EXTENSIONS OF REMARKS

CONSCRIPTION IN EARLY AMERICAN HISTORY

HON. WILLIAM A. STEIGER

OF WISCONSIN

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. STEIGER of Wisconsin. Mr. Speaker, supporters of conscription often justify their opposition to the all-volunteer force on the grounds that the American tradition is one of a universal obligation for military service. This belief is not supported by the facts, which show that conscription is the exception rather than the rule in our Nation's history—and when the draft has been used, it has been selective and discriminatory rather than universal.

An excellent treatment of conscription in America was prepared for the Gates Commission by Jack Rafuse, of the Center for Naval Analysis. Writing of the militia tradition, Mr. Rafuse notes that—

In its origins militia service meant *home* defense in its most narrow sense. A militiaman fought in his town, or later, his state. He did not fight elsewhere. Militia conscription was never meant to provide soldiers for distant wars . . . the colonial draft was local in function and execution. It was highly selective, infrequently used, and administered by the smallest units of local government.

According to Mr. Rafuse:

During the Revolutionary War, when too few were willing to volunteer for long periods of time or at great distances, the states reluctantly resorted to conscripting militiamen to serve with the Continentals . . . However, payment of a fee, procurement of a substitute or marriage exempted a militiaman. In other words, many civilians were entirely exempt from the militia draft.

In part 1 of this paper, the colonial tradition, the experience during the Revolutionary War, and the militia structure of the early Republic are examined. I commend this item to your attention:

U.S. EXPERIENCE WITH VOLUNTEER AND CONSCRIPT FORCES—PART I

(By John Rafuse, Center for Naval Analyses)

THE TRADITION OF CONSCRIPTION

The polemics of conscription in America abound with references to history and tradition, but present little data or analysis. This paper examines American history with special regard for military manpower recruitment practices. One purpose of the study is to provide a historical survey of conscription in America and to convey some of the contextual flavor of the past debates. The second and principal purpose is to contrast the debates with factual data to permit judgment on the credibility of the debates and on the extent to which conscription is or is not in the American tradition.

The United States has used conscription to provide military manpower only in wartime or as an emergency expedient. Conscription was used during the Civil War, World War I, and World War II. Controversy and demonstration erupted each time. Since World War II there has been only one brief hiatus in the draft. The present draft has been in existence almost without interruption for thirty years