I realize that those who have written and otherwise contacted me in opposition to the SST are deeply concerned individuals. They have presented their case forcefully.

However, it appears that many of the arguments against the SST are based on what some people "fear" might happen—not on any proven data. Opponents of the SST also have relied to a certain extent on wishful thinking. They think that if the United States does not build a supersonic airliner, there will be no supersonic airliner.

We know that there will be a supersonic airliner. It already has been built across the ocean.

The questions now are how the supersonic airplane will be used, what actual effects on the environment are, and what regulations or laws will be enforced at the outset of commercial use.

These are of deep concern to me.

Mr. President, I believe that we have answered many critics of the SST program by passage of S. 4547 to ban supersonic flights of civil aircraft over lands of the United States.

This bill makes it clear not only to the people, but to potential purchasers of the super airplanes, that they are not to be flown over our inhabited land areas at speeds which would cause sonic booms.

As a practical matter, I really do not believe the SST would be flown over any inhabited areas of the United States at supersonic speeds even without such a law. Airlines certainly realize that this would be a public relations blunder, and that the people would rise up to stop such boom-causing flights.

Opponents of the SST have raised some other serious questions about poential effects of SST flights on weather and the atmosphere.

I agree with them that we should determine the answers to some of these questions before putting the SST into full production.

The bill we are considering would provide $4.6 million for "Research Into the Meteorological and Environmental Effects of Aircraft Flight in the Atmosphere." This effort should either bury the argument against the high-altitude flights—or bury the SST if the findings should be negative.

Mr. President, let me summarize what I have said so far.

I will support continued development of the SST. At the same time, I want to see more research on the potential environmental problems. And I believe we should make it crystal clear that the SST is to be a transoceanic carrier and not a transcontinental window-rattler.

Now, Mr. President, I would like to turn to some of the reasons that I think we must continue the SST program at this time.

First, as I said earlier, supersonic aircraft already is an accomplished fact.

Our planned SST would be the biggest and the best, however.

We must continue to develop this program or else forfeit our aircraft-production superiority to the Soviet Union, France, and Britain.

We already are suffering serious job drains because unfair foreign competition has driven American industries out of business or out of the country. We cannot afford to allow this to happen to our aircraft industry.

Unemployment already is too high. We face an even more serious problem as the administration further cuts back the size of our defense forces and as defense industries are phased out.

The SST program is one of a very small group of programs in this country today that has been judiciously planned to provide maximum benefit to the overall national economy from the funds expended.

The far-reaching effect of the vast subcontractor network reaches into almost every State in the Union. A concentrated effort to search out and identify potential suppliers has already provided a shopping list in nearly every State and is still going on.

The second and third tier effects of a subcontract award in any State will be felt by the butcher, the car dealer, the barber, the real estate man, the clothing store, to say nothing of those directly employed by the subcontractor. These benefits are nationwide and come at a time when we sorely need to provide jobs and incentives to bolster our national work force and supporting community activities.

The production program anticipated for this airplane can provide the States as well as the Federal Government with a substantial source of tax revenue for 20 years in the future. This is the type of benefit which we must have if we are to support programs so vitally necessary to keep our economy healthy and growing.

Handouts are not the answer—it is employment and productivity that we must look to for the future.

It has been argued that these benefits are overstated; however, the facts are that right today there are dollars being expended on the SST prototype program in 44 States—I cannot think of any program we could support which can make that statement and back it up with actual proof.

We are being asked to invest a little over a billion dollars to stimulate over $20 billion in future benefits to the economy. Much of this will be foreign capital which will flow into our economy—into the very heartland of the United States.

Even the smallest communities stand to benefit. Small subcontractors will grow and provide capabilities to these communities that we cannot even imagine at this time.

Let me reiterate—the effects of the dollars we have already appropriated are already being felt strongly throughout the Nation. The prototype program is well underway and we have living proof that our investment is sound.

The people affected number in the thousands and will continue to grow as time goes on. The importance of the spread of the SST program cannot be overemphasized.

We have recently been shown in a dramatic fashion, by the General Motors strike, just how many people are affected by a nationwide network of subcontractors. Virtually every businessman in the community feels the effect. The SST program in itself does not represent salvation, but it is a large building block which we cannot ignore. There are already too few of these on the horizon and they are not created overnight.

We have in this program a chance to support a large segment of our overall economy in a way which we have to like—by providing productive jobs that will create a product we can sell at our price all over the world.

Let me add another thought about a related field—utilization of aerospace workers. It has been suggested that the Nation's unemployed aerospace workers be redirected to environmental improvement programs.

This well-meaning suggestion ignores the realities of the situation. The majority of the unemployed aerospace workers have, for example, expertise in the field of aerodynamics, propulsion and power, electronic and electrical systems, aircraft fabrication and the like. This expertise and knowledge is the result of 4 to 6 years of advanced education and many years of practical experience. These are specialized fields and vastly different from the environmental field which requires knowledge and experience in other specialties. There is a difference between a sewage plant and a satellite.

In order for aerospace workers to become productive in the environmental fields a large training program would be necessary. It is estimated that it would take a minimum of 4 to 6 years before they achieve a comparable level of competence to that currently used for aerospace projects. The cost to retrain the aerospace workers would be quite high as well as the cost to relocate the workers and their families.

Mr. President, I am not suggesting that the SST should be retained as some kind of a WPA project. I am saying that it does provide thousands of jobs.

The SST is a lofty goal worthy of our Nation's best efforts. As we have over the past several years—through three administrations—we must continue to accept the challenge.

SST—THE UNITED STATES MUST ENTER THE SUPERSONIC AGE

Mr. BENNETT. Mr. President, Senate approval of H.R. 17755, the Department of Transportation appropriations bill for fiscal year 1971, will mark one of the significant events in the history of aviation in this country. With its approval, the United States will have committed itself to the age of the supersonic transport. The testing of the British/French Concorde and the Russian TU–144 clearly demonstrates that supersonic air travel is here. By approving sufficient funds for the SST, this Nation will have made the decision to remain the world's leader in transport design and production.

Aside from the historical aspect of the leadership by this country in the field of aeronautical design, there are several other aspects of the development that merit consideration. The economic impact of the SST program will be felt in potential sales, return on investment, generation of tax revenues, employment, balance of trade, and profitability to the user.

During 1969, the American aerospace products and services accounted for $3.15 billion in foreign sales. Without these sales, the United States would have had a dismal negative balance of trade of approximately $1.3 billion. If the SST is not developed in this country it is estimated that by 1990, U.S. firms will have lost an estimated $10 billion dollars in sales to foreign customers and will have been forced to purchase some $12 billion worth of supersonic transports abroad. However, the economic benefits that are to be gained from international sales are only a portion of the benefits that will result from the growth in our own domestic economy.

The SST program represents a unique Government-private industry financing arrangement in which industry will repay not only those initial funds invested by the Government, but also royalties which would generate additional revenues for the Government of about $1 billion. This is totally unlike the French and British program that is being financed entirely by government subsidies without any provision for reimbursement.

In addition to the return of the initial investment and royalty payments, the SST program will generate $5.4 billion in corporate and individual Federal tax revenues with State and local governments receiving an estimated $1.3 billion in tax revenues. These increased revenues will be a direct result of the earnings by the nearly 150,000 people that will be either directly or indirectly employed by those industries producing the SST.

As other areas of the defense and space programs are facing large cutbacks during the next few years, the importance of new areas for research and development created by the SST becomes increasingly important. Any reductions or slowdowns in this program would provide a crippling blow to an already weakened segment of our economy.

SST TECHNOLOGY AND NATIONAL STRENGTH

The technological capability of the United States has proven to be one of the major components of our strong economy. Throughout the 20th century the aerospace industry has been one of the Nation's leading developers of advanced technology.

Many of the problems confronting society today will be solved through judicious and intelligent use of these technological resources. The SST prototype program necessitates technological advance in materials structures, manufacturing methods, powerplants, and major subsystems. These developments will contribute materially to other segments of the aerospace industry and to an even wider number of nonaerospace industries. Just as the use of aluminum became very common in many areas following its development for the aircraft of the 1930's and 1940's, so will the SST help to insure that we will continue to benefit from similar technological advances.

We are only beginning to grasp the total scope of the technology advancements resulting from the SST program. Past experience has shown that the ingenuity of American industry in the application of technological improvements is virtually unlimited.

THE ENVIRONMENTAL IMPACT

One of the increasingly important technological developments that has resulted from initial research on the SST are those devices that will be used to control the chemical emissions from the engines.

One SST carrying 300 passengers at 1,780 miles an hour will emit no more pollutants than three automobiles traveling at 60 miles an hour. This means that the entire air transport fleet—including future SSTs—will emit less pollution per 1,000 seat-miles than any other mode of transportation yet devised.

Regarding noise and the sonic boom, it should be understood that the SST is not built to fly supersonically at low altitudes. It was developed to perform around airports and other populated areas just like subsonic jets. To prevent any annoyance to people on the ground, strict regulations will insure that the SST will fly over land at speeds less than 700 m.p.h. This is too slow to create a boom effect.

Over the oceans, the boom will be mild—about one-fourth ounce per square inch, comparable to the impact of a fisherman's spinning lure hitting the water. Neither marine life nor commercial sailing vessels will be harmed.

From an ecological standpoint, results of current studies indicate that air travel in general has proven to be not only efficient in traveltime and cost, but also the most efficient means of travel known to man in terms of minimal impact upon the environment. The SST should further improve upon this trend.

A TOTAL PICTURE OF THE SST

Mr. DOLE. Mr. President, in the past several years the SST program has had relatively smooth flights through committee actions and floor debates and has successfully landed with sufficient appropriations to keep the program progressing steadily. This smooth sailing repeatedly occurred in the face of numerous reviews in depth of the issues involved. This year, however, the SST has run into stronger headwinds. The House narrowly defeated an amendment to strike funds for the program from the Department of Transportation appropriations bill. The SST has been a subject of great controversy so far in the Senate. Many of my colleagues have examined the issue in even greater detail this year than ever before. Although I voted in favor of the program last year, I too have had reservations this summer which caused me to review all factors surrounding the issue in great depth.

My study resulted in a clear conclusion that the program is vital to this country. My examination of the pros and cons—charges and countercharges—allegations by critics and statements of proponents—convinced me that we as

a Nation cannot afford to stop the prototype development program.

My convictions were so strong when I completed this review that I set down my analysis of the issues on October 21, 1970, in a letter to a number of my colleagues, urging them to consider the facts that led me to my intention to vote in favor of continuation of the SST program. I believe it appropriate today to point out some of the reasons that convinced me of the importance of the program.

First let me say that the SST should not be supported, nor must not be defeated on one point alone. It is only when one considers the total picture, the many advantages that will accrue from the program, and evaluates the concerns that the opponents have expressed, that one can see in true perspective, the overall value of the SST.

In the environmental area I will be brief for the issues have been eloquently discussed by my colleagues. I summarize the important aspects as follows:

Possible pollution impacts have been examined by experts. The September 21 report of the Library of Congress legislative reference service and the study of critical environmental problems conducted by MIT have put the environmental concerns in the proper perspective. These reports indicate no reason for holding up the SST prototype program. The MIT report recommends that before the SST is put in large-scale production, further information should be obtained in certain areas such as the nature of particulates in the upper atmosphere and the possibility of occasional cloudiness at night over the North Pole in the winter time. My interpretation of these reports indicates no problem on the so-called greenhouse effect increasing the earth's temperature due to exhaust products, no problem on the concern for destroying a fraction of the ozone layer thereby increasing ultraviolet radiation on the earth's surface, no problem on solar flares or other radiation from space as it affects passengers and crew, no problem on formation of contrails or cloudiness over SST routes, no problem on creating a layer of dust that would significantly increase the earth's temperature. In other words, the environmental aspects are not what some alarmists would want us to believe. There are no overriding problems, and the areas in which further information is needed are being investigated by DOT, NASA, Department of Commerce, and the Air Force.

So much for environmental aspects.

On the subject of noise, I found that the SST will be quieter over the community where complaints originate and the sideline noise of the SST has been grossly exaggerated by critics.

In the economics area, it appears that the SST will be a moneymaker for the airlines. The great increase in productivity provided by the SST is needed in the 1980's. Without it far greater congestion of the airways would occur, and airplanes twice as big as the 747 would be needed to provide services for the projected traffic. The market appears real, and the favorable trade balance from foreign sales will help the Nation's economy. The aircraft industry, so long a top producer of export products, is facing diminishing commercial orders and severe cutbacks in military business. In addition to providing a boost in sorely needed employment, the SST program represents the only ongoing major step forward in advanced technology, the very point that made American aircraft industry the world leader it is today. Now that the Europeans are catching up with us in aircraft technology and challenging this leadership with a family of aircraft including their Concorde SST and also some very competitive wide-bodied subsonic jets, the SST becomes doubly important to this Nation as a fleet leader, a focal point of the future for advanced aircraft. To relinquish the leadership this Nation has enjoyed for so long by cutting out the heart of advanced commercial aviation, the focal point, in my opinion, would be folly.

My review also addressed the question of national priorities, and here I concluded that the SST has a very proper place in a balanced national transportation system. The SST is a priority program for the 1980's which we must invest in during the early 1970's. Actually, the investment, about 2.6 percent of the total transportation budget, is quite modest in regards to the vast returns it will repay to the Nation. People who ask the question why should we not spend the money on social needs instead of the SST do not seem to realize that the funds invested in the SST will be repaid manyfold in the form of royalties on sales, employment benefits, tax revenues, and economic well-being. The SST program, being a substantial revenue producer, will actually help pay for the human resource programs of the 1980's. The fiscal year 1971 funding support of human resources programs has surpassed national defense, and now accounts for the largest percentage of the total budget—$81.9 bilion or 41 percent. And it is forecast to grow in future years. Where will the Government find resources to pay for these future humanitary needs? We will find them in programs such as the SST.

Mr. President, my review convinced me that the many benefits of the SST—the productivity that the airlines need, the well-being of the aircraft industry, the balance of trade, the employment, the revenue producing resources, the balanced transportation system—all add up to a very significant total—a program vitally important to this Nation. We must not be sidetracked by the opponents' eloquent discussion of today's side issues. I urge Senators to consider the total impact of the SST on this country in the 1980's for today's investment in the SST is sound planning for tomorrow's national health. I urge Senators to vote in favor of the SST.

I ask unanimous consent to include my letter of October 21 at this point in the RECORD.

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

DEAR COLLEAGUE: I have voted in favor of the SST in the past, but have stated publicly my reservations about the proposed $290 million appropriations for Fiscal Year 1971. In reaching a determination, I have undertaken a careful examination of all factors involved. Let me emphasize that, although Boeing Company has a facility in Wichita, Kansas, only a small fractional proportion of the prototype contract directly benefits the Wichita area. This fact, therefore, did not influence my decision.

The United States Supersonic Transport Prototype Development Program has been the subject of considerable speculation and discussion in recent months in the press and Congress and by concerned individuals everywhere. I have been troubled by the sharp differences of opinion, but after an in-depth review have concluded the prototype program should go forward. It should be noted that in pursuit of information, we have contacted Boeing officials on several occasions. Frankly, the responses received have not always been consistent or accurate. Should the program go forward, it is my hope Boeing officials will redouble their efforts to keep Members of Congress informed with current and accurate information.

Some opponents of the SST program seek to imply that the Administration is indifferent to environmental or economic concerns, but I find the opposite to be true. The Department of Transportation's Supersonic Transport Office is dealing forthrightly with every issue. Where information is lacking, it is being sought; where clarification or verification is needed, it is being obtained. The technical challenges implicit in the program are being met, and are well within our Nation's capabilities. There is, in my opinion, no factual basis for yielding to the fears, undocumented theories and innuendoes which vocal critics have raised, and thereby jeopardize America's hard-earned leadership in aviation by failing to press forward with the U.S. SST prototype development program.

Based on my examination of the key issues, I have summarized my reasons for urging continuation of the prototype program. Hopefully, you will arrive at the same conclusion and support the program during deliberations on the Department of Transportation Fiscal Year 1971 budget when Congress reconvenes.

NATIONAL PRIORITIES

The issue of national priorities with regard to spending for the prototype program has been frequently raised. It has been alleged that money being requested for the program could be much better applied elsewhere for other transportation needs or for social and welfare programs. I am convinced the priority being placed on the prototype program is correct. It is *not* a high national priority program dollar-wise, but amounts to only about 2.6% of the country's transportation budget in this year of the highest funding for the prototype program. The FY 1971 transportation budget contains $1.5 billion for Airports and Airways, and there is $5.0 billion planned to be applied to this area over the next five years. Urban Mass Transportation has $3.1 billion budgeted, and there is another $5.7 billion for Highways. A revitalization of Water Transportation is planned with $420 million budgeted in FY 1971 and plans following to construct 30 merchant marine ships a year over the next ten years.

Billions are planned for social and welfare programs. In 1971 funding for support of human resource programs has surpassed national defense, and now accounts for the largest percentage of the total budget—$81.9 billion, or 41%.

The relatively small investment in fiscal 1971 (less than ¼ of 1% of the U.S. budget) for the prototype program will help pay for the human resource programs of the 1980's. It is most important that industry be able to provide the jobs and pay the taxes needed to maintain the strong and viable economy required to fund the social and welfare re-

quirements of the future. The SST program is a priority for the 1980's which will more than repay the modest place it occupies among the programs of the '70's.

Finally, a decision not to fund this program in FY 1971 would not result in additional funds for other programs. It would, however, *mean the loss* of a $708 million investment in technology plus cancellation charges in excess of $160 million. A decision of this nature would, in my opinion, be foolhardy and in derogation of all reasonable formulations of national priorities.

COMPETITION

At present, the British and French, as well as the Russians, have a strong lead in the entry of civil supersonic aircraft into commercial service. As recently as last week, one of the Concorde prototypes flew at Mach 1.85. Tests of both Concorde prototypes have exceeded expectations and delivery to airlines is scheduled for 1974. Testing of the Russian TU–144 is also progressing well—the aircraft has already flown at twice the speed of sound, or 1336 mph.

The State Department has reported a likelihood of a Concorde II being produced as a follow-on to the Concorde. It appears that West Germany may join Britain and France in funding and developing this advanced Concorde. It can be expected this model will have improved payload/range capabilities, as well as improved economics.

There is also evidence European countries are making a concerted effort to win the world's subsonic market, as well as the supersonic market, away from the United States. The U.S. now builds and sells about 85% of the world's subsonic jets. This market could be jeopardized by the failure of the U.S. to continue with the Prototype Program.

PROGRAM COSTS

Some critics have contended that support for the program is a subsidy to industry, and that overruns are inevitable. The facts are that the prototype program was initiated nearly ten years ago as being in the national interest. Development of a U.S. SST was a government proposal to industry, not industry's request to the government.

The prototype program is being managed better than any program of which I am aware. There have been no overruns, and no significant cost adjustments are in sight, if appropriation requests are met and schedules can be kept. The contracts are controlled to discourage cost escalations. When estimates are exceeded, the cost to the contractor *increases* and the government's share *decreases*.

Each company has a total awareness of the importance of maintaining tight managerial control to keep costs within estimates. The Boeing Company has affirmed, in writing, their commitment to program estimates which were established long ago.

PAYBACK PROVISIONS

I fail to understand why the government's participation in the development of an American SST is singled out by critics as a "subsidy" when countless examples of Federal investment in technology development in other areas are not so labeled. This is especially distressing in view of the payback provisions, which are unique to this program.

The 500-airplane royalty base is not only realistic, it is very probably conservative. On that basis, the recoupment of all Federal funds invested in the program by the sale of the 300th airplane is assured. If the prototype program is carried forward successfully, the government will realize a substantial profit on its investment.

ECONOMICS AND PRODUCTIVITY

Economic studies performed by DOT and Boeing have shown the initial production design will be a highly profitable aircraft in airline operation, with a range of at least the distance from New York to Paris at full payload. This exceeds the capabilities of the initial Boeing 707 by about 700 miles. If history repeats, growth versions will be produced with extended range, just as have developed in the cases of the Boeing and Douglas subsonic jets.

The U.S. SST will be profitable because the unique speed and capacity results in a productivity in seat miles almost twice that of the larger 747. Historically, the improved productivity of each new type aircraft has resulted in lower operating costs, thereby offsetting the effect of escalating airline costs and allowing airline fares to be reduced while the costs of other goods and services have been climbing sharply. The U.S. SST will be no exception. During its introductory period, higher than normal passenger load factors will reduce costs per passenger mile. Later, costs will be more resistant to inflationary cost influences of labor and maintenance.

The rapid growth in international passenger traffic will be met in part by supersonic transports, reducing the necessity for greater numbers of less productive aircraft. Not only will the SST be able to operate over an expanding network of routes, but it will also be able to spread departure and arrival times and relieve airport congestion. On the airways, the SST will utilize a new level of airspace above 55,000 feet.

As a result of rapid traffic growth, it is conservatively forecast that a U.S. SST would carry in 1985 as much traffic as the entire Free World traffic in 1969. This will mean an economically sound program for the manufacturers as well as the airlines. Proceeding with the program will help to insure the survival of the Nation's commercial aircraft industry and serve to prevent the export of jobs and technology to foreign manufacturers. It will increase revenue to the government through taxes and better enable the Nation to carry on needed programs for improving the quality of life for all people.

SONIC BOOM AND NOISE

The President and the Secretary of Transportation have stated that supersonic flight which would produce a sonic boom will not be permitted over the United States. Since that pronouncement in September, 1969, the FAA has issued a Notice of Proposed Rule Making which clearly establishes that sonic booms will not be allowed over land in this country.

The supersonic transport will be capable of operating from existing airports and will not entail an expensive modification of our airport system. The aircraft was designed from the outset to be capable of operating from any airfield which presently accommodates long range subsonic jets. As for airport compatability on noise grounds, it should be emphasized that over the community, where most noise complaints originate, the supersonic transport will be about one-half as annoying as the intercontinental subsonic jets.

ENVIRONMENTAL ASPECTS

Environmental claims and counterclaims concerning supersonic flight have confused rather than clarified the actual facts. An extensive study of what has been said by critics leads me to believe that their claims range from the exaggerated to the ridiculous. The proponents, on the other hand, have stuck to results of studies by qualified experts. The "doomsday" oracles of a new ice age or a destruction of life due to ultraviolet radiation can, in my opinion and that of experts in the relevant disciplines, be summarily dismissed.

The recent (September 21, 1970) report of the Library of Congress Legislative Reference Service does an excellent job of putting the environmental issues of supersonic flight in their proper perspective. I urge your review of this important document. DOT has recently announced an environmental R&D program dedicated to providing answers to any legitimate concerns which are raised concerning environmental aspects of supersonic flight.

To summarize a very complicated subject, the following table on environmental concerns is offered:

CONCERN AND REMARKS

Green house effect (Increasing earth's temperature): Temperature changes due to SST gaseous exhaust products would be hardly detectable. *Not a problem.*

Layer of dust (Increasing earth's temperature): Particles introduced into stratosphere from a fleet of SST's would be a small amount (1/27 of the daily dose injected from outer space). *Not a problem.*

Formation of Clouds: Highly unlikely anywhere, with remote possibility of exception of the polar regions. Research needed to determine amount and frequency of occurrence, if any. Determination can be made prior to SST production decision.

Ultraviolet radiation (on earth's surface): Could be barely detectable change, but it would be smaller than daily variations between places on earth's surface, such as Denver to Washington, D.C.

Spatial radiation (to occupants of plane): Radiation received by occupants of SST would be about the same or less than that received in subsonic jet on same route flight.

Solar flares: Occurrence of solar flares causing high radiation levels very infrequent (perhaps once in 50 years). SST could descend to avoid excessive radiation to occupants.

In substance, my investigation regarding all environmental aspects of the prototype program leads me to believe the program is being conducted with the active support and advice of the recognized experts in all relevant disciplines. None of these experts has indicated the program should *not* go forward, and, as a matter of fact, have generally endorsed its continuation.

The U.S. Civil Supersonic Transport Program is a sound program, and a wise national investment. As you know, it has had the support of Presidents Kennedy, Johnson and Nixon. To a very significant degree, the prototype program is a program in basic environmental research for the development of data and technology which will insure that commercial supersonic flight will not in any way degrade the world's environment.

In consideration of the facts as stated above, I shall vote in favor of the Department of Transportation FY 1971 appropriations bill when considered by the Senate in November. I strongly urge you to do likewise.

Sincerely yours,

BOB DOLE,
U.S. Senate.

Mr. BAYH. Mr. President, in a recent letter to his colleagues, the distinguished junior Senator from Kansas (Mr. DOLE) related in great detail how he had reappraised the issues in the current SST debate and, in the end, had come out even more firmly in favor of continued funding. The Senator from Kansas is to be congratulated for taking the time to spell out the issues so clearly. To my mind, it was an extremely useful exercise because it focused on the main points at issue.

After thinking long and hard about the Senator from Kansas' letter, Mr. President, I was prompted to delve into these questions in some depth myself. I want to take this opportunity, therefore, to cover all of the points raised by my colleague from Kansas (Mr. DOLE). It might be instructive, it seems to me, because after considerable study I find myself opposed to the continued development of the SST at this time.

As one Senator who had supported this project in the past, this is a confession of sorts about how, upon particularly close examinations, one must inevitably conclude that the SST is the wrong investment at the wrong time.

Point No. 1. The Senator from Kansas has said that the SST "is not a high priority program dollarwise."

Two events of the last few weeks illustrate the relatively high priority that the administration attaches to the SST compared with other possible transportation investments. The first is the proposal for a new rail corporation intended to prevent further deterioration of intercity rail passenger service. The Federal Government is investing only $40 million in the corporation—although it will guarantee $100 million in equipment for roads and roadbeds and another $200 million in loans to enable railroads to invest in the corporation—compared to a projected investment in the SST of a minimum $1.3 billion.

The second was dramatized by the tragic crash of a DC–9 at Huntington, W. Va. The Huntington Airport, in common with more than 300 of the 584 airports served by scheduled commercial aviation, does not have a complete instrument landing system. It is believed that the absence of a glide slope indicator contributed to that crash, as it had contributed to others, such as a crash last year on the ocean approach to Los Angeles International Airport. When the FAA official in charge of these programs was asked why the FAA had not approved and funded the required system, he explained that only $30 million was available this year for such improvements, and even if the Huntington Airport application had been approved, no funds would likely have been provided because only those applications at the top of the list could be taken care of.

It would appear from a comparison of the requested funds that the SST has a significantly higher priority than intercity rail transportation and airport-airways safety—and that, to my mind, is a misplaced priority.

The Senator from Kansas went on to say that, in any event, "a decision not to fund this program in fiscal year 1971 would not result in additional funds for other programs." Mr. President, this is a typical chicken and the egg situation. It is argued that we are unable to adequately finance new programs to meet urgent public needs because of the danger of imbalancing the budget and aggravating inflation. It is also argued that skilled scientific and engineering talent should be redirected to assist in the solution of these urgent problems. Obviously, if these arguments have any merit, we cannot continue business as usual in committing scarce resources of funds and skilled people to low-priority problems. We can—we must—make a beginning in breaking out of the chicken and the egg cycle by turning down appropriation requests like the $290 million for the SST and begin cleaning up our environment and providing adequate health care and housing for all Americans.

Nor should we be deterred from stopping this program now because of the specious argument that cancellation costs will run upward of $150 million. If this is a bad investment—and I think it is—why not protect the hundreds of millions that would be appropriated in the future?

The cancellation charges, moreover, are subject to some dispute. As a matter of fact, when the Department of Transportation reviewed Boeing's latest design in 1970, the Office of the General Counsel commented in a 68-page memorandum that a good case could be made that Boeing was in default of the contract for not meeting the specifications and, therefore, the Government might cancel for cause rather than for convenience. In that event, no cancellation charges need be paid. Even if the Government cancels for convenience, the charges, I believe, are considerably less than the claimed $160 million. The maximum figure, as presented in the record of the Senate Appropriations Committee hearings, was of the order of $75 million.

Again, the loss of the Government's investment is dwarfed by the required Government commitment if the program proceeds. Not only must an additional $60 million be invested for completion of the two prototypes—assuming no further cost overruns—but there is little doubt that the Government will be asked to put up the money for production financing. The required $3 to $4 billion is clearly beyond the capability of the aircraft companies and the airline industry, especially considering the high economic risk of the SST program.

Point No. 2. Competition. Senator DOLE's letter points out that "tests of both Concorde prototypes have exceeded expectations and delivery to airlines is scheduled for 1974. Testing of the Russian TU–144 is also progressing well."

Because of the high operating costs of the Concorde—as well, I assume, the TU–144, which is quite similar in design—it will have no important impact on the aviation market. F. C. Wiser, president of Trans World Airlines, has commented that the Concorde would lose money unless the traveling public was willing to pay 30 to 40 percent more than they now pay for first-class fares across the Atlantic—see article in the New York Times, October 31, 1970, page 50.

To put this in proper perspective, only about 20 percent of transatlantic air passengers now travel at regular fares—either coach or first class. The rest travel at reduced fares under various incentive plans, or on chartered planes. Of the 20 percent flying at posted fares, Mr. President, no more than 20 percent fly first class. In other words, a maximum of 4 percent of transatlantic air passengers currently are willing to pay first-class fares. Probably an even smaller percentage of passengers would be willing to pay another 30 to 40 percent above first-class fares even if they could save 3 hours. Furthermore, with the environmental safeguards adopted yesterday, the Concorde will not even be certificated in the United States and the U.S. market will be closed to it. It seems obvious, therefore, that there is more bark than bite in the Concorde threat.

Point No. 3. Program costs. "There have been no overruns," according to Senator DOLE.

Mr. President, there has already been an acknowledged overrun of $76 million in the cost of phase III—construction of the two prototypes. See testimony of Under Secretary of Transportation James Beggs, Department of Transportation and Related Agencies Appropriations for 1971, before a subcommittee of the Committee on Appropriations, House of Representatives, 91st Congress, second session, part 2, pages 521–3.

Even "when estimates are exceeded," the Senator concluded "the cost to the contractor increases and the Government's share decreases." So why worry about cost overruns?

The 90–10 split between the Federal Government and Boeing for the basic contract is indeed supposed to change to a 75–25 split for overruns. Aside from the fact that the Government still has to come up with 75 percent of the cost of the overruns, it is not hard to imagine that if the required Boeing contribution threatens the viability of that company, then the Government will be asked to change the formula—witness the current efforts to bail out Lockheed on the C–5A overruns.

Point No. 4. Payback provisions. "The recoupment of all Federal funds invested in the program by the sale of the 300th airplane is assured," the Senator from Kansas concluded with certainty.

If there are no cost overruns, and no additional required Government investment, and if Boeing indeed sells 300 planes, then—and only then—the Government is paid back its original investment but with no interest. I want to reemphasize that point, Mr. President: it requires the sale of 300 SST's before the Government can recapture its investment—but with no interest. The catch is that the Government's cost in raising these funds—that is, the cost of Treasury borrowings—is about 7 or 8 percent. The true cost to the Government of each dollar appropriated now is close to $3 15 years from now when the repayment will be made. If the Government is repaid only $1, it in effect has subsidized the difference of close to $2.

If 500 planes are sold the Government's return on its investment will be no more than about 4 percent, still well below the rate for Treasury borrowings.

A more realistic estimate of the subsidy, moreover, would include the very real prospects for cost overruns and required Government participation in production financing. If this is done, the subsidy will be even greater.

Point No. 5. Economics and productivity. "Economic studies performed by DOT and Boeing," the Senator's letter states, "have shown the initial production design will be a highly profitable aircraft in airline operation."

The objectivity of these studies, however, has been called into question by leading economists, as well as by the President's own Council of Economic Ad-

visers and by the Treasury Department. The Council, for example, pointed out that the best current study of the value perceived by passengers for travel time saved concluded that it is equal to 0.4 times hourly earnings for business travelers and zero for pleasure travelers, not the 1.5 times hourly earnings figure used in the DOT-Boeing studies. On the basis of the CEA's figure the expected SST market is reduced from about 500 planes to less than 200 planes. Other DOT assumptions are equally questionable. In fact, it has frequently been stated that each time an assumption had to be made in the Boeing-DOT analysis the most favorable assumption for the SST was selected. These studies are not much more than an exercise in salesmanship.

The Senator from Kansas' statement that "the U.S. SST will be profitable because the unique speed and capability results in a productivity in seat miles almost twice that of the larger 747" is likewise questionable.

This calculation of "productivity" was made simply on the basis of the number of people that can be moved a given number of miles in a given period of time. That is, because the SST has two-thirds the seats and three times the speed of the 747, the claim is made that it is ⅔ times 3 or two times as productive. Any rational analysis of productivity, however, must include considerations of economics and use of resources. When this is done, the SST is less productive than the 747.

The SST will be more than twice as expensive as the $23 million 747, so in terms of seat-mile capacity created per dollar of capital investment, the SST is inferior. The SST will consume twice as much jet fuel per passenger mile, so in terms of use of resources, it is greatly inferior. This last consideration, I should point out, is of more than academic interest. A fleet of 1,000 747's carrying as many people to the same places as the proposed fleet of 500 SST's would use 2 million barrels per day less of jet fuel than the SST's. Since about seven barrels of crude oil is needed to produce one barrel of jet fuel, this produces an extra demand for crude of 14 million barrels per day—that is, seven times the maximum capacity of the proposed trans-Alaskan pipeline and equal to the present crude oil demand in the United States for all uses. Such an enormous increase in crude oil demand would have a corresponding impact on the price of gasoline, home heating fuel, and fuel oil and would greatly hasten the day when the United States and the world will run out of available supplies of petroleum.

In addition, Senator DOLE has claimed that "the SST—will—be able to relieve airport congestion." The congestion of airport runways and airspace in the terminal areas is directly related to the number of takeoffs and landings. Existing airports can be used to best advantage by increasing the number of people moved per takeoff and landing. Because the SST has only two-thirds the seating capacity of the Boeing 747, 50 percent more takeoffs and landings are needed for the SST. So the SST is less productive in terms of airport utilization, as well as in terms of fuel efficiency.

Point No. 6. Sonic boom and noise. As for airport capacity on noise grounds, the Senator said, "It should be emphasized that over the community, where most noise complaints originate, the supersonic transport will be about one-half as annoying as the intercontinental subsonic jets."

When the SST takes off, and while it climbs to an elevation of 1,500 feet above the airport, the noise from its engines will expose widespread areas of the community to unprecedented noise levels. Unlike the case with the subsonic jets, one need not be directly under or near the flight path of the SST to be exposed to noise levels not compatible with use of the area for schools, churches, and single-family dwellings. In fact, the noise disturbance at 1 mile from a subsonic jet is equivalent to the disturbance created within 15 miles of the SST.

Point No. 7. Environmental aspects. "The recent—September 21, 1970—report of the Library of Congress Legislative Reference Service does an excellent job of putting the environmental issues of supersonic flight in their proper perspective," according to my colleague from Kansas.

In many respects, this report is not a complete document. To take one example, there is no comparison between the SST and the 747 on matters of productivity, fuel consumption, and so forth. With respect to atmospheric effects moreover, the report "Man's Impact on the Global Environment: Assessment and Recommendations for Action," MIT Press, 162P, of the MIT-sponsored study group meeting at Williams College in July 1970 expressed concern that cloud cover might increase and "stratospheric smog" might be produced by the operation of a fleet of SST's. Just this week, a committee of the National Academy of Sciences, which 4 years ago stated that the injection of water vapor into the stratosphere would probably not produce damage to the layer of ozone, seemed to reverse itself. The committee warned Mr. McGruder that the SST could possibly produce such an effect, thereby letting in more ultraviolet radiation which might raise the incidence of cancer among some persons—Wall Street Journal, December 2, 1970, page 16.

"To a very significant degree," the Senator has said, "the prototype program is a program in basic environmental research for the development of data and technology which will insure that commercial supersonic flights will not in any way degrade the world's environment."

There is nothing about the effects on the environment of SST's that will be learned from the two prototypes that cannot be learned at far less cost using other equipment. Whatever can be learned about the effect of jet engine exhausts in the stratosphere by testing two prototypes can be learned by tests with existing U–2 and SR–71 aircraft. Information about SST engine noise and methods of suppressing it can be learned from ground tests of prototype engines—such as the ones now being tested by General Electric. The problem is one of finding ways of quieting the engine without significantly reducing thrust and increasing weight. No such solutions are yet in sight.

For these reasons, Mr. President, I reluctantly conclude that continued funding of the SST is not in the national interest. I do want to point out, however, that I am not unmindful of those workers and contractors who may be affected by a decision not to continue funding the SST. It seems to me that what we need to do is develop a program that would provide employment opportunities in such vitally needed areas as pollution control, mass transit, and housing.

Mr. President, I ask unanimous consent that a memorandum on the SST prepared by Dr. Allen Ferguson, formerly coordinator of the Office of International Aviation at the Department of State, appear in the RECORD. Dr. Ferguson's memorandum focuses very cogently on the economic issues that make the SST a poor national investment at this time.

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

A NOTE ON SOME ASPECTS OF THE SST

INTRODUCTION

The question is not whether there should someday be an American SST but whether one should be developed and built before the private sector is prepared to finance it and, hence, whether the taxpayers as a group should be forced to pay for its development.

There are tens of billions of dollars per year dissipated through governmental subsidies of inefficiency and through the restrictive practices of cartels and governmental regulators. Releasing half of these wasted resources would permit the full development of most of the programs and policy adjustments urgently needed to enhance life in America and to contribute to humane progress in the third world. Hence, a decision to support the subsidization of another new technologically oriented program requires most critical examination. Unless there are compelling reasons to the contrary, we should be moving in exactly the opposite direction.

This note will briefly discuss some of the impacts of a U.S. SST, in terms of its general economics, the balance of payment, the threat from abroad, the role of fare making, and the consequences for the profitability of and employment in the US aviation industries. Relatively little emphasis is placed on the general economics because that has been exhaustively discussed elsewhere and need mention here only as basis for the subsequent discussion.

This is a hastily written note. It is not a research piece. I did no new investigation at all. The note has been drawn together in spare time to present a hopefully coherent argument on some major and not widely understood aspects of the SST problem. It shows some of the consequences of the SST program assuming all the technical problems are solved. A definitive piece would require much more work. In particular more should be known, than I know, about the Soviet SST, more information on the economics and the politics of the Concorde and the most recent guesses as to the technical and economic status of the US SST would be desirable. However, the arguments here are basically logical and are not greatly dependent on detailed quantitative information.

GENERAL ECONOMICS

The basic economic fact about the proposed American supersonic transport is that if it were expected to be economical, there would be no need for subsidizing it. The argument that the magnitude of the invest-

ment required for its development and early production is so great as to require subsidy is, at best, improbable. One can readily imagine that combinations of the great financial institutions could readily provide the few billion dollars said to be required. The fact that the very large financial institutions appear not to be interested in financing this particular venture, simply supports the proposition that the SST is not a good economic risk. That is, either it will be more costly to develop, produce and operate or it will earn less than its advocates proclaim.

Industry representatives have argued that the undertaking is too risky, rather than too costly, to justify private sources in making the necessary loans. This is basically just a restatement that the prospects are not good enough to justify the costs and uncertainties. It ignores the availability of equity capital by emphasizing loans to the industry. Nor can it be argued that the private sector will not underwrite risky ventures. The 1960's, when the initial decisions were made to burden taxpayers with this undertaking, saw the financial community underwrite dozens of extraordinarily risky ventures, many of which repaid the financiers handsomely. Finally, in this vein, it is sometimes said that it should not be left to private financiers to determine what ventures are to be undertaken. This is what we call the private enterprise system! The arguments for socialism should be made on more fundamental grounds.

The argument is sometimes made that the aircraft manufacturers themselves cannot afford the investment. This may be true, but it is clearly irrelevant—there is no particular sanctity to the Boeing airplane Company as an institution. If, in order to produce the SST, the present controlling interests in Boeing had to compromise their control to obtain outside financial support that would pose only a private business problem, nothing that in any legitimate way concerns the Federal government to the tune of billions of dollars.

Until the SST, technological innovation in air transportation has typically combined improved quality of service as reflected in speed, comfort, etc., with reduced costs per seat-mile; in few prior cases has innovation brought about decreased economic efficiency in this sense. Further, much American aviation innovation has been indirectly supported through technological advance in military programs. These are two of the reasons why direct subsidization of a civilian aircraft has emerged as an important question.

The history of the Concorde, the history of our own SST, of the C5A, of the F–111, and so on, all suggests that the early estimate of both production schedules and costs are likely to be grossly optimistic. The origins of such euphoria are something less than obvious, but certainly they include a confluence of opinion and interest on the part of both the industry and the relevant bureaucracy. The two groups are held together by a combination of interests in the technology of aviation, intertwining career ladders, and in the appearance that the more money is spent on aviation, the greater the prestige, wealth and influence among the community of peers to which each of the influential members of both industry and government belong or can expect to join. Thus, there tends to develop a light-weight analog of the military-industrial complex in each of the areas where government involvement is structured on a technological base: just as FAA personnel tend to look upon aviation advanced as an obvious national gain, so Maritime Administration personnel tend to consider the development of new ships to show the US flag something that needs no social or economic justification. Nor is the situation holding key positions in industry and government, the machine takes on some of the characteristics of a work of art: it becomes an end in itself. Thus the SST, the sleek new ship, the massive magnificant complex computer all become the materialistic cathedrals of our burgeoning technocracy.

Two points follow: First, enthusiasm for the SST (or whatever it may be) tends to replace objectivity in estimating costs and benefits and, second, Congress or impartial components of the Administration, therefore, cannot rely upon the responsible agencies for reliable and objective appraisals.

One final point on general economic considerations—it is sometimes argued that Federal subsidization of the SST is a form of investment that will be paid back through royalties as the swift winged work of art generates future profits. One might ask whether it isn't naive to believe that if the industrial lobbies are strong enough to get billions of dollars in subsidy, will they be so weak in the future as to have to pay it back? It is possible, but one should look at the handling of the reserve funds, trade-in allowances and all the rest of the financial paraphernalia associated with the maritime subsidies, for example, before he puts a great deal of faith in arguments that all the money will some day come back. This, of course, leaves aside completely the important question of whether it is the best investment of Federal funds, given the social returns that might be derived from housing, education, mass transit and so on.

BALANCE OF PAYMENTS

There is genuine concern that failure of the United States to enter the SST competition would adversely affect the U.S. balance of payments. The balance of payments argument is basically unsound. First the whole idea that the United States should retain fixed exchange rates is at best anachronistic. The economic arguments for moving of flexible exchange rates, whether through some intermediate steps such as the creeping peg or directly, appear to be compelling. The notion that somehow we lose our national masculinity by letting the dollar reach its own price in the world market is exactly analogous to President Nixon's fear of "losing" the war in Viet Nam. There is no more honor in anachronism, chauvinism or masochism in maintaining the fixed subsidy of gold production which is what our fixed exchange rate policy does—as there is in "winning" in Vietnam, or making the pledge of allegiance to the flag mandatory in the elementary schools.

The balance of payments is virtually a worldwide Noah's cloak for standard protectionist policies. At one time, early in the sixties, I made a rough calculation and found that, summing the accounts of all the countries of the world revealed a simultaneous net adverse balance of payments! I suspect that the abilities to define terms and accounting methods have remained sufficiently imaginative to permit the same situation to exist today.

However, anyone who believes that it is impossible to move substantially towards flexible exchange rates can reasonably accept the existence of a significant balance of payments problem. However, by its nature, it would be a relatively "short run" problem. Forces of international commerce and finance tend to induce the shifting of trade and other economic relationships among nations to remove the imbalance in the long run. The SST, on the other hand, will have no "favorable" impact on U.S. exports for a long time, perhaps not before the early 80's. In the meantime, its effects will be adverse—it will tend to contribute to inflation and, hence, to the worsening position of the U.S. trade balance; more directly, it will probably discourage the exportation of other commercial aircraft.

Nevertheless, although in my opinion the economic considerations associated with the balance of payments are not objectively significant, politically the problem is real enough. Hence, the impact of the SST on the balance of payments simply has to be discussed. The problem is usually cast in the form that if the U.S. does not build an SST and foreign countries do, the balance of trade will be adversely affected through two mutually reinforcing events, first, U.S. carriers will have to import the foreign supersonic transport and U.S. export sales of commercial aircraft will drop or perhaps disappear because foreign airlines will have to do the same. It is obvious that if that were to happen the impact on the U.S. balance of trade would be "adverse". But it need not happen, and it probably will not happen, even if the U.S. does not build an SST. The reasons for this are best described in a more general discussion of the SST problem.

THE GENERAL ARGUMENT

The aviation industry's argument is basically that the Concorde is inevitable, that a Soviet SST is probable, that if either does appear in the world market, the U.S. and world air carriers will have to buy the foreign SST and displace U.S. built aircraft. As a consequence, and in the absence of a U.S. SST, the United States will suffer in respect to both its balance of payments and its leadership in world aviation. Further, the only way to avoid these consequences is through the development of an American SST, that will either permit the U.S. to recapture the SST market or, hopefully, the knowledge that the U.S. industry will manufacture a better vehicle shortly after the appearance of the Concorde (or the Soviet craft) that will preempt much of the market and soon relegate the Concorde, to premature obsolescence, more or less as the U.S. jets did the Comet.

There are several things wrong with this line of reasoning:

The Concorde is not inevitable—it is running into increasing trouble.

An effective Soviet SST appears improbable.

Even if they do appear it will not be necessary for American or foreign carriers to buy them, certainly not for most of their operations. The airlines that had anticipated buying Concordes have reduced the number they plan to fly.

Whether, even if there is a technically successful foreign SST, the U.S. will suffer balance of payments or aviation losses will depend primarily on United States Government policy.

Finally, the development of an American SST (under anything like the planned program) will probably have adverse effects on American aviation leadership and on the U.S. aviation industries.

I shall take up these points in turn.

1. *The Concorde is not inevitable.* The British have been skeptical about the wisdom of developing it for many years. One of the first acts of the Wilson government was an unsuccessful attempt to cancel the program. DeGaulle's government refused to let the British out of the contract, which the Conservatives had signed without a cancellation clause. Recently there has been extensive criticism of the sonic boom generated by the Concorde in its trial runs and there was a particularly acute outcry a few weeks ago over the noise it made when weather forced it to land at Heathrow (approaching at sub-sonic speeds, of course).

Recently, public doubts have begun to appear in France. According to the Washington Post (Sept. 28, 1970) Charles de Chambrun who was formerly a junior minister in the DeGaulle government, has "charged that the Concorde was killing the French aircraft industry . . . however, there is no indication the criticism is making any impact on President Pompidou." The same article refers to "reports from London that the Tory government is eager to cancel the Concorde."

2. *A Soviet SST is not obvious.* Ever since

the mid 50's, U.S. aviation enthusiasts have forecast Soviet "penetration" of aircraft markets throughout the world. To date, Soviet commercial transports have all been markedly inferior to U.S. and even to British and French products. This obviously does not insure that they will not someday build a superior commercial aircraft. I am even further behind on the technical developments of the Soviet vehicle than on the British one, but as will be pointed out throughout this note, the technical considerations will not be the determinants of the extent of foreign operation and sales of SST's.

Senator Muskie has reportedly proposed a quadrilateral agreement, Britain, France, the Soviet Union and the United States, to discontinue SST development. At the time I was in the State Department I made unsuccessful efforts to generate support for such an idea or for co-operative SST development among the United States government, Britain and to a less extent France on a highly informal basis. Although the effort was unsuccessful, I concluded that, with support in the United States Government, there would have been a reasonable prospect for success.

3. *It will not be necessary for airlines to displace American built jets with a foreign SST.* Much of the fear inducing America to raise the priority of the SST above domestic needs, reflects the argument that airlines *will have to* buy a foreign SST if one becomes available. I can speak only of the Concorde so far as technical aspects are concerned; the operating characteristics of the Soviet aircraft should be examined too.

The Concorde is not much of a threat. Technically it is extremely limited. Internationally, it will be able to fly non-stop only New York-London or New York-Paris, New York-Jamaica or similar distances. It will not be able, for example, to fly New York-Rome, Los Angeles-Europe, California-Tokyo, even Europe-Chicago. To make any of these longer flights will require at least one stop. Further, present expectations are that it will have to fly at sub-sonic speeds over land. There is little chance in my judgment that the protection of the Continental U.S. from supersonic overflight will survive subsidization of a U.S. SST. However, until a U.S. SST is in extensive operation the restriction has a reasonable chance of survival. This means that New York-Rome, Los Angeles to Europe or to the Far East, all these flights will virtually take as long, if not longer than, subsonic non-stop flights. Further, although it will have the range to make the flight, the Concorde will not be permitted by the European governments to fly London-Rome or other trans-European flights at supersonic speeds. Except for New York-Miami and California-Hawaii, virtually the whole U.S. domestic market will be foreclosed to effective competition by the Concorde because of the restriction against its supersonic operation; it is too small and costly to compete at subsonic speeds. East of Athens, into Africa and to and from South America it may be possible to fly at supersonic speeds, but again it will frequently be competing with non-stop subsonics, and these are relatively thin markets.

Thus, if travellers are willing to pay the added cost of achieving supersonic speeds with the Concorde, or if fares are so distorted that they do not have to pay the extra cost, there is a place for the Concorde in the international, and possibly a small place, in the domestic market. However, in contrast to the 707, the 747 or the DC-10, and other subsonic jets, the Concorde cannot be used throughout much of the networks of the major airlines. Thus its utilization will tend to be depressed and it will contribute to heterogeneity of airline fleets.

Even if the British and French go through with the Concorde, in the worst case, there will continue to be a demand for U.S.-built subsonic jets into the foreseeable future, so long as air travel continues to grow. Whether "the worst case" would arise is up to the United States Government.

4. *U.S. Government Policy is the Controlling Factor.* Although it appears likely that there will not be, in the foreseeable future, a foreign SST which can pose a real threat to the U.S. superiority in subsonic commercial jets, whether such a vehicle would be able to force U.S. subsonic aircraft out of the U.S. domestic market, foreign domestic markets or the international market is not primarily dependent upon technology—it is primarily dependent upon fares, and specifically on the United States Government's fare policy.[1] The Executive and the Civil Aeronautics Board can influence and in some critical areas control fares. They can within present law do so in such a way as to prevent any SST currently under development anywhere, from forcing the U.S. subsonics out of the domestic American market. Indeed if the CAB were to behave in an equitable and economically rational way, that is exactly what its fare policy would do. Further, the U.S. Government could, in accordance with its laws, influence and present international agreement, influence, if not determine, the extent of use of any SST in international service. It is a little heroic to suppose that the CAB with its present composition, will be either imaginative or responsive to the public interest here. Further one cannot expect much better from DOT or the Nixon Administration in general, so the responsibility would fall on Congress if the problem were in fact to arise.

A key element in the discussion of fares is the cost of operating the Concorde relative to the U.S. subsonic jets. Several years ago, when I was abreast of developments in the SST, it was expected that the Concorde would cost about 1½ times as much per seat-mile as would the wide bodied subsonic jets (the 747, etc). (A brief examination of current data suggest that this is not far off). These estimates left out of consideration all the cost penalties associated with either the sonic boom or noise, such as those resulting from circuitous routing, the imposition of curfews at various airports, the possibility of absolute embargoes on the use of the supersonic into or over countries, (e.g. Switzerland), all of which could complicate scheduling and reduce utilization substantially. Obviously, it would be difficult at best to estimate the extent to which such penalties will be applied and *a fortiori* the cost implications of them. Consequently, the assumption that the SST operating costs will be about 1½ times those of subsonics is probably conservative.

Such a cost difference means one of three things: First and most appalling, direct subsidization of operation of the SST (in contrast to the proposed recuperation of the investment cost through royalties) so that its seat-mile cost *to the airlines* would be comparable to those of the subsonics. Secondly, charging roughly 1½ times as much per passenger-mile for (Concorde) SST service as for subsonic service; there appears to be no stomach in the industry for such a price structure. There is a widespread belief that supersonic speed is just not worth what it costs and that too few passengers would be willing to pay a premium proportional to the cost differential. Third, to charge the same price per passenger mile on the SST as on the subsonics (or a modest differential such as a 10 or 15% premium).

The first alternative, direct subsidization, will, as discussed below, be a real danger when and if a U.S. SST is developed and produced under present plans. However, although the British and French governments have dumped billions of dollars into the development of the Concorde and may force their own airlines to buy it (as the Comets), it seems unreasonable that they will subsidize foreign airlines to operate the Concorde. Similarly it seems unreasonable to expect the Russians to develop an effective program for subsidizing many non-Communist airlines. (Subsidizing the *purchase* of SST's would not be adequate.)

The second alternative presents essentially the price policy that should be followed by the CAB and the Executive. It is also the economically rational policy for most foreign governments. But such policy would probably result in the Concorde's being the financial failure that it seems reasonable to expect that it should be. It will certainly be resisted by all the airlines that have been induced to purchase Concordes. But it might be supported before they get locked into supersonics. Backed by their governments, they can be expected to make every effort to force the third alternative, if ever they become irrevocably committed to the Concorde.

The third alternative, charging little or no premium for supersonic service, will thus undoubtedly have a good deal of political support. The dramatic, historic growth of domestic and international air transport has been largely a consequence of a pattern of technological development that has produced a better product at a lower cost. The SST would reverse that—it would produce a better, that is faster, service but at substantially higher cost. The introduction of the SST, then, would tend to prevent or at least retard further reductions in fares. This would occur as follows. Without a substantial premium for supersonic services (about 50% for the Concorde) fares on subsonic transports will have to be increased (or decreased less than they otherwise would be) wherever the supersonic transport becomes a significant portion of the world's commercial fleet—e.g. New York-London. The reason is simply that the SST will increase the average seat-mile cost of the whole fleet. Consequently, in order to keep from incurring losses, as the SST becomes a larger proportion of the fleet serving particular markets, fares will have to rise progressively closer to the passenger-mile costs of the SST.

The evidence on the North Atlantic is that the price elasticity of demand for air travel is very high.

The same is probably true domestically (but I could not substantiate that without some further work).

Therefore, any increase in fares will cause a reduction in the number of passenger-miles sold; or, in most realistic, dynamic terms, any retardation in or reversal of the downward trend of fares will reduce the rate of growth of air transportation. This is perhaps the most important economic fact in the whole SST debate so far as the welfare of the U.S. aviation industries is concerned.

Stephen Wheatcroft, a British aviation analyst who is frequently employed by the International Air Transport Aviation (IATA) and other clients from the aviation industry, made an extensive study of price elasticity of demand in the North Atlantic. He estimated that the elasticity of demand is about 2.0, i.e. each 1% increase in fares tends to cause a 2% decrease in traffic, and that each 1% decrease in fares to cause a 2% increase in traffic. Taking Wheatcroft's estimate of elasticity, if, as a result of the limited introduction of the Concorde, fares were raised in the North Atlantic an average of only 20%, the traffic would be reduced by roughly 40%.[2] If he has over-estimated elas-

[1] A full discussion of fares is too involved for this brief note.

[2] The relationship between such large price changes and quantity changes is imprecise with any given estimate of elasticity. Technically, computations of the effects of price changes are reliable only over a narrow range of changes, in part because the elasticity of demand is different at different prices. This

ticity by a factor of two, which almost certainly far exceeds any error in his work, or if we assume that the greater speed of the Concorde would offset half the effect of the price increase given Wheatcroft's estimate,[1] i.e. if we assume an elasticity of only 1.0, a 20% increase in fares would mean traffic would be about 20% below what its volume would otherwise be.

It seems inevitable that if the initial Concorde fares are too low to cover its costs, a chain reaction will be introduced that will force most fares in the North Atlantic up over an interval of a very few years. If this happens, the traffic on the Atlantic will fall below its potential, to the detriment of American carriers. Unless the United States Government wants to see this, it should take steps to assure that the Concorde fares are high enough to pay its full cost. Although there are severe limitations on the ability of the United States Government, under present law, to control the level of international fares, as clearly demonstrated in the "crisis" of 1963, the United States does have great power to influence both the level and the structure of those rates, as equally clearly demonstrated in the fares introduced in the summer of 1964.

Whatever the difficulties of influencing fares internationally, the CAB clearly has power to set rates domestically. It could and should—in the public interest—set rates such that a vehicle as inefficient as the Concorde is expected to be, is required to compete without hidden subsidy. It would then be precluded from even those domestic operations for which it would be technically adequate.

Where, then, does the argument stand: that the airlines of the world will have to replace American-built subsonics with the Concorde unless the United States builds its own SST? There is some hope that the Concorde will never be produced. There is reason to think that if a Soviet aircraft is produced its qualities will not be up to western standards, and it will be small and inefficient, but this needs more examination. Even assuming that all the technical, economic, financial, and political problems of producing it are solved, the Concorde will be unable to serve any of the world's long-distance markets non-stop because of its lack of range. Being forced to land and to fly at subsonic speeds over populated areas, it will have little if any time advantage over non-stop subsonic jet operations in those markets. So, even if the implementation of appropriate fare policy is prevented, the vehicle will be of limited usefulness. If equitable and efficient fare policies are introduced domestically in the United States the high cost of Concorde operations will preclude it from those few domestic markets for which it is technically adequate. If such appropriate rates are also introduced internationally it will be restricted by market forces to very small first-class operations in a few major markets. That is the size of the Concorde threat to American aviation.

5. *Developing a U.S. SST will adversely affect U.S. aviation leadership.* To this point I have attempted to sketch the highlights of reasons why there is little justification for the argument that the threat of a Concorde (or probably a Soviet SST) justifies the development of a U.S. SST: Without regard to this argument, developing the U.S. SST under forced draft is adverse not only to virtually everybody else but also to the American aviation industries.

The U.S. SST is expected, if its technical problems can be overcome, to be a far more efficient vehicle than the Concorde or the Soviet SST. It will be faster by some 50% in cruising, it will be much larger, it will have fewer range disadvantages than the Concorde, its seat-mile costs are expected to be somewhat less than those of the Concorde. It is intended to have greater growth potential than the Concorde. Yet its advocates do not think it is good enough to be produced without subsidy. One reason for that is undoubtedly that whereas it will be more efficient than the Concorde it will be less efficient, more costly per seat-mile, than the subsonic jets that can be expected to be in operation when the U.S. SST could be operating in large numbers.

In broad terms, the discussion of the effect of the Concorde on rates in the North Atlantic applies to the effect on rates of the U.S. SST wherever it is permitted to fly. It seems unlikely that the only fare policy demonstrably in the public interest will be adopted and maintained, i.e., setting a premium fare for the SST high enough to cover its cost disadvantage. This would, even in the expectations of its advocates, visit financial disaster on the whole venture. It will be far harder politically for the U.S. Government to insist on rational pricing for the U.S. SST than for a foreign-built vehicle. Once the government has subsidized its creation and in various ways induced American and foreign carriers to buy it, to let the U.S. SST be a financial failure would be, to say the least, politically difficult. Incidentally, no one should believe that the U.S. Government will ever recoup its investment without being able to explain how a fare policy that will avoid subsidization or financial failure can be put into effect. Such a fare policy will, almost certainly, force fares on virtually all types of aircraft substantially above the level to which they could otherwise fall.

Given that the SST will prevent fares from declining in accordance both with the historic pattern and with what could be expected from further development of subsonic transports, the inferences of "success" of the SST are not hard to draw. First and most obvious, there will be less air travel than there otherwise would be. This is true no matter what the elasticity of demand, so long as one does not accept the obviously implausible position that in this one instance, demand is entirely insensitive to price.

If air travel is depressed there will be less employment in the airlines. Less demand for aircraft and, hence, possibly less employment in the aircraft industry. These are the obvious direct "benefits" to the aviation industry, of a technically successful SST program.

There are other consequences. Passengers flying on subsonic aircraft, by virtue of having to pay higher fares than would otherwise be the case, will be subsidizing passengers flying on the SST. In many markets, at least, that situation will be only temporary; passengers will tend to shift from the subsonic to the supersonics if they have to pay little or no premium for the privilege of saving a few minutes or hours (unless there are some service disadvantages of the SST). If this happens the subsonics will become obsolete at a faster rate than would otherwise be the case. This will have two effects, it is the mechanism by which the fares in the entire market will gradually be forced up to cover substantially the full seat-mile cost of SST operation (in absence of direct operating subsidy). Second, it will accelerate the obsolescence of the new wide-bodied and other subsonic jets. With regard to the first, it is clearly inequitable to force travellers flying in subsonic aircraft to subsidize those flying the SST. That is what will happen initially. Gradually, as the proportion of SST's in the air line fleets increases, all passengers will be forced to pay more and more of the cost of SST operations. Given that the advantages of supersonic speed are not worth their cost to many passengers, we get the reduction in air travel. Thus, people who would prefer to fly (e.g. to take a vacation in Hawaii) at fares that would be technically possible will be forced, through government-sponsored policy, not to exercise that choice.

Accelerating the obsolescence of the subsonics will increase the capital expenditure of the airlines. This can be expected to aggravate the financial problems of the airlines. Their debt is now at historic highs. If the Government wishes to see the continuation of a significant degree of competition in American aviation, it should avoid policies that will increase their financial burdens. Further, by increasing interest and depreciation charges (or equipment write-offs) accelerated obsolescence will reduce profits. (One can readily foresee efforts of the aviation industry to get more favorable treatment of depreciation allowances from IRS so as to transfer some of these costs to the general public through reducing airlines' income taxes.)

There is another serious adverse potential, which I cannot go into fully in this already overly long note. The U.S. international air network is based on a traditionally liberal structure of bilateral agreements, which impose relatively few limitations on traffic and operations. Opposition to this free and expansive arrangement has been increasing historically. The introduction of the SST might induce major restrictions by foreign governments, reversing the essentially "free-trade" in air travel and having adverse long-term effects on international air travel and U.S. and world aviation.

It is not possible to say in advance how the "success" of a U.S. SST will affect the aircraft industry. It seems clear that, through manufacturing the SST, Boeing stands to benefit, at least relative to McDonnell Douglas, Lockheed and any other manufacturers potentially in the commercial airplane business. The less the premium charged for supersonic service, the faster and more complete will be the substitution of supersonic for subsonic aircraft, so Boeing's production should do well, so far as the SST is concerned. By the same token production and employment in McDonnell Douglas and Lockheed and in Boeing's own 747, 707 and other subsonic jet production lines will be curtailed and they will be curtailed faster the greater the "success" of the SST program.

U.S. aviation leadership

This brings us to the final question the "aviation leadership" of the United States.

Aviation leadership has two relevant components—that of our airlines and our manufacturers.

To begin with, it is clear that within the aviation community both at home and abroad the United States would certainly gain some "prestige" from producing a superior and ultimately dominant SST. It would gain this prestige for many of the same reasons that members of the American aviation community support such uneconomic ventures as the SST. Throughout the world (on the basis of my own observation) many aviation authorities are afflicted with that form of myopia which prevents their seeing beyond technological elegance to social and economic utility. To such individuals, the introduction of a new, technically superior aircraft seems an end in itself. By the same token, with these people the U.S. would lose face should any other country defeat us in an SST competition. However, even aviation officials are not a homogen-

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can be most readily seen by considering that even if the data clearly indicates an elasticity of 2.0 for price changes in the past in the order of 10-20%, that would by no means imply that a 50% price increase would result in a 100% decrease in the amount demanded.

[1] If the advantages of supersonic speed were to affect entirely the effect of the price elasticity of demand, there would be little basis for not directly introducing the second alternative.

eous set. In some cases, admiration of the accomplishment would be diluted or covered with resentment of American technological and economic aggression, a la Gaullist businessmen. Further, many aviation officials do understand the economic and financial strains that would be imposed upon their own carriers if an operationally effective SST were introduced. They, and in some instances their governments, would resent U.S. policy. They would be forced by American competition and by the premature obsolescence of the American-built subsonics jets they now operate, to incur costs of re-equipping in the interests of U.S. prestige.

The consequences for U.S. leadership in aircraft production go much further. Now, the U.S. has an indisputable lead in conventional subsonic intermediate and long-range transports. The world flys American equipment. This lead has been obtained in large part by the steady progression of technological development which has lead to both better speed and economically more efficient air transport equipment. To jeopardize this leadership, which is soundly based on economic reality, by fooling around with a speculative program whose economics are so unpromising that the private sector deliberately fails to participate fully, is, at best, a questionable choice.

"Aviation leadership" of the U.S. airlines: the U.S. airlines enjoy a highly prestigious and largely profitable and socially functional position in international aviation. This too is based on superior economic efficiency more than any other single factor. To try to shift the basis of this leadership to some intangible and rather esoteric advantages associated with the employment of an elegantly inefficient vehicle, is at best risky. Further, even if the gamble seems worth the taking, the U.S. international carriers will not, in fact, be in a position to introduce SST service internationally much, if any, before foreign carriers. In the first place Jeeh Halaby, then Administrator of FAA, was careful to ration places in the waiting line for the U.S. SST in a way that would avoid the international repercussions of giving U.S. carriers a promise of an early preponderance of supersonic vehicles. Secondly, experience in the rate crisis of 1963 demonstrates that other countries do in fact assert authority over their own air space and will, if necessary to protect the interests of their own airlines, deny U.S. carriers the right to serve their country. This power means that it will be impossible for U.S. airlines, simply because an SST is built in the U.S., to have any significant lead in the operation of that vehicle in international air commerce. Indeed one can easily foresee a long period of bitter controversey between the United States and its allied and friendly countries over the issue of the SST with certainly some prospect that the net work of liberal bilateral agreement, which is the foundation of U.S. international air service, could be dealt the final blow by a restrictionist pressures of foreign countries.

The only large group in the aviation industry that would demonstrably suffer from the decision not to subsidize the SST further would be the employees of Boeing and its suppliers working on the SST. The decision would reinforce the effects of the trend toward reduced expenditures on strategic missiles and space (unemployment in Seattle has little to do with "conversion" from the Vietnam war to peace as the Administration contends, but that is another story). However, the overall impact of the SST itself is probably marginal. There is need for a general program to facilitate the movement of workers from one kind of production in areas such as Seattle to new employment in socially desirable undertakings.[4]

The rest of the aviation community stands to be hurt in various degrees and in various ways if the United States "successfully" subsidizes the development of the SST, and does not subsidize its operation. In the short run the airlines will feel less adverse pressure if they are allowed to force passengers on subsonics to subsidize those on the supersonics. In the long-run this will prove a terribly costly course. Then, envisage the pressure on the government. The government will have participated in a situation in which the financial survival of its airlines may be jeopardized. The SST will exist, the fare structure will be distorted, profits, employment and the survival of competition in air transport will be threatened. The government will almost certainly face at least three kinds of pressure: subsidize supersonic operations, permit further reduction in airline competition, remove the restriction of supersonic flight over populated areas.

The chances that the government can resist the third, permitting essentially unlimited operations, seem at best fragile. One might want to evaluate the existing commitments in terms of the FAA's past commitments never to permit jets to operate at National Airport, then never to permit large jets to operate at National. If the airlines can show, at some future date, that they are in real trouble, that the restriction is contributing to their difficulties, that if they do not get relief they will need explicit subsidy and, further, that some recent finding shows that the sonic boom is not as bad as you think, the kind of government that is likely to be in power if we do nothing to reverse the trend toward subsidized technocracy, is likely to be an easy target.

Whether competition in aviation or the lack of explicit subsidy would be next to go is not particularly relevant. In either event the costs to the American people of the SST would be increased enormously over present estimates, through either higher monopoly prices for air travel or through direct subsidy.

[4] Cf. Thurow's paper, attached.

Mr. BROOKE. Mr. President, I ask unanimous consent that a further statement and an insertion by Senator MARK HATFIELD regarding the Portland International Airport appear at this point in the RECORD.

There being no objection, the statement and insertion were ordered to be printed in the RECORD, as follows:

STATEMENT OF SENATOR HATFIELD

Mr. HATFIELD. Mr. President, I wish to reiterate the strong support for this project by the Federal Aviation Administration. I requested an updated summary of their position.

In a letter to me from Mr. Robert F. Bacon, Chief of the System Planning Division of the Airport Service of the Federal Aviation Administration, the various points I have discussed are repeated.

First, the letter details the need for additional facilities. Second, the alternate proposals are discussed. Third, the effects on airspace use is mentioned. Fourth, the recreation and wildlife aspects are discussed. Fifth, the letter points out the actual improvement in the river hydrology.

I would like to quote the last paragraphs from Mr. Bacon's letter:

In summary, expansion of the present airport, with its convenient access, offers a clear advantage over the construction of an entirely new and more expensive airport at a substantial distance away from the users.

It is our judgment that the proposed configuration is by far the best alternative use of the existing site. It also achieves a carefully balancing and minimizing of the airport's impact on its surrounding environment. Additional benefits, in terms of reduced highway bridge costs and overall improvement in river hydrology and wildlife/recreation facilities lend additional support to the proposal.

DEPARTMENT OF TRANSPORTATION,
FEDERAL AVIATION ADMINISTRATION,
Washington, D.C., December 2, 1970.

HON. MARK O. HATFIELD,
U.S. Senate, Washington, D.C.

DEAR SENATOR HATFIELD: On 1 December 1970, Mr. Walter Evans of your staff requested our current views regarding the proposed expansion of the Portland, Oregon International Airport.

We can only reiterate our findings and recommendations made in the summer of 1969 supporting the proposed expansion as announced by Secretary Volpe.

The FAA has thoroughly reviewed the proposal by the Port of Portland to expand and modernize its airport. The need for additional airport facilities, the various solutions, and related elements such as surface access, aircraft noise, and general environmental impact each have been carefully assessed.

We conclude that the present proposal to expand the existing airport partially on fill in the Columbia River, is the best solution to the Portland/Vancouver Metropolitan Area long-range air transportation needs. Following is a summary of our findings:

1. *Need for Additional Facilities.*—The Portland International Airport presently consists of offset parallel runways of 8,000 and 8,800 feet, aligned in an east-west direction with a separation of 3,100 feet. There is a crosswind runway of 5,245 feet.

The operational activity presently amounts to 180,000 annual aircraft operations and 1,225,000 enplaned passengers. By 1980 these levels are forecast by the FAA to rise to 400,000 operations and 3,490,000 enplaned passengers. The enplaned passenger level could very well rise to 14,000,000 by the year 2000.

Because of the close spacing of the parallel runways, the airfield and passenger terminal capacities will not be sufficient to accommodate future demands. Of immediate importance, the clearances between the terminal and primary runways are insufficient for the large aircraft soon to be in service.

2. *Alternate Solutions.*—In the fall of 1967 the Port of Portland identified 25 possible sites for a new airport. This number was subsequently narrowed to 7, based on obstructions, geography, and accessibility. A technical advisory committee, made up of members of the Columbia Region Association of Governments (CRAG) and the Port reviewed the 7 sites and added Portland International Airport and Sauvies Island to the list. As a result of this review, Portland International and 2 sites in the Willamette Valley were focused on as the final alternatives.

Expansion of Portland International is feasible at a cost of about $85 million. Such action was comprehensively compared to alternative development of a new airport in the Willamette Valley. The site is 32 miles from the Portland central business district and about 42 miles from downtown Vancouver. The cost of a new airport would be about $25 million more than expanding the present airport. Noting these factors, the technical committee made a formal recommendation on 26 April 1968 in favor of expanding Portland International Airport.

Six runway configurations for the Portland International expansion have been studied. The first involved relocation of runway 10L/28R to the north. It was rejected because it would require blocking the south channel of the Columbia River past Government Island.

Four configurations involved shifting the southerly primary runway various distances to the south, closer to Portland residential areas. One proposal, by Senators Magnuson and Jackson and Congresswoman Hansen would move the system a full mile to the south. All of these configurations would cause complete relocation of the existing terminal structures and expose residential areas of Portland to high noise levels. Also,

complete relocation of the Air National Guard would be required, delaying the program for at least 3 years.

The configuration selected realigns the runways to a 9/27 direction by rotating them 7½ degrees from the present 10/28 direction. This places the approach/departure paths over the river and nonresidential areas taking maximum advantage of non-noise sensitive areas. Noise over downtown Vancouver and Parkrose, Oregon, will be reduced while noise over the north bank of the river, east of Vancouver, will be raised slightly—about 3 to 4 perceived noise decibels (PNdB). Noise increases over heavily populated Portland areas south and southwest of the airport will be lessened from the present level. The runway system will be about equidistant between the McLaughlin Heights area on the north shore of the river and the residential areas of Portland immediately south of the airport. Appropriate noise abatement procedures have been developed for the new layout. The Air Transport Association assures us that the noise abatement procedures will be observed.

3. *Airspace*—None of the area's configurations studied would have an adverse effect on safe and efficient use of the airspace. However, the selected configuration will improve the safety of aircraft operations in the vicinity of Vancouver's Pearson Airpark.

4. *Section 4(f)*—The steps intending to minimize harm to wildlife refuges and recreational areas have been thoroughly reviewed. The islands in the Columbia River serving as wildlife refuges are owned by the State of Oregon. The Port has agreed to replace those portions which would be taken by the airport with other suitable property. The Oregon Game Commission has willingly accepted this offer as being equivalent to the present areas. Sand Island, which would be completely eliminated, is privately owned and used for recreational boating. The owners have, likewise, accepted a replacement area as being fully equivalent. Existing recreational areas on Government and Lemon Islands will be replaced and improved. Thus, we have concluded that Section 4(f) of the Department of Transportation Act has been complied with insofar as affected public lands on the Oregon side of the river are concerned.

There are no publicly owned lands subject to Section 4(f) that will be exposed to increased noise levels on the Washington side of the river. Department of Interior officials have been consulted and our findings verified.

5. *River Hydrology*—Studies concerning changes in the river hydrology were made by Bauer Engineering, Inc. They indicated that the relocation of the south channel is not only sound and practical but will also result in a more stable channel. Improvements should also result in scour protection, flood passing ability, and sediment transport capacity. The Bauer study was reviewed by Dr. E. Roy Tinney, consulting hydraulic engineer, for the City of Vancouver and the results totally verified. The U.S. Army Corps of Engineers has approved the channel's relocation.

The airport expansion includes an attendant program of general improvement of recreation facilities which will substantially increase beach, park and picnic areas, boat anchorages, ramps and moorage slips.

The project will result in a savings of at least $7 million in the I-205 bridge structure because less water area will be bridged.

In summary, expansion of the present airport, with its convenient access, offers a clear advantage over the construction of an entirely new and more expensive airport at a substantial distance away from the users.

It is our judgment that the proposed configuration is by far the best alternative use of the existing site. It also achieves a carefully balancing and minimizing of the airport's impact on its surrounding environment. Additional benefits, in terms of reduced highway bridge costs and overall improvement in river hydrology and wildlife/recreation facilities lend additional support to the proposal.

We hope the above information is satisfactory. If you have any questions, please let us know.

Sincerely,

ROBERT F. BACON,
Chief, System Planning Division, AS-400, Airports Service.

Mr. PACKWOOD. The present plan for the expansion of Portland International Airport was developed after 18 months of study and examination of 25 possible sites. This plan has been approved by all local, State, and Federal agencies responsible for the protection of the environment and natural resources. These local and States agencies were unanimous in their approval of the plan noting that expansion of an airport at an existing site is preferable to the problems of starting at a new site which, in this case, would have wiped out thousands of acres of prime agricultural land.

Public hearings were held by both the Corps of Engineers and the Department of Transportation, an extensive study of the site, and alternative sites, was performed by DOT. The Department of Interior studied the proposed expansion, and noting that the Port of Portland appeared to be willing and able to meet the minimum conditions we consider adequate with regard to game refuge, recreational facilities and maintenance of water quality, raised no objection to issuance of the dredge and fill permit required for the project.

The Department of Transportation in approving the project noted that all reasonable alternatives have been fully considered and that a careful balance between air transportation needs and minimized environmental impact will be achieved. DOT further noted that changes to result from the project will positively operate to improve the area's collective environment and that the project will improve existing recreation facilities by substantially increasing beach, park and picnic areas, boat anchorages, public boat ramp facilities and moorage slips.

As to the possibility of the Council on Environmental Quality becoming involved in this project, I would like to quote from Chairman Train's statement at his confirmation hearings in February, 1970:

> I believe we must avoid becoming a sort of environmental fire brigade rushing from one brush fire to another. The temptation will be great on the part of the committees of the Congress, Federal agencies, and perhaps the public at large to refer controversial environmental issues—often local in nature—to the council for review and recommendation. The fact is that the Council is not equipped for such a role. It must be carefully selective in its choice of issues and, indeed, must exercise strict self-discipline in this matter because the temptation to respond will be great. It is my belief that the Council should deal with local issues only when they possess national significance.

The State of Oregon has been in the forefront of environmental protection legislation and practice. The Portland airport plan has been exhaustively studied by the local, State, and Federal agencies having jurisdiction over its execution. Why then should this amendment be offered that halts Federal funding for this project after Federal approvals have been granted and millions of dollars have been expended by local government agencies?

The passage of H.R. 17755 containing section 309 would result in the following:

First. The State of Oregon could not construct the airport plan which local, State, and Federal agencies have concluded is the best of the alternatives available.

Second. State agencies who have proceeded with planning and construction on the basis of previously granted Federal approval would suffer severe financial penalties without any means of recovering their losses.

Third. The Senate would be entering into a local dispute which, after 3 years of study, has not been shown to have national significance.

Mr. BIBLE. I have stated my strong support for this appropriation. I think it is fully documented and that it is completedly justified. I shall not repeat my argument at this time even though the temptation is great with such a large audience.

I yield to the distinguished Senator from Washington.

Mr. MATHIAS. Mr. President, will the Senator from Washington yield to me briefly?

Mr. JACKSON. I yield.

Mr. MATHIAS. The law provides in one of the basic precepts that a man should not be the judge of his own case. I am wondering who is going to evaluate the environmental data which will be adduced from flying and experiments which will take place if these prototype planes are built.

Mr. JACKSON. The evaluation will be done by all of the Government agencies as well as by private scientists. In other words, both the private sector and the public sector will, as they have been since the program's inception, be involved in this decision. There will be no failure to disclose scientific data, and I can assure the Senator of that.

Mr. President, yesterday and today we have been talking in the Senate as if the age of commercial supersonic flight was way off in the future. This is the most confusing nonsense that I have heard in a long, long time. The SST is here. It is now flying in France and Britain and Russia.

What we really have to decide today is this: Is the United States going to bug out? Are we going to leave for the first time the one area of technology and industry in which we have always been supreme? Are we going to turn our backs on American technology, science, and working men and women?

Mr. PROXMIRE. Mr. President, I yield 1 minute to the Senator from New Jersey.

The PRESIDING OFFICER. The Senator from New Jersey is recognized.

Mr. CASE. Mr. President, I thank the Senator from Wisconsin. I commend him for the tremendous presentation he has made on this issue.

The questions are not all one way or

the other. An editorial in the Washington Post this morning pointed that out in a measured and solid fashion.

Mr. President, I ask unanimous consent to have printed in the RECORD the editorial which was published in the Washington Post this morning.

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

THE SST: WHAT'S THE HURRY?

The Senate is scheduled to vote today on the money to proceed with the production of two prototype supersonic transports (SSTs) and our firm view, which we would be the first to admit has been slow in evolving, is that the vote should be to deny this appropriation and forgo further development of this aircraft at this time. It is not that we don't think that a safe and workable SST would be a nice thing to have—for the country or, for that matter, the world that has everything. It would carry almost 300 passengers at a breathtaking 1,800 miles an hour once in use, now scheduled to begin in 1978; and this would mean that you can leave New York City at 6 a.m. and attend a 3 p.m. business meeting in Paris and enjoy a dinner and even a little night life on the Champs Elysee, and be back in New York by 9 p.m. if all went well. It would, as its advocates contend, greatly shrink the globe, and this would be of particular significance for trans-Pacific travel—Los Angeles to Tokyo, for example. And it would enhance this country's reputation, not only as the predominant aircraft supplier on earth, but also as the greatest technological leader. It would be good for our image, and our economy and the balance of payments, and failure to build it would probably be injurious, to one degree or another, on all three counts, temporarily.

So there is much to be said in principle for having SSTs, not the least of which is that if we don't proceed, the French and the British are very likely to go ahead anyway with their Concorde, which is quite inferior to our proposed product, but also much farther advanced; moreover the Russians are quite likely to proceed with their similarly inferior version, the TU–144. So whatever we do, there may well be SSTs aloft in large numbers in the late 1970s, which would seem on its face to be reason enough to proceed posthaste, especially since all the Nixon administration is really asking for right now is $290 million, as part of a total cost to the government of $1.3 billion to build two prototypes. We can decide later, we are told, whether to go into full production, at an estimated cost of $3 billion to the craft industry (which may or may not involve further financial support from the government.)

The first thing to be said about this is that the increment under consideration will increase greatly the momentum of this project, to the point where it will be exceedingly difficult to cancel the whole thing later on, no matter what we discover from test flights of the prototypes. And the second thing to be very clear about is that we may make some very disagreeable discoveries from these test flights. There is, first of all, the problem of the engine noise which in the vicinity of airports will be considerably more intense than anything we are now familiar with, and of the shattering impact of the sonic boom. We are assured that these will not be allowed to discomfort us; that SSTs will be forbidden to fly overland until we have learned to muffle the sonic boom; that sharper decents and ascents will alleviate the noise; and that the proponents are prepared to write these rules into law. But we also know from past experience that laws can be changed and that the pressure to err on the side of progress-and-never-mind-the-inconvenience will be very powerful. When something is in hand that makes money—automobiles, for example, or factories that pollute—there is a tendency to try to live with it, however much it may diminish the quality of life.

So there are these uncertainties and one more which, by itself is argument enough, in our view, against proceeding with the SST now: that is the potential havoc it could wreak world-wide by the effect it may have on the air—the upper atmosphere—which envelops this planet. There is sharp disagreement on this point among the most distinguished and learned scientists; some predict that the vapor trails of a future fleet of SSTs will coat the globe with cirrus cloud, shutting out the sun and permanently affecting the climate; others see the SSTs destroying ozone and removing the shield against dangerous cancer-inducing, ultraviolet radiation. Others say these things won't happen. And that is just the point: *at this state they don't know.* Thus the Senate may today be giving a conclusive push forward to a project which is freighted with unknown menace, but which will, by this action, become all that much more difficult to halt; in the desperate international competition for purchase orders and prestige, hard-headed judgments become all the harder as the investment grows; yet if we seriously pollute the upper atmosphere and discover our error too late, it will be a good deal harder than even the Potomac River to de-pollute.

It is all very well to argue that we would be careful about this, and that if we found these aircraft to be a menace, we would have blown, at the worst, no more than another $500 million in addition to the $600 million or so already spent; you could even say that this is a fling worth taking—for the country that has everything.

But we don't. We confront shameful pockets of poverty, and a terrible and growing shortage of housing, and shockingly inadequate educational facilities, a fragile, inflation-ridden economy. We live in a time of social ferment, when a whole new generation is profoundly questioning our priorities; when something like an SST is to many people the very symbol of misplaced values and of old-fashioned reflexes to industrial jingoism and a concept of prestige which is sorely out of date.

President Nixon said he decided to proceed with the SST because "I want the United States to continue to lead the world in air transport." But he gave the game away just a little at the ceremony announcing that decision by pointedly offering his congratulations to the governor and other representatives from the State of Washington, which would be the principal economic beneficiary of the SST project. Either way, it's old-hat; even if you concede that the SSTs will work, the gain, let's be honest about it, would be marginal—a few hours saved for a relative handful of hard-pressed international businessmen (surely no vacation-bound tourist is going to insist on supersonic haste).

So our view is what's the hurry—either to cross the oceans or to build the SST? If the Nixon administration wishes to give leadership to the world, it might consider instead the impact of this country's forswearing temporary financial gain and a transitory feather in its technological cap in favor of a role as the leader in an urgent re-ordering of this country's and the world's priorities.

Mr. CASE. Mr. President, the other thing I wish to say is that I oppose the SST. On balance clearly we should not be doing this at this time. But no matter how the vote comes out we will have established one thing. The environmental questions involved are not going to be put down and in the end, if it proves to be no good, no matter if we spend $1 trillion on it, at that point we will stop it.

Mr. PROXMIRE. Mr. President, I would like to refer to the junior Senator from Maryland (Mr. MATHIAS) who asked who would evaluate the environmental data. There is a new commission that would evaluate the environmental data, and that commission does not include anyone from the Department of Health, Education, and Welfare, the Department of Interior, the Office of Science and Technology. This is very significant because these are people who in the President's ad hoc report were opposed to the SST for environmental reasons. Who will be on the commission? It will be chaired by the Department of Commerce and there will be members from McDonnell-Douglas and American Airlines. They will be biased. They will not be objective. This is a loaded commission. The citizen has no protection against environmental pollution.

The difficulty with this project is that 99 percent of the people who do not fly overseas regularly are the losers. What do they have to gain unless noise is good for you or that a potential increase in skin cancer is good, or it is good to suffer the tax increases the SST will require. The few people who do travel overseas will gain a few hours in flight time but the great majority of Americans will be losers.

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

Mr. PROXMIRE. I yield.

Mr. FULBRIGHT. I wonder what the Senator would say with regard to the question that we have an SST already in France and that we would be bugging out if we did not go on in connection with this matter.

It reminds me of the situation with regard to the British Comet which came before our 707, which proved that jets could fly, and it was misdesigned and had to be abandoned. But they were the first and it did not mean disaster to the American aircraft industry. On the contrary, we learned and we learned not to put the engine inside the wing.

I do not believe the history of the development of aircraft gives support to the idea that if the Concorde is developed we will suffer some disaster.

Mr. PROXMIRE. The evidence we have is that the Concorde has not been a success. Not one single option has been exercised. There has been no interest in the commercial SST. The fact is that American subsonic jets are supreme. There is no evidence I have heard that American subsonic jets are being challenged seriously competitively by the Concorde.

The American people would be the losers on another count, because they put up the money. We heard about the payback but they have conditioned that on the plane being successful. There is every reason to suspect it will not be successful. The losers will be the taxpayers who can only lose in this matter.

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

Mr. PROXMIRE. I yield.

Mr. FULBRIGHT. Since the Concorde is much closer to development why should we not wait to see what they develop? The British and the French are paying for research and development. Is there any reason why we cannot learn from their research and development?

Mr. PROXMIRE. I think we could save millions of dollars by doing that and I am positive the aircraft industry is so advanced that we could catch up.

Mr. FULBRIGHT. Just as in the case of the 707 and the Comet, we did not lose a thing by the British developing the Comet before we did.

Mr. PROXMIRE. Mr. President, in the closing minute I have I wish to point out that this is an issue of priorities. This year we are spending about $150 million to combat air pollution. On this SST project we are asked to spend $290 million to increase air pollution. This year we will spend only $208 million for mass transportation to provide the opportunity for literally millions of people to get to work. But we are going to spend $290 million here to provide a relatively small portion of the American people the means to fly overseas more rapidly. That does not make sense.

This is "the" priority issue of the year before Congress.

Finally we have the environmental problem. The environmental problem is the most serious development we have had in the last year or two. We know the ozone can be deteriorated because of the impact of the supersonic transport. That is a real possibility. If this happens radiation will increase on the earth and this can have an adverse effect on human beings, animals, and plant life.

Mr. President, I ask unanimous consent to have printed in the RECORD a series of articles and editorials in connection with the SST.

There being no objection, the articles were ordered to be printed in the RECORD, as follows:

DOWNWIND FROM THE SST

As the Senate nears its critical vote on the money for the supersonic transport, its advocates are making desperate efforts to assure approval.

With charming lack of humility, William M. Magruder, former test pilot who heads the Administration's lobbying effort for the SST, has published a paper accusing the nation's leading economists of a "basic lack of comprehension" of the airline industry. Professor Paul Samuelson may have won the Nobel Prize in economics and his anti-SST colleagues may stand at the peak of their profession but Mr. Magruder, no economist himself, calmly asserts that he knows more about the economics of aviation than they do. Perhaps a man who has flown through the sound barrier thinks nothing of shooting down a gaggle of economists, but earthbound laymen can only marvel at his mere expert knowledge.

James J. Harford, executive secretary of the American Institute of Aeronautics, writing on the Op-Ed page of this newspaper on Tuesday, offered some equally breath-taking assertions.

"Let's just assume that everyone agrees that the plane will give us a smooth ride at 60,000 feet where there's neither jumpy air nor traffic," he wrote. It is an assumption no one should make because air traffic controllers report that the SR-71, a military reconnaissance plane, has already encountered severe "clear air turbulence" at that altitude.

Mr. Harford asserts that the SST will cause only 2.5 pounds of "overpressure." But the Federal Government tactfully stopped sonic boom tests over Oklahoma City because overpressure of only 1.3 to 1.7 pounds provoked such painful noise levels. It is perfectly true that the SST will climb faster than the existing jumbo jets, but the harsh fact remains that while climbing from zero to 1,500 feet, the SST will make ear-shattering noise louder than anything today's jets produce. No solution is in sight. If any reputable scientist could offer hope of such a solution, the Department of Transportation would be heavily publicizing him. Instead, it is trying to hush-hush the problem because it cannot quiet the engine.

As for the ecological danger to the stratosphere, Mr. Harford and other SST advocates blithely compare the plane's effects to those of cloudbursts. But cloudbursts do not put water vapor into the stratosphere. The SST will. Because the consequences are incalculable, the scientific community is worried, and rightly so.

Regardless of the water vapor argument, the SST like all other jets is a major polluter. A fleet of 500 SST's will produce vast quantities of nitrogen oxide.

The SST cannot plausibly be advocated on the grounds that it is more "productive" than the jumbo jet or that it will hold down passenger fares. If either argument were valid, the airlines would be rushing to buy it rather than running away from it. In fact, the SST would cost at least twice as much as the 747 and would consume twice as much fuel while carrying only two-thirds as many passengers. It could only be commercially viable if passengers were willing to pay a stiff surcharge for riding on it.

Senator Magnuson of Washington has readied the final sales gimmick. He has a bill to forbid the SST from flying over land. But laws can always be repealed or revised. This one surely would be if experience showed that the SST could not make money if it only flew at top speed when over water.

The best way to prevent pollution, noise, waste, and ecological danger is to kill the SST before it ever flies. Senators have to turn aside from political expediency and vote to save the environment.

[From the New York Times, Dec. 3, 1970]

THE EVEREST ATTITUDE

(By Tom Wicker)

WASHINGTON.—The Senate debate on the provision of $290 million for the further development of the SST is part of a process that is more important than the outcome of the vote. This is not because the issue itself is negligible but because it is vital to advanced societies to make political decisions on great technological questions.

Whatever else is true of the SST, it apparently would represent a purely technological advance of some magnitude. The question, therefore, is whether the benefits of this advance are enough to outweigh whatever human and environmental prices must be paid for it. Since the dollar cost of the SST is so great that government participation was required, this particular technological decision has been subjected to continuing political debate.

At the very least, that debate has resulted in major modifications of the original concept, designed to reduce the aircraft's noise and the pollution it would cause. Flights at supersonic speeds over the United States may even be barred by law. This kind of regulation will not satisfy those who see no need at all for the SST, but suppose a similar political process had surrounded the development of the automobile three-quarters of a century ago? This might be an infinitely more habitable country today.

Far too many important technological developments, touching upon millions of lives, go forward like that of the automobile—in the hands of private interests, which may or may not feel a public responsibility. The computer boom of recent years is a classic example; only now, rather like a farmer locking his barn after his horse was stolen, is some beginning political consideration being given to the threats and abuses implicit in the proliferation of computerized data banks. Similarly, the development and widespread use of detergents, insecticides and herbicides was largely unhampered by any thought of the consequences now becoming horridly plain.

Just recently, the Canadian Government of Prime Minister Trudeau began the sensible process of protecting the Arctic waters against the disastrous consequences of major oil spills. In trying to write maritime regulations that would *prevent* such spills, rather than concentrating on cleaning up after them, the Canadians were shocked to learn that so many supertankers are presently ordered and under construction that shipyards can make no major design innovations to guard against spills until late in the 1970's. Once again, the horse has been stolen from an unlocked barn.

This problem takes on increasing importance with every year that passes, impelling the world further into an era of technological explosion. Moreover, technological discovery has a multiplying effect: the more we know, the more it becomes possible for us to know. The pace of change, like the speed of a falling object, constantly accelerates, but there is nothing resembling a rational political process by which most technological changes can be weighed and judged by those to be affected by them.

Of course, it is not possible to know in advance what all the consequences of some new piece of wizardry will be; and even if that were possible, it would be difficult to know in some cases whether a given consequence would work for the good or the detriment of mankind—or both. Blessings have a way of being mixed, and the most evil winds do occasionally blow some good in this contrary universe.

That is why the SST debate is important. The French and British are already building supersonic planes, and so are the Russians; it appears unlikely therefore that, whatever happens in the Senate this week, the world will hold itself inviolate against sonic booms and superspeeds. It is vital, nevertheless, that if the thing is to be done it should be done with as much foreknowledge as may be had, and with as many safeguards as possible for the environment and for the human condition.

Beyond that, the SST debate ought to have useful effect in conditioning the world's—particularly the American—state of mind to a new form of political responsibility. "What hath God wrought?" asked Morse in the first telegraph transmission a century and a quarter ago; but the question now is "What can men do?" So many possibilities, of such incredible scope, lie immediately before us that the Everest attitude—climbing the mountain because it is there—will no longer suffice. In the technological era, there may be no way to get down.

[From the New York Times, Dec. 2, 1970]

ADMINISTRATION ASSAILED BY MUSKIE ON THE SST

(By E. W. Kenworthy)

WASHINGTON.—Senator Edmund S. Muskie accused the Nixon Administration today of violating "the spirit if not the letter of the law" in the fight over the supersonic transport.

He said the Administration had done this by refusing to make available to Congress and the public the critical comments of several agencies in the "environmental impact" statement on the SST. The statement was prepared by the Department of Transportation.

Mr. Muskie made his charge during the first day's confirmation hearings on President Nixon's appointment of William D. Ruckelshaus, formerly Assistant Attorney General in the Civil Division, as director of the new Environmental Protection Agency.

The Transportation Department replied later in the day that it would continue to keep outside comments on the SST secret until it had received the last two out of a total of 11 comments requested from other Government agencies.

Senator Muskie's attack was one of several maneuvers today as the Senate approached a vote Thursday on a further $290-million appropriation for development of prototypes of the 1800-mile-an-hour jetliner.

Senator Gaylord Nelson, Democrat of Wisconsin, an opponent of the supersonic transport, released the Interior Department's heretofore private comments on the airliner.

CURB ON FLIGHTS GAINS

The comments included the statement that the department "foresees no serious adverse environmental problems" arising from the prototype program. But they also raised questions about sonic boom, take-off noise and climatic consequences, questions that the department felt would be answered before the start of commercial production.

The anti-SST coalition in the Senate could claim three new members: Senators Alan Cranston, Democrat of California; Len B. Jordan, Republican of Idaho and Jack Miller, Republican of Iowa. Yet there was also powerful new pressure on Senator Mark O. Hatfield, Republican of Oregon, to move away from his position last year against the airliner.

At the same time, Senator Warren G. Magnuson, Democrat of Washington, moved through the Commerce Committee a bill that would ban SST flights over land and thus perhaps appease some of the environmentalists.

The hearings on Mr. Ruckelshaus's appointment are being conducted by the Senate Public Works Committee, which has primary responsibility for antipollution legislation. But because the environmental protection agency will absorb 15 organizations from half a dozen departments and agencies, Senator Jennings Randolph, chairman of the Public Works Committee, invited the chairmen and ranking minority members of the Interior, Commerce, Labor and Agriculture Committees to attend.

In the SST discussion, which took up a good part of the hearing, Senator Muskie recounted his annoyance with what he called the Transportation Department's lateness in circulating an SST impact statement to the White House Council on Environmental Quality.

The Environmental Policy Act of 1969 requires that every agency must prepare such a statement when recommending any action "significantly affecting the quality of the human environment." Prior to making any final statement, the agency must circulate the draft statement for comments by other agencies.

"Copies of such statement" and the comments of other agencies must be sent to the Council on Environmental Quality and Congress and be made public, and must "accompany the proposal through the existing agency review process."

Two and a half months later, Senator Muskie said today, the Department of Transportation still says that the comments sought from 11 other agencies "are not available," and that many of them were "oral" and "not reduced to writing."

In a letter this morning to Transportation Secretary John A. Volpe, Senator Muskie and Senator William Proxmire, Democrat of Wisconsin, asked that the comments be released before the Senate vote. But department spokesmen said that not all the comments had been received and that "we consider it inappropriate to release these reports in piecemeal fashion."

"AMBIGUITY" SEEN

Asked by Mr. Muskie for his views, Mr. Ruckelshaus said he felt that the impact statement and comments should be part of the written, public record before any decisions was made to go ahead with a project. But he said he believed there was "some ambiguity in the law."

During the discussion of the point, Senator Henry M. Jackson, Democrat of Washington, entered the hearing room. Mr. Jackson is a strong partisan of the supersonic transport, which would be built largely by the Boeing Company in Seattle. But he was also author of the Environmental Policy Act, and had been particularly proud of the "action-forcing" environmental impact statements.

Mr. PROXMIRE. Mr. President, I yield the floor.

The PRESIDING OFFICER (Mr. SAXBE). The question is on agreeing to the amendment of the Senator from Wisconsin.

Mr. BIBLE. Mr. President, a parliamentary inquiry.

The PRESIDING OFFICER. The Senator will state it.

Mr. BIBLE. First, Mr. President, I request the yeas and nays, if they have not been previously ordered.

The yeas and nays were ordered.

Mr. BIBLE. Second, a parliamentary inquiry, Mr. President.

The PRESIDING OFFICER. The Senator will state it.

Mr. BIBLE. Is a "yea" vote a vote for the Proxmire amendment, and a "nay" vote a vote against the Proxmire amendment?

The PRESIDING OFFICER. A "yea" vote is a vote for the Proxmire amendment to strike.

Mr. BYRD of West Virginia. Mr. President, I ask unanimous consent, now that the time has arrived for the vote and there is no need for staff members on the floor, that the floor be cleared of all staff members until the vote has been announced.

The PRESIDING OFFICER. Is there objection?

Mr. COOK. Mr. President, I object.

The PRESIDING OFFICER. Objection is heard.

The question is on agreeing to the amendment of the Senator from Wisconsin (Mr. PROXMIRE). The yeas and nays have been ordered, and the clerk will call the roll.

The legislative clerk called the roll.

Mr. METCALF. Mr. President, on this vote I have a pair with the Senator from South Dakota (Mr. MUNDT). If he were present and voting, he would vote "nay." If I were permitted to vote, I would vote "yea." I heretofore withhold my vote.

Mr. MOSS (after having voted in the negative.) Mr. President, on this vote I have a pair with the Senator from New Mexico (Mr. MONTOYA). If he were present and voting, he would vote "yea." I have heretofore voted in the negative.

I withdraw my vote.

Mr. KENNEDY. I announce that the Senator from Idaho (Mr. CHURCH) is necessarily absent.

I further announce that the Senator from New Mexico (Mr. MONTOYA) is absent on official business.

I further announce that, if present and voting, the Senator from Idaho (Mr. CHURCH) would vote "yea".

Mr. GRIFFIN. I announce that the Senator from Colorado (Mr. DOMINICK) is necessarily absent, and if present and voting, would vote "yea."

The Senator from South Dakota (Mr. MUNDT) is absent because of illness, and his pair has been previously announced.

The Senator from Oregon (Mr. HATFIELD) is necessarily absent, and if present and voting, would vote "yea."

The PRESIDING OFFICER. The galleries are cautioned that on announcement of the vote no demonstration will be tolerated or the galleries will be cleared.

The result was announced—yeas 52, nays 41, as follows:

[No. 411 Leg.]

YEAS—52

Aiken	Harris	Packwood
Allen	Hart	Pastore
Bayh	Hartke	Pell
Brooke	Holland	Percy
Burdick	Hughes	Prouty
Byrd, Va.	Javits	Proxmire
Case	Jordan, N.C.	Ribicoff
Cook	Jordan, Idaho	Schweiker
Cooper	Kennedy	Smith
Cranston	Mansfield	Spong
Eagleton	McCarthy	Stevenson
Ervin	McGee	Symington
Fong	McGovern	Tydings
Fulbright	McIntyre	Williams, N.J.
Goodell	Miller	Williams, Del.
Gore	Mondale	Young, Ohio
Griffin	Muskie	
Hansen	Nelson	

NAYS—41

Allott	Ellender	Pearson
Anderson	Fannin	Randolph
Baker	Goldwater	Russell
Bellmon	Gravel	Saxbe
Bennett	Gurney	Scott
Bible	Hollings	Sparkman
Boggs	Hruska	Stennis
Byrd, W. Va.	Inouye	Stevens
Cannon	Jackson	Talmadge
Cotton	Long	Thurmond
Curtis	Magnuson	Tower
Dodd	Mathias	Yarborough
Dole	McClellan	Young, N. Dak.
Eastland	Murphy	

PRESENT AND GIVING LIVE PAIRS AS PREVIOUSLY RECORDED—2

Metcalf, for.
Moss, against.

NOT VOTING—5

Church	Hatfield	Mundt
Dominick	Montoya	

So Mr. PROXMIRE's amendment was agreed to.

Mr. PROXMIRE. Mr. President, I move to reconsider the vote by which the amendment was agreed to.

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

The motion to lay on the table was agreed to.

The PRESIDING OFFICER (Mr. SAXBE). The Senate will be in order.

Mr. BYRD of West Virginia. Mr. President, may we have order? We must have order in the Chamber.

The PRESIDING OFFICER. The Senate will be in order. The bill is open to amendment.

Mr. MAGNUSON. Mr. President——

The PRESIDING OFFICER. The Senator from Washington is recognized.

Mr. BYRD of West Virginia. Mr. President, will the Senator yield?

Mr. MAGNUSON. I yield.

Mr. BYRD of West Virginia. Mr. Pres-

ident, I thank the able Senator for yielding. I would simply like to state for the RECORD, if we may have order, that on the SST vote, there were 46 clerks from Republican Senators' offices and there were 36 Democratic clerks on the floor of the Senate, making a total of 82 staff personnel from the offices of Senators on the floor of the Senate during the roll-call vote which has just occurred.

I thank the Senator for yielding.

Mr. MAGNUSON. Mr. President, I ask unanimous consent, with the approval of the manager of the bill——

The PRESIDING OFFICER. The Senate will be in order. It will be necessary to clear the staff members from the floor, and to delay proceedings further, unless we can have order. If Senators will sit down and staff members will leave or find seats, we can proceed with the business of the Senate. The Chair requests the attendants in the gallery to instruct visitors to move in and out quietly, or keep the doors closed.

The Senator from Washington may proceed.

Mr. MAGNUSON. Mr. President, earlier in the day I had a colloquy with the Senators from Oregon, in which I suggested that the matter in section 309 of the bill was probably not properly the subject of legislation, therefore, I would ask unanimous consent to remove section 309 from the bill, but with the same understanding I had—that I am still going to say something about this in the report in the conference. Both sections 308 and 309 logically belong in the report. Someone could have made a point of order against it.

With that understanding, I ask unanimous consent that section 309 be removed from the bill.

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

Mr. MAGNUSON. I yield.

Mr. BIBLE. I was present during the course of the entire colloquy with the two Senators from Oregon and the Senator from Washington and myself, and I think the request is perfectly proper. I have no objection to it, and I hope it is granted.

The PRESIDING OFFICER. Is there objection? The Chair hears none, and it is so ordered.

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

Mr. MAGNUSON. I yield.

Mr. CASE. Did the Senator's request include section 308?

Mr. MAGNUSON. No, just section 309.

Mr. MURPHY. Mr. President, we cannot hear the conversation. I am not even certain what the matter under discussion is. There was so much noise and disorder when it started that I have no idea what is being discussed. I ask for guidance from the Chair at the moment so that at least we will have an idea what the discussion is about.

The PRESIDING OFFICER. The request was made to eliminate section 309 from the bill. There was no objection to the request.

Mr. BIBLE. Mr. President, I concur in what the Senator from California has said. I hope we have quiet. We still have a little more discussion on the bill. We are over the explosive problem, the one that has involved the Senate all day. We still have other areas to cover, and a number of Senators want to offer amendments. But I first request that we have quiet, and I suggest that we not proceed until we do have quiet.

The PRESIDING OFFICER. The Chair suggests that Senators who wish to carry on conversations proceed to the cloakrooms.

The Chair directs the Sergeant at Arms to poll the clerks to see which ones are needed in the Chamber, and the ones who are not needed will be asked to leave. If a Senator wants a clerk present, he can so indicate.

Mr. BIBLE. Speaking for the Appropriations Committee, I need only one clerk, and he is at my right hand. I do not need anyone else.

The PRESIDING OFFICER. The Sergeant at Arms will proceed to do that. If a Senator is not in the Chamber and it is not necessary that the clerk be in the Chamber, the Chair asks that the clerk proceed to the gallery.

Mr. BIBLE. Mr. President, a parliamentary inquiry.

The PRESIDING OFFICER. The Senator will state it.

Mr. BIBLE. What is the pending matter?

The PRESIDING OFFICER. The bill is open to amendment.

AMENDMENT NO. 1093

Mr. HART. Mr. President, I call up amendment No. 1093.

The PRESIDING OFFICER. The amendment will be stated.

The legislative clerk read as follows:

On page 13, line 18, strike out "$47,601,000" and insert in lieu thereof "$58,301,000".

On page 13, line 20, before the period insert a comma and the following: "of which not less than $10,700,000 shall be available for research and programs designated to (1) lessen the risks of injury and death to occupants of motor vehicles and pedestrians involved in traffic accidents, (2) develop motor vehicles which are less susceptible to damage in traffic accidents occurring at normal operating speeds, and (3) develop a uniform quality grading system for tires, and for the payment of a staff of fifty persons in excess of present personnel engaged in carrying out these activities, to remain available until June 30, 1972, as authorized by Public Law 563 and Public Law 564".

Mr. HART. Mr. President, this amendment is offered by the able Senator from Wisconsin (Mr. NELSON), the able Senator from Indiana (Mr. HARTKE), and myself. It seeks to increase by $10 million the money that shall be made available to the National Highway Safety Bureau.

We intend, as the amendment reflects, to have this money used for tests and research to develop means of lessening the risk to the occupant of a car in the event it is in an accident, to develop motor vehicles less susceptible to damage in traffic accidents when they are proceeding at the normal speed, and, third, to develop uniform quality grading systems for tires.

Unfortunately, in the hurly-burly of living and the long experience we have had with highway deaths in the 30,000's and 40,000's and now 50,000's, on occasion we give signs of thinking that this is just something that must be. Only recently has an awareness developed that one reason for the skyrocketing cost of automobile insurance is the delicacy with which some of those cars are constructed and the shortsightedness in the design of many of them.

To the great credit of Dr. Haddon, the former director of this bureau, a film has been put together that is making clear to the people of this country that traveling at 5 miles an hour, which is the speed of a fast walker, the most popular makes of American automobiles when hitting an object incur damage that averages $200 for repair.

To Detroit's credit, a reaction is going on, and there is a conscious effort to see whether they can make bumpers serve more than cosmetic purposes—indeed, to see whether they can make automobiles the bumpers on each of which ride on the same level as the other fellow's, so that on impact it is not the hood ornament that strikes first but actually the bumper.

The National Highway Safety Bureau is authorized to make property damage studies. It is authorized to move forward to see whether there is a possibility of a technique that will permit not alone the development of automobiles which are more easily repaired and which suffer less damage on a crash but also in which the occupant, while riding, has a greater chance for survival and less likelihood of injury in the event of impact.

This amendment would increase substantially the sum intended to go forward with that type of research.

It is my feeling that the Department of Transportation views the effort to research the problem of reducing property damage as having a relatively low order of priority. I would hope that for this amendment they would be given the tools, the money, to bring up that aspect of their research program to one of very top priority.

I do hope, Mr. President, that the concern which is reflected in the offering of this amendment, and the more detailed explanation of its reasons which accompanied its printing in the RECORD yesterday, will persuade the Department and ourselves to move more rapidly on the effort of designing and improving both the safety aspect for the occupant and the repair costs for the owner.

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

Mr. HART. I yield.

Mr. BIBLE. Mr. President, the Senator was kind enough to talk to me about this amendment within the last several days—I do not recall exactly which day, because we have been somewhat preoccupied with the SST—but he talked to me about this and I pointed out, and would point out for the RECORD, Mr. President, that the budget estimate on this was $53,075,000. The House allowed $40,435,000. We heard the Department of Transportation some time in August, I believe, and they filed an appeal to the extent of an additional $7,166,000. They made a strong showing for the need of the additional money, both to go into contractual work and the additional staffing up of this bureau. I thought they

made an excellent case and we granted them $47,601,000, which was $7,166,000 higher than the House figure.

The report, in its language on page 17, details the House allowance in the various areas insofar as employment is concerned, with our recommendation for increasing them in the various activities.

I think that the Senator from Michigan, as he always does, makes a most emphatic case, but I would point out that I think we have been most liberal and this will move it along in the right direction. Possibly, if they are not moving in the right direction, this is December and by the time the bill comes out of conference and is signed by the President, 6 months of the fiscal year will have gone by. All of those factors should be borne in mind and I would, therefore, hope that the Senator would not press his amendment any further.

I assure the Senator from Michigan that when we get into this next year, if he will be so kind as to monitor this himself and give us the areas of concern which he has mentioned, we will follow through and see what they are giving emphasis to; because I could not agree more with the Senator that these are areas that do need increasing attention and if they do not get that attention, with this added money, then we will do something about it. come next year.

Mr. CASE. If the Senator from Nevada will yield a moment, I want to support the chairman's statement. It is a matter of highest priority for all of us on the subcommittee. We accept the suggestion that the Senator from Michigan has made, warmly indeed.

As the year develops, we can look into the possibility of useful expenditures of larger sums along this line. I am sure that the subcommittee, as the chairman has stated, will entertain that suggestion warmly.

Mr. HART. Mr. President, I am grateful for the expressions from the Senator from Nevada (Mr. BIBLE), and the Senator from New Jersey (Mr. CASE) who is the ranking Republican Member. I do know of their interest.

The Senator from New Jersey (Mr. CASE) comes from a State whose citizens travel almost as many automobile miles as any other State in the country, and where the concentration of vehicular traffic on occasion is so great as almost to paralyze a community; and the Senator from Nevada (Mr. BIBLE) comes from a State which, except for the grandeur of the scenery, which might slow down a driver, has such sweeping roads that one is tempted, sometimes, to find out whether that needle on the speedometer will reach 130, are highly sensitive with respect to the obligation to insure that the Highway Safety Bureau does produce.

I acknowledge their leadership in bringing this bill to the Senate with an additional $7 million over the figure fixed by the House. I am conscious, of course, that 6 months has passed since the budget figure was suggested. I am tempted to press forward with the amendment, yet in the light of the assurances just voiced, perhaps the cause which attracts our interest will best be served by leaving this record as it is.

I should like to ask just one additional question of the Senator from Nevada, if I may.

Mr. BIBLE. Certainly.

Mr. HART. It is understood, I take it, that the Department of Transportation is asked to move forward and report its progress on the actions it has taken, or proposes to take, to reduce property damage in automobile accidents, as that is our point and purpose?

Mr. BIBLE. I understand, and in responding to the Senator from Michigan, let me say that he can rest assured we will press for their reassurance on that very area and that very program. We will first call to the attention of the department the colloquy on the floor here today, and then we will say that we will monitor it rather regularly and within a matter of 2 or 3 months will write them again to see what they have done about it. We will keep on doing that.

Now I do not wish to talk further to the point of interrupting the Senator from Michigan, but those of us in Nevada have a real, high stake in this highway safety program. Nevada has built bigger, wider, and faster roads and yet more and more and more people are being killed on the highways. The death record in Nevada, over the past few years, is shameful, frankly, on a per capita basis of a State with a population of 480,000. Although there is widespread tourism in Nevada, with great numbers coming in throughout the year, nevertheless, deaths on the highways in the State of Nevada are alarming.

Thus, I can assure the Senator from Michigan that not only from his standpoint but also from my personal interest in this matter, I will follow through closely.

Mr. HART. Mr. President, I am very grateful for that statement.

Let me conclude by expressing the hope that the Appropriations Committee will ask of the Department a budget estimate for fiscal 1972 that will include funds adequate both for research and personnel to check on the loss reductions in property damage resulting from vehicular accidents.

Mr. BIBLE. We will be happy to do that. When I asked the Department, they said that they would try it, and we will have this opportunity to look into it when it becomes before the committee. We both see this thing the same way.

Do I understand that the Senator has called up his amendment?

Mr. HART. Yes, I have called it up, but I am about to take it down.

Mr. President, I should like to add for the RECORD an article published in the Automotive News of November 30, 1970, written by Helen Kahn, the Washington Bureau Chief, entitled "Improved Safety Standards Urged." It develops from a study prepared by Dr. Nicholas Perrone of the Office of Naval Research and Catholic University. The cost-benefit ratio per vehicle safety is an astounding figure. He takes the damage figure and projects the automobile population in the years ahead, he averages the damage cost over that period of time, and then he projects over the same period the lesser cost that would be available, and at what price to the development of safety techniques and technology, and he figures the national cost return, per safety dollar spent, to be 20 to 1 as the cost-benefit ratio.

Humanitarian considerations aside, thinking not of the occupant of the vehicle, but of the cost resulting from property damage in an accident, the cost to benefit ratio should certainly persuade the bureau to begin what they are trying to eliminate on the roads—a crash program.

Mr. President, I ask unanimous consent that the article to which I have referred be printed in the RECORD.

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

IMPROVED SAFETY STANDARDS URGED

(By Helen Kahn)

WASHINGTON.—Federal vehicle safety standards can be radically improved to save hundreds of lives, prevent thousands of injuries and reduce by millions of dollars the amount of property damage incurred every year in the U.S., according to a paper prepared by Dr. Nicholas Perrone, of the office of Naval Research and Catholic University.

Finished in September, the report emphasizes crashworthiness and presents a number of ideas which are now being implemented by the National Highway Safety Bureau. Perrone's position has a certain amount of strength in that he is not affiliated with either the government or the auto industry.

Perrone is a member of Professionals for Auto Safety, a group associated with Ralph Nader and composed of engineers, scientists, doctors and lawyers. Financed by private contributions, PAS is dedicated to the coordination of scientific and legal data relating to auto safety for use in upgrading vehicle safety regulations.

Perrone, the first member of PAS to swing into action, has a background in dynamic plasticity, directly related to structural impact. He empaneled a special task force on auto safety, primarily from universities, the Center for Auto Safety and the Consumers Union. Among those serving on the task force was a former president of the American Society of Mechanical Engineers.

Perrone said that improvements in dashboards, door posts, windshield headers, main structural elements and the front seat are needed. He advocates vigorous pursuit of the air bag, better bumpers and chemically treated laminated glass for side windows. The Safety Bureau is active in all these areas.

Perrone's greatest contribution lies in his analysis of the cost/benefit ratio for vehicle safety. This is aside from humanitarian considerations and is the sort of data most likely to appeal to Congress, which controls the pursestrings for the Safety Bureau.

Perrone advocates a large increase in highway research funds, an immediate build up in government laboratory capacity, development of a wide university/industry research support base, developing resource allocation models, broadening the engineering base for auto safety research and starting safety engineering education programs on a massive scale.

Although the Safety Bureau does have research money to dole out, little has been done and much remains ahead before even standards themselves can be improved. Fundamental research is still needed on the causes and effects of auto accidents.

Except for the National Bureau of Standards, the government has virtually no facilities for experimentation or compliance work. The regulators are in the questionable position of being overwhelmed by industry facilities and are not in any position to show

that industry can accomplish a job when the companies say they can not.

Perrone argues that materials capable of absorbing an additional 200,000 foot-pounds of energy must be added to the vehicle to reach a minimal plateau of safety.

A 3,000 pound car traveling at 30 miles per hour has about 90,000 foot-pounds of energy. Using low strength steel, Perrone figures, this means about 333 pounds but by judicious design, 200 pounds of material should do. At a cost plus fabrication figure of 20 cents a pound, this would mean about $40 per car for a significant increment in crashworthiness capabilities both inside and outside.

Perrone places the cost of chemically treated laminated glass for side windows plus windshield at around $20 per car, boosting the total to $60 per unit.

According to Perrone: "Over a six-year period, with nine million cars per year as a production estimate, the total added cost would be $3 billion. Six years hence, with a population of some 50-million cars with well-tuned crashworthy features built-in, the annual savings in terms of current and future gross national product should then be running at an annual rate of $10 to $20 billion per year. . . . Moreover, the savings figure should rise constantly in subsequent years, probably reaching a plateau at a $25 billion per year level of annual savings.

"For the aforementioned six-year period, the total current/future GNP increase would be approximately $60 billion, based on a $10 billion per year average. The 'return' per safety dollar spent is therefore 20 to 1. The apparent axiom to be derived from these projections is that safety pays for itself, indeed with added dividends."

Perrone figures average production costs for air bags at perhaps $60 to $100 per car and claims that the cost benefit profile would be similar. He also cites a social savings with much less disabling and disfiguring injuries.

In respect to resource allocation, Perrone compared expenditures for the Vietnam effort and automobile safety over a ten-year period.

He figures the national cost of Vietnam as $150 billion in the period, far less than the $375 billion GNP cost of auto accidents. Fatalities in Vietnam would be 40,000 as against 500,000 deaths from auto mishaps. In Vietnam serious injuries over the 10-year period would total 250,000, compared with 15 million for auto accidents, he estimated.

Current spending in Vietnam would be $25 billion and expenditures to prevent deaths and injuries in car accidents would be $.028 billion, Perrone said.

Although 12 people die in the U.S. from auto accidents for every one killed in Vietnam and 60 are injured for every soldier hurt in Vietnam, only "one dollar is spent on automobile safety for every thousand dollars spent in Vietnam" in the current fiscal year, he said.

Perrone deplores what he calls the low level of operation of the Safety Bureau and suggests that upgrading now would be particularly appropriate for building a strong technical base because of the massive layoffs of engineering talent from aerospace and related industries.

Perrone also cites the Safety Bureau's lack of in-house laboratory capabilities and independent expert sources. He said that universities would be glad to participate in automotive safety research.

Mr. NELSON. Mr. President, when the National Traffic and Motor Vehicle Safety Act became law in 1966, it was hoped that sweeping highway safety programs would soon drastically reduce the Nation's highway accident and injury rate. But as Ralph Nader has noted, since that time the annual highway death rate increased from 49,000 to 56,400.

There was a snag. As in many other areas, Congress could establish effective requirements, but it did not follow through with the money necessary to carry out the requirements.

The National Highway Safety Bureau was created in the Department of Transportation, but since its inception it has been chronically understaffed. Programs required under law could not be implemented because the manpower and the funds simply have not been available.

An example is tire safety. Annoying though defective tires may be, tire safety involves more than consumer fraud or automobile passenger comfort. Tire safety is a matter of life and death.

The Massachusetts Turnpike Authority statistics for 1965 indicate that at a minimum, 10 percent of the turnpike accidents could be attributed to mechanical failure. Half of these, or 5 percent of the total, were due to tire failure.

My office has been flooded with reports of top line, highly advertised, and high-priced tires which not only fell short of delivering the 40,000 miles performance implied in the advertising, but which failed at 10,000 to 15,000 miles.

One constituent wrote me that 6 months after buying a new automobile with top brand-name tires, the tread on the left rear tire peeled off in a 24-inch strip, at 60 to 65 miles per hour. The tire had 5,500 miles wear.

The number of tire recalls since 1966 indicates that a significant proportion of the 200 million passenger car tires produced each year by the American tire industry are defective. During the last 4 years, there have been 42 tire recalls, with a total of 568,476 tires involved. Of the recalls, eight were influenced by Bureau action. Additionally, there have been five civil penalty actions for noncompliance with safety standards.

The automobile tire is increasingly complex in construction, with a proliferation of new types and models, such as bias belt, radial belted, fiberglass, and steel belted types. Tread Design Guide for 1970 identified more than 1,000 tires by brand name alone.

Faced with this bewildering number of options, and armed with no yardstick that would tell what the tire quality should be, regardless of designation and price, the buyer is unable to judge what to buy. At the same time, the industry has no uniform quality standards to rate its own products.

The Federal Trade Commission described the problem, from the consumers point of view, in 1966: In its Tire Advertising and Labeling Guide, it said:

> There exists today no industrywide, government or other accepted system of quality standards or grading of industry products. Within the industry, however, a variety of trade terminology has developed which, when used in conjunction with consumer transactions, has the tendency to suggest that a system of quality standards or grading does, in fact, exist. Typical of such terminology are the expressions "line," "level," and "premium." The exact meaning of such terminology may vary from one industry member to another. Therefore, the "1st line" or "100 level" or "premium" tire of one industry member may be grossly inferior to the "1st line" or "100 level" or "premium" tire of another member since in the absence of an accepted system of grading or quality standards, each member can determine what "line," "level," or "premium" classification to attach to a tire.

The FTC comments imply that advertising and merchandising men have been able to make arbitrary judgments about quality standards. Since then, the situation has changed little.

To combat this problem, the 1966 act directed the Secretary of Transportation to develop a uniform quality grading system, and to publish the system within 2 years. Four years have now passed, and still there is no quality grading system.

In its 1969 report to Congress, the National Highway Safety Bureau said the system it is planning would be based upon six tire characteristics which are representative of the tire's overall performance.

These are:

First. High-speed capability—the ability to absorb and dissipate temperatures generated within the tread and sidewall areas at specified speeds.

Second. Impact resistance—a measure of the tire's resistance to road hazard damage, such as stones, potholes, and curbs.

Third. Endurance—a measure of the tire's ability to maintain integrity under sustained overload conditions.

Fourth. Force variation—a measure of the variation in radial and lateral forces of a tire. An excessive force variation results in vibration and detracts from the riding qualities. This is more important from a consumer comfort and quality standpoint than from that of safety.

Fifth. Traction—a measure of the tire's ability to transmit braking, cornering, and accelerating forces.

Sixth. Tread wear—a measure of the tire's relative rate of wear. This is the primary economic factor—cost per mile.

So far, limited funding and personnel restrictions have hindered the development of the grading system. At the present state-of-the-art, testing procedures for only one characteristic, high-speed capability, are considered fully adequate for a quality standard. Significant progress has been made in all areas, however, except traction and tread wear.

Mr. Douglas Toms, Director of the National Highway Safety Bureau, testified before a subcommittee of the House Appropriations Committee that the toughest problem is the relationship between traction and tread wear. He said:

> As you improve traction, you deteriorate tread wear, and so as you attempt to come up with a grading system, and specify what the tread wear must be, you lose your traction.

The degree of difficulty is further indicated by the failure of the tire industry, over the years, to produce such a standard.

The Bureau has issued two safety standards so far. These are the Federal Motor Vehicle Safety Standard 109 and 110. Standard 109, which became effective January 1, 1968, specifies minimum requirements for bead unseating resistance—ability to stay on the wheel rim, strength—road hazard, en-

durance—tire flexing in an overloaded condition, and high-speed performance. The standard also defines tire load ratings and specifies labeling reuirements.

Standard 110 went into effect on April 1, 1968, and it defined loading and weight values to be used in selecting tires and rims for passenger cars. It required the vehicle manufacturer to display the vehicle capacity weight, seating capacity, recommended tire inflation pressure, and recommended tire size designation.

With the limited criteria established under these standards, it has been apparent in random testing that between 5 and 10 percent of the tires poduced in this country every year do not comply with minimum safety standards. Tests have been conducted since 1968.

Currently, the noncompliance rate is at about 5.4 percent. This means that out of a total annual production of 200 million tires, 11 to 12 million are unsafe.

In order to develop a complete uniform quality grading system, the National Highway Safety Bureau has proposed a 4-year plan. The cost, for fiscal year 1971, would be $4 million, and the estimated total cost would be around $16 million, through fiscal year 1974.

The plan calls for developing four key elements: a standard tire—against which new tires can be measured—a standard test vehicle, a standard road or course; and a standard test procedure. The work planned to get underway during fiscal year 1971 will initiate the design, fabrication and some testing of the standard tire, the design of the standard vehicles, the preparation of a standard road course, and the beginning of developing integrated test procedures for all these elements.

In a rough breakdown of the first year appropriation, $2.2 million would be spent for developing the road, $1.3 million for the tire and test procedures, and another $0.5 million for a standard vehicle. Around half of this money would go to the National Bureau of Standards, and the rest would be spent in other Government agencies and for private contractors.

By using a standard vehicle, tire, course, and procedure, the Bureau could rate the relative performance of new tires and tread designs under road conditions. The tire industry could correlate its efforts with those of the Bureau and bring its own testing program into line with the national standards.

This plan cannot proceed unless it is funded with the full $4 million requested by the administration. Despite inflationary pressures and the desire to keep the Federal budget within strictly controlled limits, President Nixon gave a high priority to the tire program, along with other traffic and highway safety programs in his budget request for fiscal year 1971. The President asked for the full $4 million necessary for the program, but the House cut the appropriation to the 1970 funding level of $970,000.

Unfortunately, the Senate Appropriations Committee sustained this cut.

Senator PHILIP HART has introduced an amendment to the Department of Transportation appropriations bill, H.R. 17755, proposing that an additional $10 million and 50 professional personnal positions be added to the National Highway Safety Bureau.

This proposal, which I cosponsor, would restore the $3.03 million to the Bureau for developing the uniform quality grading system for tires. In addition, it would provide funds and people for developing property control damage programs through research, help insure that crashworthy designs are incorporated in motor vehicles after January 1, 1975, and develop uniform standards for used vehicles.

The cost of this additional appropriation is miniscule compared with the sums contemplated for other transportation programs, some of which have dubious value. Meanwhile, the highway death rate climbs and everybody wonders when somebody is going to do something about it.

We have a chance, with a small appropriation, to press the attack against one of the most evasive problems of highway safety. If we fail to act decisively here, we are failing in our responsibilities to the people who have elected us. Congress has taken a stand for highway safety. It would be rank hypocrisy not to back up that stand where it counts—in spending a few dollars to institute a safety program that must come.

Mr. HART. Mr. President, I withdraw the amendment and I again thank the Senator from Nevada for yielding.

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

Mr. COOPER. Mr. President, I send an amendment to the desk and ask that it be stated.

The PRESIDING OFFICER. The amendment will be stated.

The assistant legislative clerk proceeded to read as follows:

The Senator from Kentucky (Mr. COOPER) proposes an amendment for himself, the Senator from West Virginia (Mr. RANDOLPH), the Senator from Delaware (Mr. BOGGS), and the Senator from Colorado (Mr. ALLOTT), as follows:

On page 19, beginning at line 24, strike out all through line 2, on page 20.

Mr. COOPER. Mr. President, I shall be brief. The purpose of the amendment is to strike the language on page 19, section 303, on line 24, "None of the funds provided under this act shall be available for the planning or execution of programs, the obligations of which are in excess of $5,500,000 for 'Highway Beautification' in fiscal year 1971."

Mr. President, we who favor the striking of the limitation on the availability of funds for the planning or execution of highway beautification programs for fiscal year 1971 in excess of $5.5 million, do so for a very simple reason. Funds for fiscal year 1971 have not yet been authorized; the legislation which would provide for such authorization is about to be conferred on by members of the House and Senate Public Works Committees. The determination to be made by the Senate-House conference is crucial to the future of the beautification program because the House bill authorizes appropriations to be taken from the general fund and the Senate bill authorizes funding of the program from the highway trust fund.

At this point, Mr. President, I would like to quote from the report of the Public Works Committee of the Senate which accompanied S. 4418, the Federal-Aid Highway Act of 1970. On page 6 the report states:

The highway beautification program has since its inception suffered from inadequate funding which has prevented any significant degree of implementation.

This bill would remove the major barrier to an effective beautification program by providing financing through the highway trust fund. Assured financing will permit the implementation of the highway beautification program in an orderly manner.

The Senate and House conferees are meeting this very afternoon in an attempt to reach compromise on the Federal-Aid Highway Act of 1970, but there are many substantive differences between the bills passed by each House and it is therefore, hard to know when agreement might be reached. We, therefore, believe that our position in that conference would be significantly weakened, relative to defending the Senate position on funding highway beautification programs, if the appropriations bills passed by both Houses were identical as far as the limitation on obligations were concerned. We would hope that the members of the conference on the appropriations bill would confer on this limitation figure in the light of the action taken by the conference on the authorization bill. If the Senate enacts the Department of Transportation appropriations bill with the limitation section, section 303, intact, then, I believe both the authorization bill conference's and the appropriations bill conference's will be prejudiced.

The Senate with the passage of the Federal-Aid Highway of 1970 clearly endorsed a strengthened highway beautification program with funding adequate to allow the program to demonstrate its worth. Section 303 of the appropriations bill as it now stands jeopardizes the future of that action and should be removed from the bill.

In short, Mr. President, if this limitation remains in the bill, then our work in conference will be bound by this item. I think we ought to have a chance to finish our work, and then the Appropriations Committee can make its decision.

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

Mr. ALLOTT. Mr. President, I am very happy to be a coauthor of the amendment. I appreciate the Senator's yielding to me. I will not take much time.

It has been pointed out to me that the original purposes of the Beautification Act—which I did not vote for because I thought the money should be used for more practical aspects of the highway development program—have been perverted by the actual way the act has been administered and the way the appropriations have come to it.

I understand, for example, that what has happened actually is that one firm has practically usurped outdoor advertising in the United States. The small firms are now in the position where they

cannot fight the Federal Government. Neither can they stay in business. The Federal Government has no funds with which to buy out the property rights which they already had invested by reason of their sign business.

I feel that we have to do equity to these people. I think the amendment will go a long way toward this. I am happy to support it.

Mr. COOPER. Mr. President, the Senator from Colorado is correct, and the Public Works Committee has considered this matter in depth. We cannot compensate the smaller billboard companies although they are required to take down the billboards. The Senator from Utah testified before the committee last year concerning the plight of smaller companies last year and has followed this matter closely.

Mr. President, I yield now to the Senator from Delaware.

Mr. BOGGS. Mr. President, I wish to express my support for the statement made by the distinguished Senator from Kentucky (Mr. COOPER) for his amendment to strike the language of section 303 of H.R. 17755, the appropriations bill for the Department of Transportation and related agencies.

Section 303 limits contract obligations this fiscal year for the highway beautification program to $5.5 million. Just 2 months ago, the Senate passed S. 4418, an authorization bill for highway construction and various related programs. S. 4418 recognized that the highway beautification program had been severely limited since enactment by the lack of adequate funds.

In response to the strong recommendation of the administration, the Senate Public Works Committee and the full Senate approved provisions which would provide funding for the highway beautification program out of the highway trust fund. The Senate bill authorizes $31.5 million for fiscal year 1971 with the contract authority that is necessary if this program is to demonstrate its value to the Nation.

In discussing existing programs and the new legislation, Transportation Under Secretary James M. Beggs, wrote Chairman STENNIS of the Transportation Subcommittee saying:

> The urgency which the nation now attaches to the preservation of areas through which highways pass requires that we move immediately ahead in utilizing this authorization, as well as the imminent increased authorization, unimpeded by the $5 million limitation contained in the House bill.

The House of Representatives last week passed a Federal Aid Highway Act with provisions for highway beautification sharply different than those contained in the Senate bill. The initial meeting of the committee on conference occurred this afternoon in the effort to resolve differences between the two bills.

The provisions dealing with highway beautification are among the most significant differences in these two bills. We believe it could be most helpful to the Senate conferees dealing with the highway legislation if this limitation contained in section 303 of H.R. 17755 were stricken from the Senate bill.

The section 303 limitation imposed by the House was not appealed last summer by the Department of Transportation because of the indefinite status of the authorizing legislation. In Secretary Beggs' letter, he wrote that the department had decided to await congressional action, "after which we planned to make our request to the Congress with respect to obligation levels which would be clearly supported by the program authorized."

We recognize that such a limitation would be a subject for consideration by the committee on conference dealing with H.R. 17755. Yet we believe that it is essential that this limitation be removed at this point in order to develop an effective highway beautification program this year.

Mr. COOPER. Mr. President, I yield now to the chairman of the Committee on Public Works, who, if he cares to do so, can be the chief sponsor of the amendment.

Mr. RANDOLPH. Mr. President, Senator JOHN SHERMAN COOPER, the ranking minority member of the Committee on Public Works and I, joined in requesting the Senate Appropriations Committee not to impose the $5.5 million obligation limitation on the highway beautification program.

We are in conference with the House Committee on Public Works on the differing versions of the Federal Aid Highway Act of 1970. One of the issues is the Senate portion favoring authorizations of appropriations for the beautification program from the highway trust fund. Should we prevail, the limitation which the pending bill would impose would thwart our ability to bring the beautification program into active operation.

For too long, the shortage of funds for that program has worked hardship on many businessmen engaged in outdoor advertising and the funds which we seek are needed to enable States to buy signs so that these business people can reestablish their investments in other fields.

I support the amendment to strike the obligational limitation.

I ask unanimous consent at this point to have printed in the RECORD the letter of November 24, 1970, from Senator COOPER and me to the Senator from Georgia (Mr. RUSSELL).

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

NOVEMBER 24, 1970.

Hon. RICHARD B. RUSSELL,
U.S. Senate,
Washington, D.C.

DEAR SENATOR: We wish to express our concern about a provision contained in H.R. 17755, the Department of Transportation and related agencies appropriations act for the fiscal year ending June 30, 1971. The section which concerns us is Section 304 of the bill as it came from the House of Representatives. If retained by the Senate, the provision would limit obligations for the national highway beautification program to $5.5 million.

On October 2, 1970, the Senate passed S. 4418, the biennial authorization bill for highway construction and related programs. Recognizing that the highway beautification program had been severely limited since its original enactment by a lack of adequate funding, and responding to recommendations from the Administration, the Senate Public Works Committee endorsed, and the full Senate approved, provisions which would guarantee funding of the highway beautification program from the Highway Trust Fund sufficient to allow the program to demonstrate its worth. The Senate authorization for the fiscal 1971 is $31.5 million.

The House of Representatives is scheduled, we understand, to consider the Federal-aid Highway Act of 1970 on Wednesday of this week. The House Committee bill contains sections concerning the highway beautification program quite different from those contained in S. 4418. A Conference of the Senate and House of Representatives will be required to resolve differences between the bills, and to determine among other issues, the future direction of the highway beautification program.

Because this issue will be before our Conference with the House, we hope very much that your Committee may remove the House limitation so that we may go to Conference in full support of the Senate provision. We assume this issue will be resolved before any Conference on the Appropriations bill. In any event if the Senate Committee removes Setcion 304 the issue would still be before your Conference.

With kind regards,

Yours sincerely,

JENNINGS RANDOLPH.
JOHN SHERMAN COOPER.

Mr. BIBLE. Mr. President, we did consider the matter. I have discussed it with my distinguished minority counterpart on the committee. I have talked it over with every one that I think I have to talk it over with. The matter did come up in the committee. We agreed that this should be done at the time we marked up the bill and brought it to the floor. The Senator makes an overpowering case.

Mr. President, I am willing to accept the amendment.

Mr. CASE. Mr. President, I join with the Senator from Nevada. I am very happy that the Senator pressed the amendment at this time. It is an appropriate thing to do. I am sure that there is no objection to the amendment.

Mr. MOSS. Mr. President, I commend the Senator from Kentucky for offering the amendment. I am most pleased that the chairman of the subcommittee is willing to accept it.

This is a matter on which I have spent a great deal of time, as the Senator well knows. It is a matter that evolved out of a contract that was worked out in my State by the highway commission and the Governor in conjunction with the Department of Transportation. It is a matter of crucial importance.

This law has been on the books since 1965. The States must either go ahead now or the program will be abandoned. Various States will throw up their hands and abandon the program.

I think that is the reason that time is of the essence. If we push the matter over, the program will begin to collapse and I think it will be progressive. If it collapses in the various States, we will be deprived of the benefits of the program.

Mr. RANDOLPH. Mr. President, I want to supplement what the distinguished Senator has said so well.

Under date of December 3, as chairman of the Public Works Committee, I received a very helpful letter in reference to this subject. I ask unanimous consent that this letter be printed at this point

in the RECORD in conjunction with the remarks being made by the distinguished Senator from Utah.

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

U.S. SENATE,
Washington, D.C., December 3, 1970.

Hon. JENNINGS RANDOLPH,
Chairman, Public Works Committee,
Washington, D.C.

DEAR JENNINGS: As you approach conference meetings on the Federal-Aid Highway Act of 1970, I want to reiterate my interest in the beautification provisions of that Act and express my appreciation for the excellent work which you and your committee have accomplished.

As you are aware, the State of Utah was one of the first to pass a compliance law pursuant to the 1965 Act. Utah has vigorously pursued the question of beautification and has enforced the provisions of its law. Now the state program is approaching a crisis status as are the beautification programs in a number of states with compliance laws. This is because the Highway Beautification Act of 1965 had the effect of preempting the beautification issue away from state control. However, the Federal Government's failure to fund the Act has left our state and other states, which relied upon the law, in a "no-man's land." They cannot administer a program of sign removal nor are they able to effectively enforce the sign restriction provisions of their compliance laws. By enforcing the law, states are virtually destroying their domestic sign industries which have been guaranteed just compensation. A state should not require sign companies to comply with the law which that state cannot implement, any more than the Federal Government should be allowed to require compliance with the law which it refuses to administer.

The Director of the Utah State Department of Highways appeared before both the Senate and House Public Works Committee and stated the necessity for positive action on the part of the Federal Government both in funding and in allowing the concentration of funds on a state-by-state basis in order to control excessive administrative costs. Our State Highway Commission feels that unless positive action is taken by the Federal Government this year they may be forced to amend or repeal our compliance law in order to stop further damage to the highways of our state and to the domestic sign industry within the state.

The bill reported by your committee and passed by the Senate would provide that positive action. Another commission study as called for by the House bill would only further disillusion states which have relied on the Federal Act. The advantage would be to one or two large sign companies.

Very truly yours,

FRANK E. MOSS,
U.S. Senator.

Mr. MOSS. Mr. President, I thank the chairman of the Public Works Committee who did such great work on this matter in the Public Works Committee in carrying it forward into the conference. I want to pay tribute to him for his leadership and understanding of the problem. The chairman has constantly supported highway beautification. This is a further fulfillment of his commitment.

If we are willing to turn our backs and abandon the whole thing and no longer believe in environmental cleanliness along our highways, and this is visual, now is the time we would do it if we do not go forward. I think we must go forward.

I thank the Senator from Kentucky.

Mr. BIBLE. Mr. President, I move the adoption of the amendment.

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

The amendment was agreed to.

The PRESIDING OFFICER. If there be no further amendment to be proposed, the question is on the engrossment of the amendments and third reading of the bill.

The amendments were ordered to be engrossed, the bill to be read a third time.

The bill was read the third time.

Mr. BIBLE. Mr. President, I do not anticipate asking for the yeas and nays. I have assured Senators who asked me that as far as I was personally concerned I did not expect to ask for the yeas and nays. I have checked Senators present in the Chamber and there does not seem to be a request for the yeas and nays.

The PRESIDING OFFICER. The bill having been read the third time, the question is, Shall it pass?

The bill (H.R. 17755) was passed.

Mr. BIBLE. Mr. President, I move that the Senate insist upon its amendments and request a conference with the House of Representatives thereon, and that the Chair be authorized to appoint the conferees on the part of the Senate.

The motion was agreed to; and the Presiding Officer (Mr. SAXBE) appointed Mr. STENNIS, Mr. MAGNUSON, Mr. PASTORE, Mr. BIBLE, Mr. CASE, Mrs. SMITH, and Mr. ALLOTT, conferees on the part of the Senate.

Mr. BIBLE. Mr. President, I ask unanimous consent that the Secretary of the Senate be authorized in the engrossment of the Senate amendments to H.R. 17755 to correct technical or clerical errors.

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

Mr. BIBLE. Now, Mr. President, I am delighted to yield the floor to the distinguished majority leader.

The PRESIDING OFFICER. The Chair recognizes the Senator from Montana.

Mr. MANSFIELD. Mr. President, the distinguished senior Senator from Nevada (Mr. BIBLE), as always, has been outstanding in the performance of his duty. There is no more skillful manager of legislation, and I speak from experience because if I remember correctly this is about the third appropriation bill which he has handled this year and he has handled all of them exceedingly well. I congratulate the Senator.

I wish as well to congratulate the ranking Republican committee member, Mr. CASE, for his significant contribution.

This measure contained many provisions of merit and controversy but none exceeded the issue resolved today dealing with the supersonic transport. For months this issue has been debated, discussed and today finally resolved. As with most issues of great controversy there is no absolute right or wrong. It is a matter of judgment and emphasis. Both sides of the issue sincerely believed their side should prevail. Both honestly believed their position of balance was best for the Nation. It is these issues that are always the most difficult to decide. To the distinguished Senators from Washington (Mr. MAGNUSON and Mr. JACKSON), I wish to extend my sincere thanks, appreciation, and admiration for the manner in which they conducted their case. To the senior Senator from Wisconsin (Mr. PROXMIRE) who led the opposition to this project, it can only be said that he demonstrated again that when he undertakes an assignment, none is better prepared to present a case. To the others who were so forceful and effective on this measure, the Senator from Illinois (Mr. PERCY), the Senator from Arizona (Mr. GOLDWATER), the Senator from Kentucky (Mr. COOK), the Senator from Maine (Mr. MUSKIE), the Senator from Alaska (Mr. GRAVEL), the Senator from West Virginia (Mr. RANDOLPH), and all the others, this leadership wishes to extend its thanks for the high level of this debate and the cooperation we have received.

Mr. BIBLE. I thank the majority leader.

EXTENSION OF CERTAIN NAVAL VESSEL LOANS

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the Senate proceed to the consideration of Calendar No. 1403, H.R. 15728. I do this so that the bill will be the pending business.

The PRESIDING OFFICER. The bill will be stated by title.

The assistant legislative clerk read the bill by title, as follows:

A bill (H.R. 15728) to authorize the extension of certain naval vessel loans now in existence and new loans, and for other purposes.

The PRESIDING OFFICER. Is there objection to the request of the Senator from Montana?

There being no objection, the Senate proceeded to consider the bill, which had been reported from the Committee on Armed Services, with an amendment.

PROGRAM

Mr. BOGGS. Mr. President, I would like to take this opportunity to ask the distinguished majority leader if he could indicate the order of business for the remainder of today and tomorrow.

Mr. MANSFIELD. I am delighted to respond to the distinguished acting minority leader. There will be no debate on the pending business tonight. There will be no further votes tonight.

Tomorrow, it is anticipated, after the Journal has been approved, that unobjected-to items on the calendar will be taken up.

Following the disposal of the pending business the Senate will proceed to the consideration of Calendar No. 1259, H.R. 18306, an act to authorize U.S. participation in increases in the resources of certain international financial institutions to provide for an annual audit of the exchange stabilization fund by the General Accounting Office, and for other purposes.

It is anticipated that at the conclusion of the business tomorrow night the Senate will turn to the consideration of Calendar No. 1402, H.R. 19830, the Department of Housing and Urban Devel-

opment independent offices appropriation bill, which will be the pending order of business on Monday.

Following that we will take up the defense appropriation bill and, in the meantime, conference reports as they become available.

The Senate has done extremely well in this postelection session and it is due to the bipartisan efforts of all Members and the spirit of accommodation and cooperation. I am very proud of the Senate. I had expected progress would be much worse; it has been much better.

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

Mr. MANSFIELD. I yield.

Mr. ALLOTT. I returned to the Chamber just a moment ago and I heard the announcement of the majority leader. I assume that the appropriation bill for independent offices is the pending business. Is that correct?

Mr. MANSFIELD. No. That will be laid before the Senate tomorrow and it will be the pending business after the morning hours is concluded on Monday next.

Mr. ALLOTT. So we will take up the independent offices appropriation bill on Monday, and that will be the pending business until it is concluded, followed by the defense bill?

Mr. MANSFIELD. Yes. Tomorrow we will take up a bill from the Committee on Armed Services, which had been referred to the Committee on Foreign Relations, to-wit, an act to authorize the extension of certain naval vessel loans now in existence and new loans will be taken up, to be followed by Calendar No. 1259, an act to authorize U.S. participation in increases in the resources of certain international financial institutions, to provide for a 9-year-old audit of the Exchange Stabilization Fund by the General Accounting Office, and for other purposes.

Mr. ALLOTT. I thank the Senator. There may be some votes anticipated on the independent officers bill, so Senators will be aware of the possibility of votes on Monday.

Mr. MANSFIELD. On the basis of what both of us have said, the Senate should be on notice.

Mr. STENNIS. Mr. President, will the Senator repeat what he said about the ship loan bill?

Mr. MANSFIELD. This matter was referred to the Committee on Foreign Relations by the Committee on Armed Services. It is now the pending business, and it will be taken up tomorrow. It is not anticipated it will take long.

OIL SLUDGE DUMPING BY THE NAVY

Mr. MUSKIE. Mr. President, I am astonished by the news that the Navy is dumping oil sludge into the Atlantic Ocean off the north coast of Florida.

According to dispatches, the sludge has formed an oil slick 40 miles long and 19 miles wide at a point fewer than 25 miles from the Atlantic beaches.

The slick endangers at least 50 miles of shoreline between south Georgia and St. Augustine. An official of the Florida Marine Patrol calls it the biggest oil spill he has ever seen.

The Navy does not deny it. Its spokesman says the Mayport Naval Station at the mouth of the St. Johns River has been using this procedure for the past 2 years.

He claims the Navy is judicious with its dumping. The barges go out to sea only twice every 3 months, and they do not dump until they are more than 50 miles from land.

Mr. President, I am appalled. The Navy's dumping blatantly violates the Nixon administration's stated policy on ocean dumping. It blatantly violates a Federal law on oil spills enacted just 8 months ago today. It blatantly violates Interior Department regulations published only 2 months ago.

The President's position on the protection of our environment is well known. Only last February, in his environmental message to the Congress, he made it clear:

> The damage done to our environment has not been the work of evil men, nor has it been the inevitable by-product either of advancing technology or of growing population. It results not so much from choices made, as from choices neglected; not from malign intention, but from failure to take into full account the full consequences of our actions.

The Federal law on oil spills, Public Law 91-224 signed on April 3 by the President, is equally clear. It flatly prohibits the discharge of oil in harmful quantities into or upon the navigable waters, the adjoining shorelines, and the contiguous zone.

The Interior Department regulations issued September 11 just as clearly define what harmful quantities are. Any spill that violates applicable water quality standards or causes a film or sheen or discoloration of the water is a harmful quantity.

Only yesterday in New Orleans, three major oil companies were fined more than $500,000 by a Federal court for safety violations at offshore wells, the kind of violations that have resulted in oil spills. But the Navy, dumping oil—not spilling oil—into the Atlantic Ocean goes scot-free.

Where does the Navy get its authority to dump oil sludge into the Atlantic, or any other ocean? The Navy's defense rests upon the most incredible claim of this continuing disaster. The Navy says it is acting under the Oil Pollution Act of 1924.

Mr. President, I read in their entirety two lines from the Water Quality Improvement Act of 1970, signed on April 3, 1970, by President Nixon:

> SEC. 108. The Oil Pollution Act, 1924 (43 Stat. 604), as amended (80 Stat. 1246-1252), is hereby repealed.

The authority on which the Navy acted has not been law since 8 months ago, Mr. President.

Mr. President, the Committee on Public Works will hold an emergency hearing on this oil spill tomorrow morning at 10 o'clock. Senator JENNINGS RANDOLPH, chairman of the Committee on Public Works, and Senator JOHN SHERMAN COOPER, ranking minority member, sent telegrams to the Secretary of Defense, the Acting Secretary of the Interior, and the Chairman of the Council on Environmental Quality.

I ask unanimous consent that copies of the telegrams be included in the RECORD at this point.

There being no objection, the telegrams were ordered to be printed in the RECORD, as follows:

Hon. MELVIN R. LAIRD,
Secretary of Defense,
Washington, D.C.

DEAR MR. SECRETARY: We are informed that the responsible officers of the Navy have justified the recent oil dumping off the coast of Florida on the basis of regulations issued under the Oil Pollution Act of 1924 (43 stat. 604). Not only is this recent action, which now imperils the beaches of North Florida, in violation of the President's announced policy against ocean dumping, but it is in direct violation of PL 91-224, Section 108, which repealed the Oil Pollution Act of 1924. In view of the President's policy, PL 91-224, and the growing concern of the American people for safeguarding our environment, this action of the Navy is incredible. There would appear to be no national security issue involved but only gross disregard of the Water Quality Improvement Act of 1970. The officers responsible for this action must be held accountable under the law. We are formulating plans for an emergency hearing by the Subcommittee on Air and Water Pollution. I respectfully request that you hold the Secretary of the Navy available for such a hearing in the next 48 hours.

JOHN SHERMAN COOPER.
JENNINGS RANDOLPH.

Hon. FRED J. RUSSELL,
Interior Building,
Washington, D.C.

DEAR MR. SECRETARY: We are informed that the responsible officers of the Navy have justified the recent oil dumping off the coast of Florida on the basis of regulations issued under the Oil Pollution Act of 1924 (43 stat. 604). Not only is this recent action, which now imperils the beaches of North Florida, in violation of the President's announced policy against ocean dumping, but it is in direct violation of P.L. 91-224, Section 108, which repealed the Oil Pollution Act of 1924. In view of the President's policy, P.L. 91-224, and the growing concern of the American people for safeguarding our environment, this action of the Navy is incredible. There would appear to be no national security issue involved but only gross disregard of the Water Quality Improvement Act of 1970. We are formulating plans for an emergency hearing by the Subcommittee on Air and Water Pollution, within the next 48 hours. Will you please furnish the Committee on Public Works with information regarding whatever guidelines you may have issued to the Navy under the Environmental Policy Act of 1970 or the Federal Water Pollution Control Act, as amended, regarding such ocean dumping.

JOHN SHERMAN COOPER.
JENNINGS RANDOLPH.

Hon. RUSSELL E. TRAIN,
Council on Environmental Quality,
Washington, D.C.

DEAR MR. CHAIRMAN: We are informed that the responsible officers of the Navy have justified the recent oil dumping off the coast of Florida on the basis of regulations issued under the Oil Pollution Act of 1924 (43 stat. 604). Not only is this recent action, which now imperils the beaches of North Florida, in violation of the President's announced policy against ocean dumping, but it is in direct violation of PL 91-224, Section

108, which repealed the Oil Pollution Act of 1924. In view of the President's policy, PL 91–224, and the growing concern of the American people for safeguarding our environment, this action of the Navy is incredible. There would appear to be no national security issue involved but only gross disregard of the Water Quality Improvement Act of 1970. We are formulating plans for an emergency hearing of the Subcommittee on Air and Water Pollution. Within the next 48 hours. Will you please furnish the Committee on Public Works with information regarding whatever guidelines you may have issued to the Navy under the Environmental Policy Act of 1970 regarding such ocean dumping.

JENNINGS RANDOLPH.
JOHN SHERMAN COOPER.

Mr. MUSKIE. Mr. President, I also ask unanimous consent that copies of the news stories describing this disaster which appeared in this morning's Washington Post and New York Times be included in the RECORD at this point.

There being no objection, the news articles were ordered to be printed in the RECORD, as follows:

[From the Washington Post, Dec. 3, 1970]

NAVY DUMPING FORMS OIL SLICK OFF FLORIDA

JACKSONVILLE, Fla.—A massive oil slick covering 760 square miles was located Wednesday in the Atlantic Ocean 23 miles off north Florida. A spokesman for the state said the U.S. Navy deliberately dumped it.

The heavy black fuel oil posed a threat along 50 miles of sandy beaches from near the Georgia line to St. Augustine the spokesman said.

"This is not a spill; this is a dump," said Randolph Hodges, director of the State Natural Resources Department at Tallahassee.

State Marine Patrol officials estimated the slick was 40 miles long and 19 miles wide.

The Navy at Jacksonville said it had dumped "a quantity of sludge from two barges into the ocean" Monday night.

The official Navy statement said Mayport Naval Station at the mouth of the St. Johns River "has used this procedure for the past two years, as required by the Oil Pollution Act of 1924. It is done about twice a quarter over 50 miles from land."

Lt. John Seay of the Florida Marine Patrol described it as the biggest oil spill he's ever seen—much bigger than one located Tuesday in the Florida Keys near the underwater Pennekamp State Park. Winds and seas broke that one up.

THREE OIL COMPANIES FINED $500,000 IN VIOLATIONS AT OFFSHORE WELLS

NEW ORLEANS, December 2.—Three major oil companies were fined more than $500,000 in Federal court today after pleading no contest to charges that they had not placed safety valves on some offshore oil wells in the Gulf of Mexico.

The three companies—Humble Oil Company, Union Oil Company and Continental Oil Company—each received the maximum fine of $2,000 for each count in the indictments.

A fourth company, Shell Oil Company, which is currently fighting an offshore oil well fire, pleaded not guilty, and United States District Judge Fred J. Cassiery said that he would set a trial date later.

The action came at an arraignment on indictments brought by the Federal Government in November.

Humble was fined $300,000 on 150 separate counts involving 33 offshore wells; Union $24,000 on 12 counts involving eight wells, and Continental $242,000 on 121 counts involving 24 wells.

Shell is charged with 170 separate offenses involving 40 wells.

No pollution was involved in any of the offenses. The companies were indicted after a grand jury investigation that stemmed from the Chevron Oil Company offshore fire and oil spill last February, Chevron paid $1-million in fines.

COMPANIES COMPLYING

The Government has said that all the companies here now complying with the law and that the offenses listed in the indictments were for past actions.

Since the Chevron spill, which went uncontrolled for a month, the Department of the Interior has doubled the Gulf Coast oil inspection force, and a further expansion is planned. The man who ordered the expansion, Walter J. Hickel, was dismissed last week from his post as Interior Secretary by President Nixon.

Mr. Hickel had also suspended further leasing of offshore oil sites until Dec. 15.

The Shell fire, which began yesterday when an oil well blew out on a drilling platform 10 miles from the Louisiana coast, continued to burn today. Shell officials said, that they were considering allowing it to burn until they could drill a relief well, process requiring about three weeks.

Richard Nelson, Shell's offshore division general manager, told a news conference today that the new fire was potentially a greater pollution threat than the Chevron fire. However, he said that the company could meet the threat.

State officials said that initial pollution from the Shell blowout was minor. There are 22 working wells on the Shell drilling platform.

United States Attorney General A. Gallinghouse pointed out that the well involved in the fire was not involved in the indictments for which Shell faces trial.

In the Shell fire, which occurred more than 100 miles from the Chevron fire, two men were killed, one man is missing and several were burned critically.

NEW OIL SLICK THREAT

JACKSONVILLE, FLA., December 2.—The second oil slick threat in two days cropped up along the Florida Coast today—apparently as a result of the dumping of oil by the Navy.

Randolph Hodges, State Natural Resources Director, said that the slick, about 52 miles offshore, was being blown along by winds and could threaten tourist beaches from Fernandia Beach south to Daytona Beach—a stretch of 110 miles.

He said that the slick had been located by one of his agency's planes and was 15 to 19 miles wide.

Yesterday, an oil slick—believed caused by a passing Italian ship—was discovered off the Florida Keys, but the winds and seas broke it up before it could cause any extensive damage to the shoreline.

Mr. Hodges said that the new slick, "beginning at the northern end of Nassau Sound 52 miles offshore, extends 40 miles southward to Palm Valley between Jacksonville Beach and St. Augustine."

At the Palm Valley point, he said, the oil mass is only 23 miles offshore.

He said that an investigation had found that two barges left the Mayport Naval Base at noon on Nov. 30, ran a course of 87 degrees 50 miles offshore and returned to Mayport Dec. 1 at 10 in the morning.

"The Navy tells us that regulations require them to dump 50 miles out, but our problem is that it's coming back toward shore," Mr. Hodges said. "With the President's stand against dumping in the ocean, it's peculiar that his military would be dumping any distance off there."

MESSAGE FROM THE HOUSE

A message from the House of Representatives, by Mr. Hackney, one of its reading clerks, announced that the House had insisted upon its amendments to the bill (S. 3418) to amend the Public Health Service Act to provide for the making of grants to medical schools and hospitals to assist them in establishing special departments and programs in the field of family practice, and otherwise to encourage and promote the training of medical and paramedical personnel in the field of family medicine, and to alleviate the effects of malnutrition, and to provide for the establishment of a National Information and Resource Center for the Handicapped; disagreed to by the Senate, and agreed to the conference asked by the Senate on the disagreeing votes of the two Houses thereon, and that Mr. STAGGERS, Mr. JARMAN, Mr. ROGERS of Florida, Mr. CARTER, and Mr. HASTINGS were appointed managers on the part of the House at the conference.

The message announced that the House had agreed to the amendment of the Senate to the bill (H.R. 18679) to amend the Atomic Energy Act of 1954, as amended, to eliminate the requirement for a finding of practical value, and for other purposes.

APPOINTMENTS BY THE VICE PRESIDENT

The PRESIDING OFFICER (Mr. SAXBE). The Chair, on behalf of the Vice President, in accordance with Public Law 91–513, appoints the Senator from Iowa (Mr. HUGHES) and the Senator from New York (Mr. JAVITS) to the Commission on Marihuana and Drug Abuse.

ADJOURNMENT UNTIL 10 A.M. TOMORROW

Mr. KENNEDY. Mr. President, if there be no further business to come before the Senate, I move that the Senate stand in adjournment in accordance with the order of Monday last.

The motion was agreed to; and at 4 o'clock and 32 minutes p.m. the Senate adjourned until tomorrow, Friday, December 4, 1970, at 10 a.m.

NOMINATIONS

Executive nominations received by the Senate December 3, 1970:

IN THE AIR FORCE

The following-named officers for promotion in the Regular Air Force, under the appropriate provisions of chapter 835, title 10, United States Code, as amended. All officers are subject to physical examination required by law.

To be first lieutenant

Abold, Phillip L. [redacted]
Abramek, Edward T., [redacted]
Abramson, Richard S. [redacted]
Adam, George F., Jr., [redacted]
Adams, Walter W. [redacted]
Ahern, Daniel B., [redacted]
Albertini, Victor D. [redacted]
Albright, William A. [redacted]
Alessandro, Charles, [redacted]

Alexander, David R., xxx-xx-xxxx
Alexander, Dean C., xxx-xx-xxxx
Alexander, James E., xxx-xx-xxxx
Allard, David C., xxx-xx-xxxx
Allen, David K., xxx-xx-xxxx
Allhoff, Francis H., xxx-xx-xxxx
Altemose, James L., xxx-xx-xxxx
Altus, Robert W., xxx-xx-xxxx
Ames, Richard L., xxx-xx-xxxx
Anderson, Kimmel R., xxx-xx-xxxx
Armstrong, Michael, xxx-xx-xxxx
Ashford, Gary L., Jr., xxx-xx-xxxx
Ashton, Gerald L., xxx-xx-xxxx
Atwood, Charles R., xxx-xx-xxxx
Aubrey, James R., xxx-xx-xxxx
Ayres, Timothy R., xxx-xx-xxxx
Back, James W., xxx-xx-xxxx
Baer, Craig A., xxx-xx-xxxx
Bailey, Brooke P., xxx-xx-xxxx
Bailey, Steven D., xxx-xx-xxxx
Baird, Wayne J., xxx-xx-xxxx
Baker, Norman R., xxx-xx-xxxx
Bala, Walter A., xxx-xx-xxxx
Balazs, Brent W., xxx-xx-xxxx
Bancroft, William W., Jr., xxx-xx-xxxx
Barclay, Lawson E., xxx-xx-xxxx
Barco, Leroy G., xxx-xx-xxxx
Baribeau, Michael D., xxx-xx-xxxx
Barker, Daniel J., xxx-xx-xxxx
Barnard, Douglas M., xxx-xx-xxxx
Barnes, Joseph W., xxx-xx-xxxx
Barnes, Larry R., xxx-xx-xxxx
Bartness, Patrick M., xxx-xx-xxxx
Bassett, Frederick E., xxx-xx-xxxx
Bassett, Kenneth W., xxx-xx-xxxx
Batchelor, John D., xxx-xx-xxxx
Bauer, Bertrand J., xxx-xx-xxxx
Bayer, John P., Jr., xxx-xx-xxxx
Bazar, William A., xxx-xx-xxxx
Beanblossom, Bobby V., xxx-xx-xxxx
Beauregard, Alfred J., xxx-xx-xxxx
Beckett, Mason H., Jr., xxx-xx-xxxx
Bedford, Lyman D., xxx-xx-xxxx
Bednarz, Michael H., xxx-xx-xxxx
Beekman, William D., xxx-xx-xxxx
Begert, William J., xxx-xx-xxxx
Behr, Robert D., xxx-xx-xxxx
Bell, Warren J., xxx-xx-xxxx
Belwood, Lloyd E., xxx-xx-xxxx
Bender, Steven R., xxx-xx-xxxx
Bennett, John W., xxx-xx-xxxx
Berry, Alan L., xxx-xx-xxxx
Berry, Richard L., xxx-xx-xxxx
Bethart, Edgar J., Jr., xxx-xx-xxxx
Bettcher, James R., xxx-xx-xxxx
Bettencourt, Manual J., Jr., xxx-xx-xxxx
Bierer, Lindsey E., 111, xxx-xx-xxxx
Birk, Frank T., xxx-xx-xxxx
Bjurk, James R., xxx-xx-xxxx
Blackman, Robert M., Jr., xxx-xx-xxxx
Blanchard, Warren C., xxx-xx-xxxx
Blank, Richard A., xxx-xx-xxxx
Bluhm, Steven A., xxx-xx-xxxx
Blumberg, Alvin E., Jr., xxx-xx-xxxx
Bogart, David B., xxx-xx-xxxx
Bohner, Scott N., xxx-xx-xxxx
Bole, Samuel J., xxx-xx-xxxx
Bonfiglio, Victor J., xxx-xx-xxxx
Bonner, Barry D., xxx-xx-xxxx
Booker, Richard L., xxx-xx-xxxx
Booth, Robert T., xxx-xx-xxxx
Boots, Robert J., xxx-xx-xxxx
Borah, Steve B., xxx-xx-xxxx
Bourke, Thomas J., xxx-xx-xxxx
Bowen, Jack E., xxx-xx-xxxx
Bowers, Ralph K., xxx-xx-xxxx
Bowles, Ralph D., xxx-xx-xxxx
Bowman, Norman H., Jr., xxx-xx-xxxx
Bowman, William R., xxx-xx-xxxx
Boyd, Kenneth R., II, xxx-xx-xxxx
Braasch, Gary B., xxx-xx-xxxx
Bradburn, Terry L., xxx-xx-xxxx
Brandt, Arthur J., III, xxx-xx-xxxx
Brandt, Stephen D., xxx-xx-xxxx
Brawders, Ronald J., xxx-xx-xxxx
Brenneman, Glenn B., xxx-xx-xxxx
Breuder, Andrew J., xxx-xx-xxxx
Bridal, Donald D., xxx-xx-xxxx
Brinkerhoff, Jerry L., xxx-xx-xxxx
Bristow, Richard D., xxx-xx-xxxx
Brockett, William F., xxx-xx-xxxx
Brogan, Dennis M., xxx-xx-xxxx
Broussard, Raymond D., xxx-xx-xxxx
Brown, Frank B., Iv, xxx-xx-xxxx
Brown, Gerald W., Jr., xxx-xx-xxxx
Brown, Rayford K., xxx-xx-xxxx
Brown, Robert M., Jr., xxx-xx-xxxx
Brown, William F., Jr., xxx-xx-xxxx
Broyhill, Ted K., xxx-xx-xxxx
Brumm, David N., xxx-xx-xxxx
Bucchioni, Daniel T., Jr., xxx-xx-xxxx
Budzinski, Willard C., Jr., xxx-xx-xxxx
Buford, William L., Jr., xxx-xx-xxxx
Buono, Bruce J., xxx-xx-xxxx
Buraglio, Rockne J., xxx-xx-xxxx
Burgamy, Michael B., xxx-xx-xxxx
Burgess, Stanley H., II, xxx-xx-xxxx
Burke, Charles C., xxx-xx-xxxx
Burkey, Bruce A., xxx-xx-xxxx
Burkhart, Kenneth M., xxx-xx-xxxx
Burkhead, Charles E., xxx-xx-xxxx
Burleson, Lynn T., xxx-xx-xxxx
Burnett, Byron C., xxx-xx-xxxx
Burnham, Russell C., xxx-xx-xxxx
Burns, Robert A., xxx-xx-xxxx
Busch, Dennis H., xxx-xx-xxxx
Busselle, James R., xxx-xx-xxxx
Butler, Michael R., xxx-xx-xxxx
Byrum, Edward S., xxx-xx-xxxx
Cahman, John A., xxx-xx-xxxx
Callison, Jerry L., xxx-xx-xxxx
Camp, James R., xxx-xx-xxxx
Campbell, Harry G., xxx-xx-xxxx
Campbell, John R., II, xxx-xx-xxxx
Carr, James F., xxx-xx-xxxx
Carroll, Gerard P., xxx-xx-xxxx
Carson, John P., III, xxx-xx-xxxx
Cartwright, Michael R., xxx-xx-xxxx
Caudill, Elmon, C., II, xxx-xx-xxxx
Caughlin, Donald J, Jr., xxx-xx-xxxx
Chapman, John C., Jr., xxx-xx-xxxx
Chapman, Michael G., xxx-xx-xxxx
Chatmon, Albert I., xxx-xx-xxxx
Chrismer, Denny L., xxx-xx-xxxx
Clarey, Robert F., xxx-xx-xxxx
Clark, James R., Jr., xxx-xx-xxxx
Clark, Leroy W., xxx-xx-xxxx
Clawson, Duane W., xxx-xx-xxxx
Clements, Donald P., xxx-xx-xxxx
Cobb, John S., xxx-xx-xxxx
Cobb, William P., xxx-xx-xxxx
Cochran, James E., xxx-xx-xxxx
Coe, Richard E., xxx-xx-xxxx
Cole, Ray M., Jr., xxx-xx-xxxx
Coleman, Kenneth R., xxx-xx-xxxx
Collazodavila, Vicente, xxx-xx-xxxx
Collins, Brent R., xxx-xx-xxxx
Colt, Richard J., xxx-xx-xxxx
Condit, Dale O., xxx-xx-xxxx
Coneybeer, Thomas R., xxx-xx-xxxx
Connelly, Thomas T., xxx-xx-xxxx
Connors, Terrance L., xxx-xx-xxxx
Contreras, Ben, xxx-xx-xxxx
Cook, James L., xxx-xx-xxxx
Coolidge, Charles H., Jr., xxx-xx-xxxx
Copeland, Larry J., xxx-xx-xxxx
Corley, Charles J., xxx-xx-xxxx
Courter, Jimmie R., xxx-xx-xxxx
Cousins, Paul A., xxx-xx-xxxx
Couture, James E., xxx-xx-xxxx
Covey, Richard O., xxx-xx-xxxx
Craig, William A., xxx-xx-xxxx
Crimmel, William W., xxx-xx-xxxx
Criscuolo, John A., xxx-xx-xxxx
Crombar, Barry R., xxx-xx-xxxx
Crowe, Robert N., xxx-xx-xxxx
Cryer, James M., xxx-xx-xxxx
Cullen, Frederic M., xxx-xx-xxxx
Cupello, James M., xxx-xx-xxxx
Curran, William Michael, xxx-xx-xxxx
Current, William E., xxx-xx-xxxx
Curtiss, Walter D., xxx-xx-xxxx
Cushion, Kenneth E., Jr., xxx-xx-xxxx
Custer, Gregory E., xxx-xx-xxxx
Daley, Robert A., xxx-xx-xxxx
Damiani, Aris E., xxx-xx-xxxx
Dauth, Michael A., xxx-xx-xxxx
Davenport, George R., xxx-xx-xxxx
Davidson, Thomas E., xxx-xx-xxxx
Davis, Charles R., xxx-xx-xxxx
Davis, Louis S., xxx-xx-xxxx
Davitt, William F. III, xxx-xx-xxxx
Dean, Roger A., xxx-xx-xxxx
DeBellevue, Charles B., xxx-xx-xxxx
Defazio, James E., xxx-xx-xxxx
Degovanni, George, xxx-xx-xxxx
Dellwardt, David J., xxx-xx-xxxx
Deloach, Johnny G., xxx-xx-xxxx
Denny, John R., xxx-xx-xxxx
Devereaux, Thomas P., xxx-xx-xxxx
Dienes, Nicholas S., xxx-xx-xxxx
Dikkers, Gary L., xxx-xx-xxxx
Dillman, Alan D., xxx-xx-xxxx
Dmytryk, Edward C., xxx-xx-xxxx
Dommeyer, Carl D., xxx-xx-xxxx
Donohue, Stephen Paul, xxx-xx-xxxx
Dorger, John M., xxx-xx-xxxx
Dougherty, Thomas R., xxx-xx-xxxx
Dowsing, Philip Q., xxx-xx-xxxx
Draper, Stuart D., xxx-xx-xxxx
Draper, Thomas A., xxx-xx-xxxx
Dreier, Thomas A., xxx-xx-xxxx
Drenkowski, Dana K., xxx-xx-xxxx
Drennan, Jerry D., xxx-xx-xxxx
Drennan, William M., Jr., xxx-xx-xxxx
Dudley, Garry W., xxx-xx-xxxx
Duffy, John E., xxx-xx-xxxx
Dugan, Edward J., III, xxx-xx-xxxx
Duncan, Charles V., III, xxx-xx-xxxx
Duncan, Donald W., xxx-xx-xxxx
Duncan, Ian J., xxx-xx-xxxx
Dunham, John L., xxx-xx-xxxx
Dunkerley, Alan G., xxx-xx-xxxx
Durham, George R., Jr., xxx-xx-xxxx
Durocher, Curt L., xxx-xx-xxxx
Dyer, Allen R., xxx-xx-xxxx
Eagles, Donald E., xxx-xx-xxxx
Eaves, Thomas J., Jr., xxx-xx-xxxx
Eberhart, Ralph E., xxx-xx-xxxx
Eckert, William D., xxx-xx-xxxx
Ecung, Maurice, xxx-xx-xxxx
Eden, Anthony, xxx-xx-xxxx
Edlund, Maurice E., II, xxx-xx-xxxx
Edwards, Roger L., xxx-xx-xxxx
Edwards, Walter V., III, xxx-xx-xxxx
Eggert, Martin F., xxx-xx-xxxx
Eikleberry, Daniel J., xxx-xx-xxxx
Eisenman, William J., xxx-xx-xxxx
Elliott, George E., xxx-xx-xxxx
Ellis, John D., xxx-xx-xxxx
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Thurston, William H. III xxx-xx-xxxx
Tichenor, Charles K., xxx-xx-xxxx
Toof, Jonathan A., xxx-xx-xxxx
Torreano, Mark A., xxx-xx-xxxx
Towt, Howard C., xxx-xx-xxxx
Traylor, Samuel C., xxx-xx-xxxx
Turchick, William A., xxx-xx-xxxx
Turner, Philip R. xxx-xx-xxxx
Turner, Ronald L., xxx-xx-xxxx
Uhls, Willis G., xxx-xx-xxxx
Umemoto, Ernest M., xxx-xx-xxxx
Vail, Thomas M., xxx-xx-xxxx
Vanamerongen, William G., xxx-xx-xxxx
Vandekamp, John W. xxx-xx-xxxx
Varhall, Gregory, xxx-xx-xxxx

Vasek, Gary R., xxx-xx-xxxx
Vaught, Johnnie L., xxx-xx-xxxx
Vazquez, Alfonso III, xxx-xx-xxxx
Venturi, Richard R., xxx-xx-xxxx
Veteto, Benny M., xxx-xx-xxxx
Vice, John M., xxx-xx-xxxx
Vihel, Richard S., xxx-xx-xxxx
Wagner, Gordon F., Jr., xxx-xx-xxxx
Wagner, Michael J., xxx-xx-xxxx
Wagner, Thomas A., xxx-xx-xxxx
Waldron, Philip K., xxx-xx-xxxx
Wales, Edwin A., xxx-xx-xxxx
Walker, Russell C., xxx-xx-xxxx
Wallace, Martin M., xxx-xx-xxxx
Walsh, William J., xxx-xx-xxxx
Washburn, Thomas E., xxx-xx-xxxx
Watkins, John J., Jr., xxx-xx-xxxx
Watson, Frederick E., xxx-xx-xxxx
Watson, Tony J., xxx-xx-xxxx
Wauer, George G., xxx-xx-xxxx
Webb, Jack B., xxx-xx-xxxx
Weideman, Robert F., xxx-xx-xxxx
Weis, John T., xxx-xx-xxxx
Weishaar, Henry A., xxx-xx-xxxx
Welsh, John R., Jr., xxx-xx-xxxx
Wentzel, Eric P., xxx-xx-xxxx
West, James D., xxx-xx-xxxx
West, Virgil A., Jr., xxx-xx-xxxx
Westbrook, James G., Jr., xxx-xx-xxxx
Wevodau, Frederick H., Jr., xxx-xx-xxxx
Whaylen, Thomas A., xxx-xx-xxxx
Wheeler, Wayne K., Jr., xxx-xx-xxxx
Whittenberg, Karl F., xxx-xx-xxxx
Wierzbanowski, Theodore J., xxx-xx-xxxx
Wiggins, James P., xxx-xx-xxxx
Wiles, Roger L., xxx-xx-xxxx
Wilhelm, Kenneth L., xxx-xx-xxxx
Williams, Earl W., xxx-xx-xxxx
Williams, Richard K., xxx-xx-xxxx
Williams, Robert T., xxx-xx-xxxx
Williams, Stanley A., xxx-xx-xxxx
Williams, William R., xxx-xx-xxxx
Williford, Richard L., xxx-xx-xxxx
Willis, Robert H., xxx-xx-xxxx
Wilson, Jack L., xxx-xx-xxxx
Wilson, James R., xxx-xx-xxxx
Wilson, Robert J., Jr., xxx-xx-xxxx
Wilson, Wayne D., xxx-xx-xxxx
Windham, Donald R., xxx-xx-xxxx
Wise, Mark C., xxx-xx-xxxx
Wood, Charles A., xxx-xx-xxxx
Wood, William B., xxx-xx-xxxx
Woodsmall, Richard A., xxx-xx-xxxx
Worrell, Rowland H. III, xxx-xx-xxxx
Worster, Arthur J., xxx-xx-xxxx
Wyngaard, Gerald F., xxx-xx-xxxx
Yamamoto, Walter M., xxx-xx-xxxx
Yeomans, Leigh S., xxx-xx-xxxx
Yoos, Charles J. II, xxx-xx-xxxx
Yorko, John C., xxx-xx-xxxx
Yox, Lawrence W., Jr., xxx-xx-xxxx
Zagzebski, Kenneth P., xxx-xx-xxxx
Zauber, Glenn R., xxx-xx-xxxx
Ziegler, Randall K., xxx-xx-xxxx
Zielsdurff, George F., xxx-xx-xxxx
Zimmerman, Carl T., xxx-xx-xxxx
Zubrod, Terry R., xxx-xx-xxxx
Zakaitis, Karl E., xxx-xx-xxxx
Zyroll, Thomas O., xxx-xx-xxxx

NURSE CORPS

Jacobs, Gary L., xxx-xx-xxxx

MEDICAL SERVICE CORPS

Barrs, David M., xxx-xx-xxxx
Brant, William E., xxx-xx-xxxx
Dalton, James D., xxx-xx-xxxx
Danney, Mark M., xxx-xx-xxxx
Downing, Dennis R., xxx-xx-xxxx
Driggers, David A., xxx-xx-xxxx
Erwin, James L., xxx-xx-xxxx
Fossum, Basil D., xxx-xx-xxxx
Gage, Thomas P., xxx-xx-xxxx
George, Charles L., Jr., xxx-xx-xxxx
Grant, Lee B., Jr., xxx-xx-xxxx
Griffin, Arland G., xxx-xx-xxxx
Huggins, William C., xxx-xx-xxxx
Hurt, Eric L., xxx-xx-xxxx
Mackie, Kenneth J., Jr., xxx-xx-xxxx
Montero, Lloyd A., xxx-xx-xxxx
Moss, Robert J., Jr., xxx-xx-xxxx
Powell, George R., xxx-xx-xxxx
Powers, William J., xxx-xx-xxxx
Rasor, Ronald O., xxx-xx-xxxx
Sample, Kenneth F., xxx-xx-xxxx
Sands, Arthur C., xxx-xx-xxxx
Schmidt, Philip M., xxx-xx-xxxx
Smith, Karl H. S., xxx-xx-xxxx
Stephenson, John R., xxx-xx-xxxx
Vocks, Joseph T., xxx-xx-xxxx

BIOMEDICAL SCIENCES CORPS

Anderson, Herman B., Jr., xxx-xx-xxxx
Aycock, Arthur C., xxx-xx-xxxx
Baughman, Mary A., xxx-xx-xxxx
Benline, Terry A., xxx-xx-xxxx
Biegert, Eugene A., xxx-xx-xxxx
Gallagher, Frank P., III, xxx-xx-xxxx
Grand, Ronald S., xxx-xx-xxxx
Hablitzel, Thomas L., xxx-xx-xxxx
Harris, Ronald J., xxx-xx-xxxx
Koistinen, Darrel W., xxx-xx-xxxx
McCracken, James E., Jr., xxx-xx-xxxx
McIntyre, Thomas H., xxx-xx-xxxx
Naugle, Dennis F., xxx-xx-xxxx
Rosato, Louis W., Jr., xxx-xx-xxxx

The following Air Force officers for appointment in the Regular Air Force, in the grades indicated, under the provisions of section 8284, title 10, United States Code, with a view to designation under the provisions of section 8067, title 10, United States Code, to perform the duties indicated, and with dates of rank to be determined by the Secretary of the Air Force:

To be colonel

MEDICAL

Malone, Richard S., xxx-xx-xxxx

To be lieutenant colonel

DENTAL

Taylor, Jeremiah A., Sr., xxx-xx-xxxx

To be captain

MEDICAL

Wexler, Arnold H., xxx-xx-xxxx

Levaughn Jenkins, xxx-xx-xxxx for appointment in the Regular Air Force, in the grade of major, under the provisions of section 8284, title 10, United States Code, with date of rank to be determined by the Secretary of the Air Force.

The following-named officer for promotion in the Regular Air Force, under the appropriate provisions of chapter 835, title 10, United States Code, as amended. Officer is subject to physical examination required by law.

To be captain

Williams, John W. O., xxx-xx-xxxx

IN THE NAVY

The following-named officers of the U.S. Navy for temporary promotion to the grade of captain in the staff corps, as indicated, subject to qualification therefor as provided by law:

MEDICAL CORPS

Ahtye, Perry
Aiken, Robert James
Alexander, Charles Edward
Andersen, Martin Gregor
Atkins, Claude Cage
Austin, Frederick Lowell J.
Baer, Henry Allen
Baggett, Arthur Edward, Jr.
Baker, John Henry
Baker, Richard Arthur
Baker, William Prentice
Balas, George Ivan
Barcay, Stephen Joseph, Jr.
Barchet, Stephen
Barsoum, Adib Hanna
Best, William Callahan
Billingsley, Frank Sidney
Bingham, Elmer Lawrence
Blackburn, Laurence Henry
Bornmann, Robert Clare
Borowsky, Melvin
Boyden, Douglas Gregg
Braswell, Harold Morris, Jr.
Brisbin, Robert Lee
Bristow, William Melton
Brothers, Wiliam S.
Brown, Robert Allen
Burke, Erwin Lewis
Burningham, Richard Alvin
Carver, Michael Chilton
Clarke, Eugene Joseph, Jr.
Colburn, James Edward
Cooke, James Kenneth, Jr.
Cooper, Paul Day, Jr.
Crews, Quintous Earl, Jr.
Cross, Gregory Hachikian
Daane, Thomas Arthur
Damato, Nicholas Anthony
Dean, Philip John
Dearrigoitiarodriguez, Enr
Defries, Hugh Otto
Dempsey, William Charles
Dewaal, Jan Gerrit
Deyton, John Wesley, Jr.
Edson, Mitchell
Emich, Charles Henry
Escajeda, Richard Martin
Fairfax, George Taylor
Fouty, William Joseph
Giard, Henry Louis
Glick, Herbert Edison
Hamlin, Charles Richard
Harrison, Lucius Ashton, Jr.
Hart, George Babe
Hauzenblass, John Wencesla
Highly, Francis Merrel, Jr.
Hoom, Victor Martin
Houston, Harry Rollins
Hughes, James Lewis
Jones, Warren Jeffrey, Jr.
Kaufmann, Edwin Donald
Kawaguchi, Toshiyuki Paul
Kibbey, Ianthus Irvin
Kinneman, Robert Eugene, Jr.
Knab, Douglas Russell
Labudovich, Marco
Lambdin, Charles Samuel
Lee, Dixon Arthur
Lowery, Clinton Hershey
Lukash, William Matthew
McGrew, Clinton Jackson, Jr.
McHale, James Jerome, Jr.
Miller, Alan Gilmore
Miller, Thomas Franklin, Jr.
Millerick, Joseph David
Mills, Mitchell
Morgan, Jacob Richard
Mozley, Paul David
Mucha, Stephen John
Mullin, Robert Lester
Narva, William Milton
Neugebauer, Marion Kenith
Nickerson, Charles William
Nieves, Miguel, Jr.
Plaut, Martin Renatus
Pratt, Hugh Spencer, Jr.
Raasch, Frank Otto, Jr.
Rehme, Arthur Leroy
Reid, Donald
Robinson, Donald Walter
Royal, Orren Leroyce
Rudinger, Edwin Anton
Ryskamp, James Jay, Jr.
Schanberger, John Edward
Schmetz, Frank Joseph, Jr.
Schorn, Victor Gerard
Seaton, Lewis Hiram
Sell, Kenneth Walter
Senn, Francis Edmund, Jr.
Stahl, Charles Jay III
Stotka, Victor Leonard
Strange, Robert Edward
Teneyck, David Roderick
Theros, Elias Paul George
Trone, James Norcross
Trumble, Theodore Joseph
Upton, Richard Thomas
Varon, Myron Izak
Walker, Robert Earl
Walter, Eugene Paul
Wenger, Norman Edward
Wilhelm, Harry Wesley
Wolfe, Franklin Morris
Woodstein, Ira Jelin

DENTAL CORPS

Ainley, James Edward, Jr.
Anderson, John T.
Bowers, Gerald Miles

Enoch, James Duncan
Falcone, Philip Russell
Flagg, Roger Holmes
Gorman, Walter James
Grandich, Russell Anthony
Hardin, Jefferson Frederic
Hiatt, William Robert
Hodson, Harold Wade
Holmes, John Bernard
Hyde, Jack Elgin
Johnson, Dean Leroy
Kelley, John Philip
Klecinic, Edward Paul
Lawrence, Joseph J., Jr.
Luther, Norman Kennedy
McKinnon, John Alexander, Jr.
Orrahood, Robert Howard
Pebley, Harry Calvin
Pinkley, Virgil Alvin
Pistocco, Louis Robert
Prange, William Herbert
Reid, Albert Francis
Ruliffson, Franklin Russell
Schultz, Chester J., Jr.
Shirley, Robert Edwards
Slagle, Lowell Elwood
Slater, Robert William
Stanley, James Howard
Sydow, Paul John
Taylor, B. Frank
Tenca, Joseph Ignatius
Terry, Bill Carlton
Whatley, Thomas Luther
Wilson, James McClelland
Wooden, Robert Aubrey
Woodland, Everan Cornelius

MEDICAL SERVICE CORPS

Akers, Thomas Gilbert
Barkley, Lucien Edward
Boggs, Clifford Walter
Boudreaux, Joseph Clent, Jr.
Courtney, John Charles
Howard, Wallace R.
Jones, William Henry
Kaufman, Louis Richard
Keating, Katherine
Laedtke, Ralph Harold
McKearly, Georgia Mae
Miller, Edwin Bartley
Pruitt, John Dallas
Rudolph, Henry Steven
Tedford, Charles F.
Tober, Theodore Wendel

JUDGE ADVOCATE GENERAL'S CORPS

Cedarburg, Owen Lee
Davis, William Johnson
Dunbar, John Peter
Hantzes, Savas
Hawk, James Thomas
Jimmerson, Thomas Jefferson, Jr.
Palau, Henry Stuart
Root, John Bernard, Jr.

NURSE CORPS

Butler, Anna Teresa
Byrnes, Anna Marie
Conder, Maxine
David, Alice Louise
Cardill, Norma Helen
Parent, Shirley Marie
Weeter, Bessie Racheal

SUPPLY CORPS

Armstrong, George Kornegay
Ball, Thomas Fauntleroy, Jr.
Barber, Ray Cleveland
Bray, Joseph Alfred
Brown, Robert Michael
Burbank, Donald Dean
Davis, James Bly
Dickson, Holton, Carroll, Jr.
Donley, Harold Clement, Jr.
Foster, Paul Lowe
Gordon, Donald Bedell
Gove, Jack Edwin
Greenberg, Edwin Gilbert
Henderson, John Merrill
Hutchinson, Arthur Edward
James, Billy Mink
Maynard, Frank Taylor
McEnearney, John Edward
Mitchell, Billy Ross
Mitchell, William Frederick
Porter, Orland Ainsworth, Jr.
Ringhausen, Robert Leo
Rixey, Charles Woodford
Ryan, William Jardine
Smith, Herbert Richard
Stratton, Dene Brian
Wasson, John Arthur
Weisskopf, William Malvin
White, George Handford
Wirsing, John Arnold

CHAPLAIN CORPS

Condit, John Carroll
Conte, James William
Dodson, Leonard William, Jr.
Frimenko, Michael
Fuller, William Calvin
Geary, Joseph Francis
Hardage, Owen Allen, Jr.
Heath, Robert Hubbell
Hitchens, Walter Chaloner
Huffman, William Wyland
Ingebretson, Ervin Duane
Keen, Homer Eugene, Jr.
Lemaster, Donald Calvin
Samuel, William Roy
Simmons, David Eugene
Sire, Elwin Norton
Sweeney, Patrick Francis, Jr.
Veltman, Dean Kay.
Wootten, Thomas Joseph

CIVIL ENGINEER CORPS

Courtright, Carl
Olson, Paul David
Trueblood, Donald Richard
Zobel, William Marshall
Degroost, Ward Walton, III
Stevens, Warren Gene
Wingast, Stanley

Joseph A. DeColli, Medical Corps, U.S. Navy, for temporary promotion to the grade of lieutenant commander in the Medical Corps, subject to qualification therefor as provided by law.

Helen A. Oregan, Nurse Corps, U.S. Navy, for temporary promotion to the grade of lieutenant commander in the Nurse Corps, subject to qualification therefor as provided by law.

Varro D. Anderson, U.S. Navy, for temporary promotion to the grade of lieutenant commander in the line, subject to qualification therefor as provided by law.

Donald Kear, U.S. Navy, for permanent promotion to chief warrant officer, W–4, subject to qualification therefor as provided by law.

The following named officers of the U.S. Navy, for temporary promotion to the grade of lieutenant in the line and staff corps, as indicated, subject to qualification therefor as provided by law:

Ayres, Steven E.	Martin, Robert S.
Bankert, Harlan R., Jr.	Mitschang, George W.
Baratta, Anthony J.	Mowry, James W.
Bradt, Douglas J.	Pearson, Larry G.
Ceglio, Natale M., Jr.	Purdy, Donald W.
Giles, Wayne H.	Radican, William W.
Geisler, Peter J.	Smethers, James R.
Hollender, Edmund V.	Steinert, Leif M.
Hough, Marvin F.	Stephens, Joseph F.
Kimmerer, William J.	Tracz, Stanley J., Jr.
Langland, Rodger A.	Trumbower, Glenn C.
Litzler, Lee G.	Wheat, Luther W.

SUPPLY CORPS.

Anderson, Scott K., Jr.	Grigson, Delbert Q.
Kurz, Robert R.	Mathews, Mayes D.
Menard, Ronald	Pollock, William J.
Svihla, Richard C.	

CIVIL ENGINEER CORPS.

Burke, William F., III

NURSE CORPS.

Burns, Rebecca K.

MEDICAL SERVICE CORPS.

Flondarina, Melchor N.

Curtis E. Pew, U.S. Navy, for transfer to and appointment in the Supply Corps of the U.S. Navy in the permanent grade of ensign.

The following named officers for transfer to and appointment in the Civil Engineer Corps of the U.S. Navy in the permanent grade of lieutenant (junior grade) and the temporary grade of lieutenant:

Conniff, David D.	Koski, William A.
Groncznack, Robert P.	Poole, Richard D.
Holm, Stanley R., Jr.	

The following named officers for transfer to and appointment in the Judge Advocate General's Corps of the U.S. Navy in the permanent grade of lieutenant (junior grade) and the temporary grade of lieutenant:

Armstrong, Arthur J.	Manning, Edward F.
Cohen, William D.	Oglesby, Douglas A.
Fulkes, Duane S.	Schachte, William L.

The following named women officers for permanent promotion to the grade of lieutenant in the line, subject to qualification therefor as provided by law:

Bogard, Barbara J.	Halenza, Susan C.

The following named women officers for permanent promotion to the grade of commander in the line, subject to qualification therefor as provided by law:

Baker, Elizabeth S.	Lewis, Nancy A.
Barrett, Elizabeth M.	McAllister, Carol
Denby, Sara P.	Reece, Joan C. M.
Dilorenzo, Julia J.	Shultz, Phyllis L.
Dunham, Dixie L.	Thomas, Joan H.
Horn, Emile L.	Watkins, Joann E.
Kuhn, Lucille R.	Zierdt, Lucy E.

The following named officers for permanent promotion to the grade of lieutenant (junior grade) in the line and staff corps, as indicated, subject to qualification therefor as provided by law:

Ayres, Stephen E.	Kimmerer, William J.
Baratta, Anthony J.	Krasik, Steven L.
Beyer, Carl W.	Mitschang, George W.
Bogard, Barbara J.	Trumbower, Glenn C.
Currivan, John D.	

SUPPLY CORPS

Biel, Jeffrey D.	Mathews, Mayes D.
Casanova, Kenneth E.	Menard, Ronald
Grigson, Delbert Q.	Perry, William K., Jr.
Johnson, Jesse B.	Svihla, Richard C.
Lauren, Daniel H.	

MEDICAL SERVICE CORPS

Duny, Marshall S.

NURSE CORPS

Burns, Rebecca G.

The following named Naval Reserve Officers Training Corps Candidates to be permanent ensigns in the line or staff corps of the Navy, subject to qualification therefor as provided by law:

Adkins, Harvey J.	Holmes, Stanley O.
Cantrell, William M.	Lessel, John C.

Michael D. Gaden (naval enlisted scientific education program candidate) to be a permanent ensign in the line or staff corps, subject to qualification therefor as provided by law.

The following named (Naval Reserve officers) to be permanent lieutenants (junior grade) and temporary lieutenants in the Medical Corps of the Navy, subject to qualification therefor as provided by law:

Gilbert, Henry R., III	Stone, Richard
Sanders, Henry A., III	

The following named (Naval Reserve officers) to be permanent lieutenants (junior grade) and temporary lieutenants in the Dental Corps of the Navy, subject to qualification therefor as provided by law:

Campbell, Larry G.	Rippert, Eric T.
Conlon, Thomas O.	Romero, Felix
Curtiss, John T.	Thornton, William K.
Hollen, Michael C.	Troutman, Gary W.
Riggs, Robert J.	Whiting, Lynn G.

David P. Haro (civilian college graduate) to be a permanent lieutenant and a temporary lieutenant commander in the Dental

Corps of the Navy, subject to qualification therefor as provided by law.

The following named (civilian college graduates) to be permanent lieutenants (junior grade) and temporary lieutenants in the Dental Corps of the Navy subject to qualification therefor as provided by law:

Cleveland, William A. Sunderman, James G.
Reiff, Gregory J. Vacca, James A.

The following named (Naval Reserve officers) to be permanent lieutenants and temporary lieutenant commanders in the Dental Corps of the Navy, subject to qualification therefor as provided by law:

Back, Jim P. Powers, James A.
Fady, James A.

The following named (Naval Reserve officers) to be permanent lieutenants (junior grade) and temporary lieutenants in the Medical Corps of the Navy, subject to qualification therefor as provided by law:

Engleman, David R. Hunter, William L., Jr.
Griffin, Howard A., Jr. Swan, David M.
Horowitz, Irvin R. Wrobel, Lance J.

William W. Stuart (Naval Reserve officer) to be a permanent lieutenant in the Dental Corps of the Navy, subject to qualification therefor as provided by law.

The following named (Naval Reserve officers) to be permanent lieutenants (junior grade) and temporary lieutenants in the Dental Corps of the Navy, subject to qualification therefor as provided by law:

Antimarino, Ronald F. Giorgetti, Paul J.
Carlson, Curtis E. Lewis, Doyle M.
Curtiss, John T. Mathews, David P.
Frazier, James L. Stauffacher, Richard K.

Prince E. Denton (civilian college graduate) to be a permanent lieutenant and a temporary lieutenant commander in the Dental Corps of the Navy, subject to qualification therefor as provided by law.

The following-named chief warrant officer to be an ensign in the Navy, limited duty, for temporary service in the classification indicated and as permanent warrant and/or permanent and temporary warrant subject to the qualification therefor as provided by law:

AVIATION MAINTENANCE

Brattain, Herbert K.

The following named officers for temporary promotion to the grade of commander in the line, subject to qualification therefor as provided by law:

Marriner, Richard Eugene
Guisinger, Lawrence Barrett, Jr.
Walker, Samuel Bruce
Bolst, Albert Lea
Pitts, Paul Denney
Gallagher, Robert Stephen
Pedersen, Alton Andrew
Wintriss, George Victor
Master, Carl Lyman, Jr.
Wilson, Derek Westervelt
Olmstead, Stanley Edward
Combs, Robert Lamar
Morris, Jesse Beverly, Jr.
Kennedy, Raymond Joseph
Hoover, Cameron Lee
Denton, Douglas John
Brown, Donald Louis
Meadows, Landon Odell
Potter, Clare Elmer
Campbell, Carl Eugene
Dennis, Paul Lester
Dement, Ira Benjamin
Gagne, Wilford Clifford
Langley, Charles Ralph
Peebles, Baker Lawrence
Bueche, Arthur Henry, Jr.
Vonier, Richard Louis
Cornett, Charles Sherman, Jr.
Scoffield, Gary Adams
Chalmers, William Coulter
Austin, Ellis Ernest
Sylvester, Vincent
Wylie, Clayton Russell
Houglum, Leon Peary
Murray, James Calvin
Oppedahl, Phillip Edward
Nelson, Robert Eric
Page, Arthur M.
Young, Edward Barham
Buchwald, Robert Dale
Pritchard Joseph Reese
Somers, David Walter, Jr.
Reich, Merrill Drury
MacNichol, Malcolm Stuart
Burrows, Jack
Busby, Richard Edward
Bauschka, Patrick Francis
Tasker, William George
Simcox, James Godwin
Panarese, Adam Francis
Usilton, William Beck
Wills, Doyne Robert, Jr.
Glickman, Walter
Persels, Lyle Dewitt
Morris, Charles Howard
Smith, Eugene Franklin
Reynolds, David Bertram
Miller, Robert William
Lee, Dennis Bryon
Scott, Charles Herbert
Gonzalez, Robert Neil
Simpson, Jon Dennis
Donohue, Douglas Jerome
Henry, John Archie, Jr.
Carlson, Walter Gene
Cramer, Edward Alfred, Jr.
Browning, Elmer Luther
Ballou, James Edward
Myers, Ashley Alfred
Guimond, Louis Francis
Parker, Jackson Knowles
Zimmerman, Willard Charles
Kuck, Donald Lee
Firey, Roger Stafford
Dewey, Richard Frank
Pape, Frank Ferdinand
Albritton, David Lee
Denoon, Norman Lee
Demarino, Thomas Vito
O'Connor, Neil Francis
Goodwin, James Barden
Simpson, John Edward, II
Kuehler, Donald Edward
Bradford, J. W.
Schumacher, Duane Otto
Kolstad, Thomas Carl
Neuhaus, Charles Franklin
Smith, Lee Oran
Kratch, David Arnold
Strommen, Gene Arthur
Werenskjold, Gary William
Malvin, Frederick Bage
Sears, Johnny Marion
Leban, Carl
Johnston, Harold Benjamin, Jr.
Spero, Joseph Richard
Stowell, Marshall Alfred
Brown, Ralph Edward, Jr.
Korthe, James Doran
Stegrist, Edward Adam, Jr.
Fitzgerald, John Francis
Matteson, Kelvin Lester
Stewart, George Wallace
Barton, Robert Lawrence
Taylor, James Edward
Broyles, Bill Ray
Sykes, Floyd Eugene
Tully, Joseph Frank
Burns, Gerald Joseph
Strey, Dennis Wilbert
Higgins, John Joseph
Tulley, Cecil Richard
Wakatake, Clifford Kiyoshio
Neeley, Wallace Wayne
Bailey, William Benteen
Hyde, Ronald Pope
Weseleskey, Allen Ellis
Ford, Randolph Wright
Wilson, Robert Marvin
Sachtjen, Jerry William
Mansfield, James Lawrence
Vezina, George Robert
Bryant, Don Michael
Chauncey, Arvin Roy
Wingerter, Edward William, Jr.
Allen, Archie Eugene
Isenhour, William Jacob
McKnight, James Donald
Whelan, Mathew John, Jr.
Lee, Kenneth Clifford
Caine, Paul Eugene
McKamey, John Bryan
Aucoin, James Benjamin
Bethea, Carl Lewis
Gehrig, Jerome Charles
Marriott, Michael John
Groscup, William Dale
Hall, John Owens
Zaludek, George Michael
Monroe, Vincent Duncan
Boguslawski, William Tadeusz
Hartman, Anthony George
Krueger, Milton Edmund
Bailey, James Edward
Noggle, George Alfred, Jr.
Haliday, George Warren
Repass, Donald Eugene
Heekin, John Patrick
Shaffer, Clyde Hoover
Leech, Robert Joseph
Cornell, John Paul
Hensley, James Virgil
Kimball, Paul Elmer
Miller, John Laurence
Murphy, John Alfred
Kilpatrick, Thomas Eugene
McIndoe, James Edward
Bushnell, Malcolm West
Pippins, Elery Harold
Ginn, James Thomas
Debode, Donald Gene
Lange, Christian Alexander, Jr.
Mann, John Philip
Hegeman, Joey William
Corrigan, Richard Walter
Coyne, Thomas
Greer, Robert Eugene
Piotti, Walter Theodore, Jr.
Baker, Donald Adrian
Swartz, Theodore Robert
Winchester, Morton Summers
Ellington, Norman David
Catron, Jerry Michael
Thomas, James Wooten
Grant, Howart Wilkerson, Jr.
Appelhof, Gilbert Alan
Smith, Phillip Don
Braunschweiger, Andrew Eugene
Kent, Ronald Harold
Huggins, Andrew Curtis
Fox, John Francis Joseph
Baumstark, Richard Blake
Gilkison, Edward Robert, Jr.
Daly, John Stephenson
Earhart, Kay Eugene
Sale, William Luther
Weichman, Denis Regnauld
Gardella, John Kerr
Ream, Ronald Lowell
Armstrong, Clarence Ervin, Jr.
Egan, Robert William
Burton, James Leroy, Jr.
Bailes, Ralph Thomas
Wieschoff, Kenneth Harry
Coffey, Robert Carlin
Castle, Ronald Gene
Owens, Darrel Dean
Brown, Howard Athur
Yelle, A. Courtney
Golder, Thomas Vincent
Leblanc, Thomas Dauphin
Mueller, John Arthur
Morton, Stewart Malcolm
Endo, Norio Bruce
Jurgens, Robert Anthony
Sanders, Wilbur Fisk, III
Knowles, Russell Jr.
Littlewood, Lyle Eugene
Higginson, John Joseph
Myers, Dale Phillip
O'Keefe, Timothy Robert
Hay, Donald George
McEnaney, Thomas James, Jr.
Campbell, John Richard

Furtado, Francis Joseph
Guttery, Thomas Hobson
Schoeff, Kendall E.
Ake, Charles Francis
McGylnn, James Robert
Davis, Thomas Alfred
Thorpe, Gordon Lewis
Grady, Roger Dennis
Riedemann, Walter Joseph, Jr.
Flynn, John Joseph
Stanford, Robert Leland
Pollard, Ronald Terrell
Garrett, Roger Dean
Taylor, Jeremy Dolph
Ryan, Patrick Francis
Maxwell, Matthew Thomas, III
Ogle, Peter Wayne
Bisek, Dennis George
Rae, Paul O'Leary
Wirth, Charles George
Webb, Kenneth Howard
Wood, Richard Grimshaw
Sierra, Edward Perrault
Clark, Thomas Breckenridge
Rimson, Ira Jay
Meyer, Richard Ervin
Kushner, David Arthur
Daum, Richard August
Propst, William Floyd
Bentley, Robert Edward
Flyum, James Kenneth
Thornsley, John Thomas
Funderburk, Jeryl Dean
Johnson, Phillip Seth
Simerly, Glen Edward
Newton, Robert Lewis Lavoy, Jr.
Prien, Richard Kenneth
Howe, John Edward
Alves, Arcenio, Jr.
Shores, Howard Veasey
Beamon, Joseph Everett, II
Plassmeyer, Joseph Donald
Roberts, Gordon Whayne
Burpo, James Harvey
McHugh, Charles Earl
Ore, William Edward
Marthinson, Detlow Mainch, Jr.
Bellune, Max Mitchell
Porcaro, Anthony Paul
Magnus, Ralph Stanley
Weisman, Burton Stuart
Mead, Gerald Richard
Horsley, George William, Jr.
Hibbard, Grant Welk
Johnson, Walter Edwin
Peterson, Laurel Charles
Engelhardt, James Henry
Burson, Donald Lee
Boyles, Harlan Henley
Schulz, Paul Henry
Vescelius, Milton James, Jr.
Wheat, Elbert Ervin
Yetter, William Stanley
Newcomb, Zeanious Lee
Cox, Edward Franklin
Ginther, Larry Lyon
French, Douglas E.
Brown, Roger William, Jr.
Promersberger, Edward Sebastian
Parker, Ronald Hearn
Patrick, Andrew Kenley
Campbell, Norman Dean
Owens, Robert Spencer
Walston, Jerry Don
Woods, Brian Dunstan
Perry, Leonard Gordon
Bolton, John Mason
Anderson, Edwin Knowles
Snow, Kennedy Bruce
Anderson, Gary Marshall
Hammock, Donald Paul
Alberg, Donald James
Addison, Carl William, Jr.
Pedersen, Dan Arthur
Schussler, Gerald Arthur
Schmidt, Arnold Christopher
James, James Edward Manson
Pietrzak, Edward Stanley, Jr.
Reynolds, Robert Lee
Mismer, Grady Franklin, Jr.
Perrella, Albert Joseph, Jr.
Greene, George Cameron
Timlin, Joseph William, Jr.
Wilson, Leonard Odell
Branscomb, Max G.
Fournier, Joseph Oscar
Feuerhelm, Duane Leroy
Cochran, William Franklin
Williams, Doyne Gene
Franklin, William Patrick
McTighe, Roger Paul, Jr.
Hellman, John Stephen
McDaniel, Rodney Bonner
Hutchinson, Charles Kenneth
Taylor, Gaylen Dean
Araki, Makoto
Markley, Wade Eddy
Wild, Ronald Austin
Haack, Norman Erwin
Bowers, John Pennington
Lang, William Robert
Pearson, Merton Arcadus
Gallion, Lawrence Barclay
Hyatt, Charles Edward
Dickey, John Edmunds
Kesteloot, Robert Warren
McIntosh, Charles Eugene
Hart, Raymond James
Pocklington, William Dale
Connery, John David
Worst, Dale Richard
Feingersch, Allen
Songster, John Hugh
McHenry, William George
Vermillion, John Edward
Belto, Meryl Allen
Everly, Vernon Richard
Ermis, Leroy Charles
Butler, Clarence Billy
Westfall, Van Franklin
Oyler, Charles Clinton, Jr.
Bankowski, Walter Francis
Hawkins, Sam Henry
Palmer, Gerald Anderson
Touchton, John Henry, Jr.
Maurer, Earl Thomas
Smith, John Carl, Jr.
Coyne, William Louis
Osborne, Dale Harrison
Queen, Ronald Jess
Walker, Richard Allen
Salisbury, Jack Steffee
Grant, Gerry David
Perro, Michael Alexander, Jr.
Horton, Jerry Douglas
Mouser, Hugh Phillip
McDonald, Richard Reese
Krekel, Lyman Edward
Evens, Philip Roland
Waring, James Dean
Ferm, Dennis Wayne
Stiers, Lawrence Keith
Mills, Albert
Ahrenstein, Monroe Joel
Cramer, Erich Hansotto Ernest
Zwick, John Elmer
Godefroy, Pierre Louis
Frankenberger, Paul Francis
Mills, Thad Wesley
Kittleman, Donald Leslie
Adgent, Robert Boyd
Pappas, Jimmy
Ragan, Charles Patrick
Wallace, Laird Edward
Misura, Paul
Rogers, David Taylor
Brown, William Sidney, Jr.
Cummins, Clarence Myron
Bowman, Henry Cleveland
Fox, George Raymond
Walter, Clyde Melvin
Fossett, Birchard Clary
Moore, John Wharton
Kennedy, Thomas Ladd
Hartley, Donald Alan
Lambert, Raymond Alfonzo
Forster, Johann Richard
Ruchala, Joseph Felix
Day, James Olin
Winn, Perry Riley, Jr.
Greene, William Harrell, Jr.
Miefert, Milton Delarma, Jr.
Johnson, Ronald Joseph
Burleson, Frank Marvin
Marcus, Robert Ulysses
Walden, Warren Lee
Swanson, Matthew Clark
Leeds, Rene Wesley
Flynn, Samuel Carson, Jr.
Chancy, Thomas Masden
Furey, Edwin Michael
Quigley, Francis Joseph
David, Ralph Harry
Thomas, John Hinson, III
Marshell, Raymond Eugene
Florko, Donald John
Rower, Jay Allen
Dwyer, William Leo
Collard, Keith Paul
Hayes, Michael Francis
Keathley, James William
McMurry, William Thomas
Fleak, Walter Herbert, Jr.
Carder, Denny Martin
Davis, Robert Bruce
Kantor, Clifford Stephen
Bone, John Stanley, Jr.
Kremin, Richard Allen
George, Troy Hescue, Jr.
Reiley, Ralph Hunt, Jr.
Steckel, John Howard
Burgess, Eric Clyde
Bishop, Larry Dean
Muller, Robert Charles
Culberson, George William, Jr.
Cleary, Patrick Roger
Schwaab, Denis Thomas
Bonhag, Waler Dorman, Jr.
Swarthout, Gerald Lynn
McCormick, Bruce Alan
Bremser, William John, Jr.
Hagen, Dael Norman
Owen, William Leon, Jr.
Zackowski, Terrence Lee
Kemper, Ralph Courtney
Bertrand, Jon Stanley
Bendit, Billy Lankford
Allen, David Lee
Steele, William Milford, Jr.
Owens, Sherman Henry
McCampbell, Richard Lee
Kennelly, Bernard John
Shirley, Vernon Dale
Hannah, Elmore Kline, Jr.
Rollman, Gordon Lynn
Haitt, William Douglas
Brooks, Otis McKinley
Hawkins, Charles Derward, Jr.
Barnhardt, David Franklin
May, Robert Carroll
Henderson, Mark Dale, Jr.
Gash, John Allen
Anderson, Franklin Warren
Roundtree, Jack Lewis
Hewitt, Paul Edward
Edwards, Walter Joseph
Holloway, Richard Vernon
Miller, George
Wells, Charles Thomas
Bauer, Paul Franklin, Jr.
Stoeckel, Anthony Wayne
Piche, Paul Duane
Moore, Rowland Wesley
McDonough, Vincent Paul
Weber, Gerald Morris
Marcantonio, Anthony William
Goggin, Richard Edward
Teter, Eugene Victor
Belisle, Gerald Morris
Whiting, Donald Wayne
Arnold, David Lee
Pickett, Ronald Booth
Piersall, Charles Homer, Jr.
Pearigen, Jare Max
Cracknell, William Henry, Jr.
Camp, Joe Don
Hancock, Gus Herndon, Jr.
Harkins, Vyron Vernon, Jr.
Simpson, James Hillman
Miller, David Gordon
Johnson, Wendell Norman
Cochran, Thomas Lenwood

Fitch, Dee Nelson
Richards, Warren David
Duckworth, Jess R.
Degroot, Henry, Jr.
Moke, Paul David
Morsches, Robert William
Micell, Joseph Dominick
Mitchell, Clyde Lee
Wiley, Byron Anthony
Frey, Robert Dean
Millard, David Russell
Blouin, Robert Edward
Jackson, Lester Thurston, Jr.
Parsons, Marland Wolcott, Jr.
Luetschwager, Edward Ernest
Boyle, Ronald Raymond
Steinbrink, Earl Edward
Grimes, Thomas Warren
Cueroni, Lee Angelo
Carlson, Robert Gene
Atkins, Brandon Thomas
Reynolds, Ted W.
Luehring, Davidson
McCaull, John Wayne
Butsch, Lester Hunt
Conklin, Andrew Janke
O'Connell, James John
Alvarez, Franklin Fernsler
Heyde, John Stirling, Jr.
Harvey, Walter Douglas
Kraft, Robert Michael
Scales, Richard Howard
Kerr, William Alexander, Jr.
Smith, William Speller, Jr.
Christensen, John Edward, Jr.
Ballou, Joseph Frank
Warters, Robert Lee
Sick, Gary Gordon
Dyer, Thomas Edward
Fields, David Edward
Sedor, Gerald
McMichael, George Lee
McGill, James Alexandar
Beck, Donald Ernest
McConnel, Richard Appleton, Jr.
Wiltsie, Ronald James
Arthur, Stanley Roger
Arcuni, Philip
Weiland, Robert Frederick
Sloan, Dennie Young
Ross, Thomas Edward
Wright, Arthur Stclair
Pistotnnik, James Joseph
Shewmaker, John Bisset
Wiley, Bruce Theodore
Trost, Henry John, Jr.
Noll, Charles Francis
Wilson, Bruce Douglas
Nielsen, Niel Peter
McCutchan, Milton Lloyd
Deegan, Robert Francis.
Boyne, Peter Bernard
Didier, Jacob Peter, Jr.
Cooper, David Stuart
McCullough, Lawrence Edward
Clarke, Douglas Lane
Felt, Bruce Charles
Fitzgibbons, George Paul
Prosser, Norman Edward
Ball, Marvin Loy, Jr.
Boice, Frank Bitts
Gilliland, Lawrence Arthur, Jr.
O'Neill, James Patrick, Jr.
Peterson, Paul Arnold
Hall, Charles Reade, III
Gearin, Billy Dan
Olmer, Lionel Herbert
Aydt, Roger DeWitt
Bryans, Brian Kent
Baldwin, Oa Fredrick
Davis, Jimmy Wayne
Furrow, Donald Edson
Thaubald, Edward John
Knapp, Ralph Edmund
Koehler, Norman Elias, III
Blair, Frank
Lowery, Needham Hugh
Blanchard, Lewis Thomas
Nichols, Richard Donald
Martin, Marshall Warren

Fisher, Harvey Enloe
Harre, James Louis
Anderson, Anders Timm
Paul, John Stephen
Sutphen, Harold John
Weston, Jack Lane
Peace, John Darlington, III
Hines, Dean Howard
Quinn, James Hastings
Hellewell, John Seymour
Smith, Bertram David, Jr.
Richardson, John Daniel, Jr.
Essig, John Raymond
McGuigan, David Brant
Sullivan, Jermiah Francis
Lanman, George Maurice
Schneider, Henry John
Davis, Robert Earl
Turner, John Joseph, Jr.
Cromer, Charles Clinton
Zollars, Allen Marshall, Jr.
Stoetzer, Raymond Norman
Hogan, Lawrence Miles
Enkeboll, Richard Ernest
Holtzclaw, John William
Donnelly, Thomas Francis
Leuschner, Robert Lee, Jr.
Larson, Charles Wesley, II
Strahm, Kenneth Alan
Parcell, Kenneth Howard
Severance, Laverne Stanard, Jr.
White, George William, Jr.
Wilbur, Charles Harrison
Carson, William Grant
Quast, Harry Stillman
Bullock, Harold Oliver, Jr.
Foss, Robert Nelson
Tatro, Peter Richard
Chanslor, Richard Maurice
Schleicher, Richard Joseph
Frommer, Paul Stanley
Komp, Richard Lloyd
Knutson, Jerry Gail
Biele, Charles Edward, Jr.
Peerenboom, William Henry
Wyatt, Raymond Edward
Burcher, Philip Edwin
Ballantine, James Clement, Jr.
Conner, Eugene Davison
Breckon, Richard Louis
Hiebner, Robert John, Jr.
Clevenger, Redmond Lawson
Albero, Carl Michael
Marxer, Hugo Edward
Sloane, Stephen Burton
Aldana, Louis Pelayo
Hobler, William Joseph, Jr.
Smithey, William John Henry
Brookes, Allan Gorely, Jr.
Charles, Richard Noel
Livingston, Gill Frederick
Kunkel, Larry Duane
Stoodley, Francis Howard
Roeser, William Valentine, Jr.
Baldwin, Roger Lane
Beasley, Charles Jahns
Harner, Charles Franklin, Jr.
Coulbourn, Samuel William
Doughdrill, Charles Weston
Hughey, Ira Allen
Gentz, Richard Corbett
Viessmann, Alex Jan
Hewitt, Wesley Charles
Westlake, William Robert
Dugan, Ferdinand Chatard, III
Kirkland, Thomas Jefferson, III
Gunderson, Donald Henry
Womack, Leonard Ray
Daly, Frederick Trenk, III
Cundari, Francis Lawrence
Snell, William Franklin
Greiling, David Scott
Hyatt, Leo Gregory
Kramer, Theodore Roosevelt, Jr.
Rydzewski, James Charles
Underhill, Samuel Graham
Blessing, George Richard
Beatty, James Robert, III
Jerome, John David
Frederickson, Arthur Hugh
Vaughan, Edward Bressie, Jr.

Crowe, William Mitchell, Jr.
Finn, William Anthony
Burrows, James Bradford
Hartman, Richard Danner
Strange, Robert Orris, Jr.
Finley, John Lawrence
Normand, Eugene James
Henry, Michael Collins
Yockey, Harry Merwin
Gowans, George Keith
Fahrney, David Laurence
Meaux, Richard Pollock
Scott, Douglas Lee
Emmett, Richard Franklin
Buck, David Ervin
Caciola, James John
Megehee, Louis Dan, Jr.
Schneidewind, Gilbert Pease
Stewart, Keith Archibald
Ritchie, Sherwood Leferve
Miller, Peter Ross
Davis, John Weyman, Jr.
Brewton, Edward Allen
Smith, William Jerry
McFarland, James Stephen
Stevenson, Leon McCoy, Jr.
Demarest, Joseph George, III
O'Connor, Paul
Parnell, Ural Clay
Nevin, Robert Fenton
Lange, William Gordon
Kiefer, Martin Daniel
Hastie, Robert Keith
Goldstone, Ronald George
Masten, Lawrence Everett
Coolbaugh, Jesse Dixon
Collins, David Malcolm
Madouse, Richard Lee
Cooper, John Duffield, Jr.
Holt, John Albert, III
Margedant, John William
Bauer, Herbert
Luke, Charles Thomas, Jr.
Hall, Gordon Bradford, Jr.
Segelhorst, Herbert Edwin
McCulloch, James Moody
Cross, Claude Christopher
Melnick, Norbert Waring
Kuntz, David Stephen
Wellborn, Robert Morgan, Jr.
France, Morgan Michael
Black, Richard Orrin
Jones, Colin Mastin
Avila, John, Jr.
Bower, Bruce Bradley
Magner, Lawrence Richard
Loewenthal, Robert Gordon
Pharis, Wade Jefferson
Matthews, Gary David
Green, Richard Francis
Mickle, William McEwen
Christenson, Robert Warnhoff Sig
Koster, Alfred Maria, IV
Malmquist, Emil Dwight
Clark, Loren Lee
Lamay, Urban Randel, Jr.
Hower, James Joseph
McPherson, Roger Bering
Langholz, Marcus Joel
Howland, John Herrick
Erikson, Theodore William
Allen, George Smith
Knodle, William Clifton
Coleman, James Joseph
Smith, William Earle, Jr.
Elich, Robert Louis
Curry, William Hubert, Jr.
Griffin, David Hamlin
Miklos, Thomas John
Bond, Charles Stephen
Newell, John Whitaker
Kentopp, Donald Eugene
Cole, William Marchant, II
Schiwitz, Preston George, Jr.
Vanlandingham, Clyde Hampton, Jr.
Burgess, John Edmund
Puerling, Peter Nicholas
Gustafson, Charles Bengt
Moore, David Winston
Brown, Thomas Scot
Poole, James Richard

McMillen, Kenneth Allen
Mahon, Edward Joseph, Jr.
Tarrico, George John
Malley, Kenneth Cornelius
Brooks, Dennis Matthew
Siegel, Kent Rodney
Miniter, Howard Elmer, Jr.
Breed, William Lee
Hoppe, Herbert Lee
Haynes, Harald Johan
Philipps, George
Rutemiller, Oren George, Jr.
Mahony, Terrence Michael
Silvia, Charles Paul
Whitmire, Wilson Royer
Larabee, Kent Wilber
Saracco, Robert Louis
Veek, Eugene Bradford
Atwell, Robert Franklin, III
Ward, Richard Rollins
West, William Wright
McCarthy, James Francis
Jordan, William Travis
Robinson, Kenneth Frank
Shields, Ronald Max
Johnson, Robert Allen
Dove, Ray Wood, Jr.
Katz, Bennett David
Anderson, Edward Everett, Jr.
Zimmer, Emory Partl
Dennis, Jefferson Rice, Jr.
Law, James Edwin
Gulliver, Victor Stanley
Taunt, Melvin Eugene
Brown, Randall Robison
Brown, William Tyler
Pruett, Ronald Lee
McGlasson, Daniel Eubank
Whaley, Thomas Prioleau
Gundermann, Richard Thomas
Rucker, William Armor, III
Junghans, Peter Austin
Howe, Frederic Northey, Jr.
Moreau, Ronald Frederick
Bostick, James Hugh
Defibaugh, Carl Francis, Jr.
Bender, James Edward
Cox, James Parrish
Neary, Joseph Francis
Fickenscher, David Burke
O'Brien, George Eugene
Tate, Robert Hunter, Jr.
Truxall, Charles Wible, Jr.
Ong, Richard Eugene
Searcy, William Paul
Ellsworth, Warren Reginald, Jr.
MacCubbin, George Edwin, Jr.
Kriewall, Roylec Louis
Shay, James Edward
Hatcher, Jerry Maldon
Stacey, John Lyle
Patterson, Dale Kendall
Dunham, William Carl
Kershner, Robert Lee
Lewis, Robert Kay, Jr.
Morris, David Roland
Adams, Samuel Wren, Jr.
McDermott, Joseph Thomas
McDonald, Gerald Wayne
Boerner, Delbert Dean
Dean, Bill Clark.
Johnson, Leonard Willby, II
Holland, Joe Lambert
Mumford, Robert Evans, Jr.
Betterton, Thomas Cherrill.
Farley, Edward Bigelow, Jr.
O'Hara, James Patrick, Jr.
Knott, Richard Charles
Sawyer, Tommy Don
Rositzke, Robert Hugh
Murray, Thomas Robert
Lowe, Gary Bennett
Meukow, Walter Trendel
Foresman, James Hammond, III
Watson, John Alan
Beatty, Don George
Walker, Thaddeus Owens, Jr.
Gimber, Harry Meeker Stuart, III
Barnum, Craig Luther
Peacher, Robert Wadsworth
McGinty, Thomas Joseph
Southern, Wilson Edwin
Watts, Robert Bach
Dunlap, Stanton Parks
Barker, Harold Douglas
Solomon, Selig
Dickey, Kenneth Ray
Horsefield, John Edwin
Mitchell, Donald Leslie
King, Carleton James, Jr.
Heisner, Robert Irving, Jr.
McGrail, Charles Reynolds, Jr.
Moore, Jimmie Rodgers
Burns, John Douglas
James, Thomas Paul, Jr.
Fernald, Lloyd Wilbur, Jr.
Lowrance, Douglas Long
Stogis, Peter Douglas
Greenhoe, Duane Floyde
Judge, Joseph Ivis
Bruni, Richard Lee
Baker, Peter Anthony
Porter, Richard Grayson
Gambill, Richard Kemp
Herring, George Griffin, III
Heyward, Shannon Douglas
OConnell, Daniel Joseph
Barker, Richard Harvey
Fishburn, John Heffelman
Middleton, John Edward
Stouffer, John Willoughby, II
Hix, Jack Manuel
Leslie, William Neil
Buck, Wilbur Phifer
Melanson, Edward Joseph, Jr.
Vosseller, Richard Turner
Couture, John Francis
Higgins, William Howard
Wilson, Garry Leonard
Hite, Philip Robert
McNichols, John Patrick, Jr.
Buckner, James Arnold
Loman, Cleve Edgar, Jr.
Hammack, John Edward
Barker, Ernest William
Pounds, Philip Clyde, Jr.
Holzschuh, Jacob Robert
Mott, Louis Dale
Russell, Richard William
Cahill, Lionel Albert, Jr.
Allison, Kenneth Louis
Nider, Kenneth Eugene
McCullough, Robert Francis
Hester, James Homer
Lockwood, Robert Kenneth, Jr.
Warden, Kenneth John
Nicholas, Joseph
Johnson, Theodore Robert, Jr.
Glickman, Thomas Walter
Montgomery, Donald James
Cowan, Terrance Eugene
Orourke, Bernard Francis
Hawkins, Leroy Thomas
Willis, Clyde Piner
Odea, Thomas Vincent
Picher, Francis Xavier, Jr.
Eulenstein, Karl Hugo
Metz, Frederick John
Quitiquit, Max
Alexander, John Carrol, Jr.
Williams, Barton Burchard
Riley, Charles Elroy
Creswell, Lawrence Keene
Davis, Robert Donald
Meeker, Quentin Stuart
Findley, Ronald Clare
Coffee, Gerald Leonard
Buck, Ralph Vincent
Christenson, William Charles
Carleton, Jack Earl Lansing
Rouse, Walstein McCord
Hall, John William
Hubitsky, John Edward
Giganti, George Maurice
Poland, Clarence, Jr.
Thomas, Richard Keith
Nickerson, Walter Seldon, Jr.
Helveston, Eugene Harold
Corliss, Walter Frank
Richard, James Everard
Dugan, William Gifford
Wickham, Albert Gerald
Harris, Clarence Hal
Pouliot, Donald Joseph
Higgins, Harles James
Williams, Dale Howard
Schmidt, Oscar Henry
Edwards, Donald Lewis
Smith, Leonard Thomas
McGraw, Lloyd Herman
Armbruster, Robert Bernard
Pappas, Albert James
Ault, Russell Stewart
Robert, Earl Leon
Dygert, Robert Leroy
Cahill, Edward Henry
Webster, Audrey Clyde
Kirby, Raymond Edward
Litton, Robert Clifton
Clark, Charles Francis
Wurth, John Gerald
Wasloski, John Edward
Gurke, Donald Lee
Doherty, Edward Francis
Cox, Duane Arlo
Thorpe, Paul Joseph
Russell, Earl Harland
Barnes, Paul Donald
Venezia, Howard
Roberts, James Jacob
Blasko, John Edward
Wing, Rodney Claire
Powell, Daniel Gene
Glancy, Robert James
Gruendl, Paul Lawrence
Schimming, John Gottlieb
Modeen, Victor David
Dodd, Jimmy Joe
Carr, Samuel Leroy
Johnson, Ronald Laurence
Smith, Don Lynden
Gott, William Berlin
Smith, Leon Louis, Jr.
McClary, Richard Charles
Allen, Alvin Kay
Thoen, Glenn Robert
Bartee, William Joseph
Bronson, Edward Francis
Martin, William Gearheart
McConville, James Emmett
Pakradooni, Haig Herant, III
McCauley, George Kerry
Murdoch, Thomas McCulloch
Poindexter, John Marlan
Harriss, David Jackson
Wardwell, Arthur Francis, Jr.
Culp, Chester Caryl, Jr.
Crockrell, Charles William
Bradfield, James David
Hayes, Wilbur
Marshall, Robert Lynn
Robertson, Robert Duane
Nagle, Richard David, Jr.
Nottoli, George Felix
Dundore, Harold William
Hinz, Orville Carl
Keller, Lewis Donald
Collins, William Jerome
Walsh, David Lawrence
Erven, James Samuel
Cooper, Paul Winford
Stewart, George Wheeler, Jr.
Wright, Mack
Bullington, Jack Frank
Gofus, Joseph George, Jr.
Inman, Raymond Eugene
McGuirk, William Edward
Victor, James Alan
Fitzgerald, Bernard Maxwell
Cameron, Edward John
Clay, Harry Bert, Jr.
Sallee, Ralph William
Caudry, Arthur Rolland
Jones, Francis Patrick
Campbell, Robyn Moore, Jr.
Pingel, Leon John
Koczak, Edward Joseph, Jr.
Rich, Roger Lee, Jr.
Brickell, Charles Hennessey, Jr.
White, Charles Evans
Parker, Donald Fred
McRight, Clarence, Jr.
Harper, Thomas John

Holsten, Donald Wayne
Huckabay, William Osler, Jr.
Doe, Burdell Frank
Malone, Robert Stephen
Ogren, John Patrick
Beard, Percy Morris, Jr.
Maloney, Thomas Clogher
Mackinnon, John Hutchinson
Pyatt, Arnold Flack
Cox, Kenneth Eugene
Demand, Daniel Harry
Cantrell, Walter Hollingsworth
Hekman, Peter Maynard, Jr.
Campbell, Craig Sherman
Dunbar, Richard Parker
Burke, John Patrick
Edwards, Steven Hamilton
Buell, Thomas Bingham
Hansen, Harry James, III
Caldwell, James Franklin
Steckler, Joseph Leo
Bernsen, Harold John
Grimm, Thomas Dixon
Williams, James Raymond
Davis, James Vernon
Hodgkins, William Stuart
Fogarty, William Miley
Riches, Raymond Cuddy
Lindsey, Eugene Elbert, Jr.
Carpenter, Lawrence Jay
Rice, Lloyd Keith
Hodgens, Jack Anthony
Mixson, Riley Dewitt
Martin, Richard Lee
Baker, Edward Bigelow, Jr.
Kelly, Robert Joseph
Mangol, Frederick Nicholas
Hacker, Benjamin Thurman
Brooks, Linton Forrestall
Neese, John Frederick
Evans, Thomas Witherspoon
Curtis, Guy Haldane, III
Rogers, David Neil
Shaw, John Frederick
Jensen, Robert Lewis
Isaacson, Alan Twiet
Wentz, James Eugene
Viccellio, John Shannon
Feran, Paul Michael
Allsopp, Richard Edgar
Wiener, Thomas Freud
Jacobs, Thomas Leroy
Fisler, Louis Henry
Butterworth, Frank Willoug, III
Long, George Truett
Meinig, George Richard, Jr.
Shriver, Norman William
Hummer, John Jay
Topping, Robert Leavy
Dietrich, William Howard
Anderson, Richard Scruggs, Jr.
Pendley, William Tyler
Lorusso, John Michael
Lawrence, Kent Beckwith
Kaufman, Larry Edward
Adams, John Warren
Hamrick, James Murchison
Larson, Jerold Joseph
Miller, Robert Lewis
Ingram, Ronald Frank
Parrish, David Fairchild
Wood, Leland Edward, Jr.
Hamilton, Larry Dan
Smedberg, Edwin Barden
Bussard, Vernon Randolph, Jr.
Sample, Bobbie Lee
Shapero, Allen Leonard
Bovey, Robert Leroy
Eldredge, Howard Sunderlin
Bacon, Roger Francis
Brantuas, Joseph Albert
Maher, Daniel Richard
Andres, Charles Gene
Nelson, Paul Christian
Cossey, James Donald
Palmer, Leslie Nelson
Hardy, Brenton Philip
Chabot, Peter Gordon

IN THE MARINE CORPS

The following named officers of the Marine Corps for temporary appointment to the grade of chief warrant officer (W–4):

Louis Acosta
Joseph L. Backo
Paul R. Baker
John W. Bishop
Eugene A. Bowen
Harry L. Brooks
Jerry E. Bunting
Paul W. Capelle
Darl G. Capps
George W. Champion
Kenneth W. Clem
Ralston S. Clinch
Edwin J. Coyle
Robert G. Dietz
Bernard R. Doran
Edward A. Downes
Duane R. Doyle
Joe H. England
Wendel P. Fager
Robert D. Favreau
George W. Fenwick
Raymond E. Ferguson, Jr.
Billy J. Fifer
Clyde W. Folsom
Billy K. Gabriel
Barry J. Georgia
Ronald C. Harrison
Lawrence E. Harry, Jr.
Lyle C. Hassen
Donald L. Hazlett
Joe P. Hedrick
Robert A. Heusner
Wellington A. Hiester, Jr.
Byron L. Houggard
James F. Hollis
Allyn A. Humphreys
Archer D. Hurd
Daniel J. Hurley
Joseph A. Johann
Dan E. Johnson
James R. Kelly
Bernard W. Keroack
Walter R. Ketring, Jr.
Charles J. Looff, Jr.
Robert W. MacFarlane
Paul B. Maguire
Robert J. McWhorter
Robert D. Miller
Glenn P. Milliman
Douglas W. Montana
Anthony Mucci
Paul A. Myers, Jr.
Henry W. Nyenbrink
Howard C. Oakley
James G. Olsen
William H. Omdahl
Arthur R. Pearce
Benson Peltzer, Jr.
Robert E. Pope
Sam J. Prato
Dale Raymond
Thomas E. Redican
Daniel W. Richards
Stephen J. Rosta
Richard S. Russell, II
Harry L. Sagar
January T. Sakert, Jr.
William C. Schlondrop
James H. Stowell
Frank R. Sutherland
Thomas F. Taylor
Allen B. Thrailkill
Howard L. Underwood
Richard E. Weatherly
David C. Weber
James J. Wiese
John C. Williams
Floyd B. Worcester
Robert L. Worley

The following named officers of the Marine Corps for temporary appointment to the grade of chief warrant officer (W–3):

Frederick Aguilar
Lloyd Allen, Jr.
Kleve L. Anderson
Samuel M. Ballance, Jr.
Joseph F. Bates
Harry L. Bentley
Daniel L. Bayse
Robert M. Billick
Mason G. Blake
Ralf R. Boedefeld
William M. Bokholt
Philip A. Bream
Harry A. Brown, Jr.
John N. Bruch
Johnnie D. Burtscher
Charles J. Bushey
Charley M. Campbell
Eugene E. Carlton
Edward E. Carmody
Alex H. Caylao, Jr.
Louis A. Chatelle, Jr.
Henry J. Cipolla
Stephan L. Constantin
George S. Cornuet
Frank A. Cox, Jr.
Ellis L. Crews
Philip T. Cummins
Carl B. Damon
James M. Darnell
Trever E. Darner
John F. Darracott
Vaughn C. Davis
Henry A. Dierker
Edward Dimaio
Ronald L. Dodge
Ronald F. Drummond
James M. Dufriend, Jr.
James C. Feldhaus
Harold R. Fischer
William A. Fitts
Jimmy D. Fitzpatrick
Fredric L. Fletcher
Jack A. Frost
William R. Fry
William A. Fyles
Rhyne E. Garris
John Geiske, Jr.
Dan S. Gover
Bruce R. Greisen
James H. Guelich, Jr.
Edward R. Haines
Lorell J. Haughley
Allen J. Hebert
Charles T. Hedrick
Larry G. Heitzman
Frederick P. Heller
William M. Hemlepp
Franklin R. Hennon
Donald L. Howard
Carlos E. Hoyos, Jr.
Harley L. Huntley
Stanley P. Johnson
Clarence H. Jones
George E. Jones, Jr.
Reginald L. Jones
Phillip E. Jonio
Joe T. Jordan
William C. Kahle, Sr.
Arthur M. Kearley
Ray A. Keith
Thomas P. Kelly
Gerald T. Kemick
Ben W. King
Mike Kipick
Robert T. Kirchmeier
William E. Knepp
Everett W. Krantz
Leon Lambert
Howard G. Lanis
Duane D. Larson
George E. Lenhart
Samuel P. Lewis
Curtis J. Loehr
Boyzy C. Long
Joel K. Lowell
Ray D. MacPherson
Jimmy L. Manion
Ronald A. Martin
Wayne B. Mason
Allen W. Massey
Dale A. Mathys
Layton E. Mathews
Don E. Mathis
Robert Mayer, Jr.
Marvin K. McAfee
John J. McGraw
Gene V. Messinger
Richard B. Meyers
John J. Mikulsky
Don P. Miller, Jr.
Henry Moore
Theodore M. Moore
James H. Mort
Donald J. Mossey
Michael W. Murphy
Peter B. Murphy
William H. Nelson, Jr.
George E. O'Connor
Milford A. Oakes
Tommy S. O'Shields
James D. Panknin
Kenneth E. Pettit
Robert D. Pitts
Lawrence A. Pollmiller
Henry Posthuma
Robert F. Price
Herman W. Quest
Lewis R. Quill
Arvel H. Raines
Joe D. Ramseur
Walter A. Reeves
Stanley Jr. Rembish, Jr.
Larry E. Rhodes
Arthur D. Richmond
Paul E. Ring
Emmett L. Robertson, Jr.
Raymond J. Roettger
John H. Russell
Eugene D. Sanford
Marion G. Satterfield
Leroy A. Scheller, Jr.
James A. Shaffer
Joseph B. Shaughnessy
Thomas J. Sheridan
Warren A. Simmons
Donald J. Smith
Donald J. Snooks
Fletcher B. Sojourner, Jr.
Ronald L. Sousa
James B. Southall
T. J. Stanford
James N. Stewart
Donald Stokes
James M. Stoops
Walter E. Stringer, Jr.
Lawrence T. Struwe
William H. Stuckey
Charles E. Swisher
Elmer L. Thomas
Stanley B. Thomas
James G. Thompson
Edgar A. Toney
Fred Tucker, Jr.
Robert B. Tucker
Donald L. Vanhoose
Richard A. Voltz
William J. Wallace, Jr.
Joseph E. Ward
Avron J. Watts
Everett A. Weare
Charles B. Whitehurst
Edward E. Wilcoxen
Charles R. Wileman
Wilbur C. Williams
Richard D. Wise
Bascom C. Worley
Clark H. Wylde

The following named officers of the Marine Corps for temporary appointment to the grade of chief warrant officer (W–2):

Ronald Achten
Carmen Adams
David G. Albizo, Jr.
David S. Aldrich
Frank A. Alexander
Robert E. Allinger, Jr.
James L. Allingham
Constantine G. Ambrose
Curtis E. Anderson
James L. Anderson
Ferdinand J. Appl, Jr.
James B. Ash
Ronald H. Asmus
Allan K. Austin
Glenn R. Avey
Welles D. Bacon
James E. Bailey
Claude R. Baldwin, Jr.
Donald G. Baldwin
Ronald A. Balius
Salvatore A. Battista
James A. Belfiore
Ronald L. Bender
Charles S. Bennett
Illuminado Berrios, Jr.
Neal S. Bezoenik
Raymond R. Bickel III
Kenneth C. Bickley
Gary W. Bisplinghoff
Robert L. Blake
Victor H. Bode
Luther A. Bolenbarker
Gilbert H. Bolton
Robert W. Bostwick
Henry C. Boucher, Jr.
Lescoe R. Bourne
Frank E. Box
Donald B. Braun
Francis W. Brewer, Jr.
Jerry J. Briggs
Bruce Brightwell
George R. Brown
Victor E. Browning, Jr.
James H. Bucholz
Gerald S. Bucklin
Delbert A. Bullock
Allen F. Burton
Donald N. Bush
William G. Byrne, Jr.
Billy R. Campbell
Everett J. Campbell, Jr.
Donald L. Caroway
Michael J. Carroll
Ray A. Casterline
John D. Cauble, Jr.
Robert J. Caulfield
Barbara J. Chovanec
Bartley W. Christian
Hershel G. Chronister
Leonard T. Clark
Michael J. Clarke
George C. Cleveland
Rayborn S. Clifton, Jr.
Jose T. Coccovaldez
James E. Collette
Garnet E. Cope
Robert R. Corcoran
Jose N. Corderotorres, Jr.
Lazaro Corpus, Jr.
James A. Cothran
Harry S. Cotton

Hilton Craig, Jr.
Oscar E. Creech, Jr.
Frederic M. Cunningham
Charles A. Dankmyer, Jr.
Douglas J. Danley
Kenneth V. Davis
Louis D. Dearman
Armand H. Desjardin
Herman W. Dial
Thomas C. Dickey
Dennis T. Dinota
Howard G. Dood
Steven J. Draper
Samuel E. Driggers
James E. Dunning
Sidney B. Edwards
Robert D. Embesi
Robert R. Epps
James L. Eure
Jack H. Evans
Donnie L. Fauver
Michael D. Fazio
Bobby L. Ferguson
Harold D. Ferguson
Charles L. Ferko
Roy A. Ferrell
Nelson R. Fincher
Clyde L. Fisher
Joseph R. Fitzgerald
Joe M. Floyd
Ronald R. Fraizer
George M. Francis
Edgar Franklin Jr.
Eugene T. Franklin
Donald L. Galvin
William C. George
Craig D. Gibbons
Robert L. Goller
Ellwood D. Gordon
Joseph A. Gorzynski
Philip A. Grzanich
Pedro Gutierrez
Stephen H. Hagan
Arnold S. Hageman
Edwin A. Hamlin
Martin H. Handelsman
Gerald E. Hanscom
Richard C. Hansen
Donald L. Hanson
David L. Harris
John A. Harris
John T. Hart
James E. Haskins
Joseph B. Hatfield
Emerson W. Hawkins
Harold L. Henry
Donald L. Herpy
Herbert O. Hicks, Jr.
Francis A. Higginson
William A. Higgs Jr.
Paul R. Hoffman
Julius B. Hopkins
Ernie W. Howe
Jacob W. Hughes, Jr.
Edward W. Humphrey
Holland C. Hutchinson
Barton E. Immings
Lowell B. Jackson
Donald W. James
James R. Jennings
Arthur L. Johnson
Ernest E. Johnson
Weldon W. Johnson
Richard C. Jonely
Gene C. Kamplain
Jacob Kappel, Jr.
Harold A. Keith
Joseph E. Kelly
Carl E. King
Thomas F. King, Jr.
Ray E. Kittilstved
Joseph Kochuba
Leroy A. Kramvik
George D. Krebs
Raymond L. Kunkle
William A. Kuykendall
Donald R. Ladnier
Michael S. Lainhart
Donald A. Lane
Juan M. Lem
Babre Lewis
Regenald F. Lightsey
Thomas C. Lish
Redmon J. Loftus, Jr.
Donald C. Long
Gary L. Losey
Patrick J. Lynch
Jose Magallan
William S. Maire
Paul L. Malone
Tommy E. Manry
John R. Marcucci
Daniel Marland, Jr.
William T. Maroney, III
Bobby O. Martin
Harold T. Martin
Kenneth W. Martin
Jerry L. Massey
John L. Matticks
Aove E. Mattox
Roger L. Mauldin
Jimmy E. McCall
Joseph McGann
Bryan M. McGill
Robert N. McIntyre
Thomas J. McIntyre
James F. McLean
James R. McRae, Jr.
William D. Meadors III
George A. Miller
Robert M. Miller
James R. Milner
William F. Milton, Jr.
Frank G. Misemer
Kenneth L. Mitchell
Eugene E. Montgomery
Jimmy B. Morgan
Allan R. Morris
Earl F. Morris, Jr.
Thomas W. Morris
Louis Myers
Ronald C. Newman
William G. Nickels
John A. Nowicki
Sam G. Ochoco
Jerry W. Odell
Juan S. Oquendo
Joseph N. Parisi
Arthur R. Peter, Jr.
Roger B. Peterson
Ronald J. Peterson
Francis L. Pfrimmer
Lloyd G. Phillips
Eugene L. Polderdyke
Jesse P. Pullin
Francis B. Quallen
James S. Rayburn
Merle W. Reese
Gordon A. Rice
Carl S. Richardson
Robert L. Richendrfer
Richard J. Roberts
Dorsey Robinson, Jr.
Neil H. Robinson
James J. Roche
CharlesR. Roden
William P. Rohleder
Ramon Roman Jr.
Robert A. Roquemore
Paul A. Rossano
James F. Ryan
Stephan C. Salamack
Efrain F. Sanchez
Stephen A. Sandwich
Dale F. Saunders
Peter B. Sawin
John L. Schell
Richard J. Schmidt
William F. Schrider
Ray H. Scott
Thomas R. Sellers
Jimmie R. Shafer
David F. Shewmake
William F. Shreve, Jr.
Edwin P. Simpson III
Theron, Simpson, Jr.
Robert M. Skidmore
Francis C. Slavin, Jr.
Robert R. Sloan
Paul E. Smith
Alan J. Southard
Donald R. Syring
Lloyd E. Stanton, Jr.
Ray B. St. Charles
John F. Stewart
Robert E. Stewart
Patrick L. Stevens
Richard C. Stricklin
Raymond R. Strohschein
Raymond P. Sturza
Robert R. Stutler
Francis H. Sullivan
Eugene Swidonovich
Bobby G. Taylor
Robert E. Taylor
Leonard J. Tevebaugh
Gary G. Thomas
Frank C. Towers
Louis G. Troutman
William T. Troutner
James A. Turner
Larry F. Vance
Michael D. Villarreal
Robert L. Vincent
Robert G. Volack
Kenneth E. Weadbrock
Ronald E. Webb
Tony A. Weda
Herbert D. Wells
John Whitley, Jr.
Wayne D. Wildgrube
Clarence F. Williams
Francis O. Williams
Gene R. Williams, Sr.
George E. Williams
Leroy Williams
Gaines L. Willis
Joseph C. Wilson
Hershel E. Wisdom
Stanley G. Woinoski
James E. Woodruff, Jr.
Robert L. Woodward
Billy E. Wright
Barbara A. Wynnyk
James J. Yantorn
Jere W. Yost
Kenneth W. Young
Edward M. Zerbe
Kenneth P. Zrubek

DIPLOMATIC AND FOREIGN SERVICE

John A. McKesson 3d, of the District of Columbia, a Foreign Service officer of class 1, to be Ambassador Extraordinary and Plenipotentiary of the United States of America to the Gabon Republic.

CONFIRMATION

Executive nomination confirmed by the Senate December 3, 1970:

CALIFORNIA DEBRIS COMMISSION

Col. James C. Donovan, Corps of Engineers, to be a member of the California Debris Commission, under the provisions of section 1 of the act of Congress approved March 1, 1893 (27 Stat. 507) (33 U.S.C. 661).

WITHDRAWALS

Executive nominations withdrawn from the Senate December 3, 1970:

FEDERAL METAL AND NONMETALLIC MINE SAFETY BOARD OF REVIEW

The following-named persons to be members of the Federal Metal and Nonmetallic Mine Safety Board of Review, which were sent to the Senate on September 15, 1970:

Robert N. Stewart, of Indiana, for the remainder of the term of 5 years expiring September 15, 1971.

Hugh C. Matlock, of Colorado, for the remainder of the term of 5 years expiring September 15, 1972.

Donald E. Pierce, of Idaho, for the remainder of the term of 5 years expiring September 15, 1973.

Kenneth C. Kellar, of South Dakota, for the remainder of the term of 5 years expiring September 15, 1974.

Howard L. Hartman, of California, for the term of 5 years expiring September 15, 1975.

HOUSE OF REPRESENTATIVES—*Thursday, December 3, 1970*

The House met at 12 o'clock noon.

The Chaplain, Rev. Edward G. Latch, D.D., offered the following prayer:

O praise the Lord, all ye nations: praise Him all ye people. For His merciful kindness is great toward us and the truth of the Lord endureth forever.—Psalms 117.

Eternal God and Father of us all, everywhere present and everywhere available, we wait upon Thee in this, our morning prayer. We come with humble hearts and in deep need, crying aloud for insight to see the way we should take, for courage to walk in it, and for the strength to endure even when endurance seems impossible.

As we face the trying tasks of these hurried hours, our thoughts are with those in the service of our country, particularly our prisoners of war. Grant that the sacrifices they are making for freedom may never be in vain.

Guide our Nation, our leaders, and our people through these critical and crucial times. May we learn the wisdom of the ages that only those who trust in Thee win the higher victories which will usher in the great day of justice and enduring peace.

In Thy holy name 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 without amendment bills and a joint resolution of the House of the following titles:

H.R. 471. An act to amend section 4 of the act of May 31, 1933 (48 Stat. 108);

H.R. 19000. An act to amend the act of April 24, 1961, authorizing the use of judgment funds of the Nez Perce Tribe; and

H.J. Res. 1077. Joint resolution to amend the joint resolution authorizing appropriations for the payment by the United States of its share of the expenses of the Pan American Railways Congress Association.

The message also announced that the Senate had passed with amendments in which the concurrence of the House is requested, a bill and a joint resolution of the House of the following titles:

H.R. 18679. An act to amend the Atomic Energy Act of 1954, as amended, to eliminate the requirement for a finding of practical value, and for other purposes; and

H.J. Res. 1411. Joint resolution correcting certain printing and clerical errors in the Legislative Reorganization Act of 1970.

The message also announced that the Senate insists upon its amendments to the bill (H.R. 8298) entitled "An act to amend section 303(b) of the Interstate Commerce Act to modernize certain restrictions upon the application and scope of the exemption provided therein," agrees to a conference with the House on the disagreeing votes of the two Houses thereon, and appoints Mr. MAGNUSON, Mr. HARTKE, Mr. HOLLINGS, Mr. PROUTY, and Mr. BAKER to be the conferees on the part of the Senate.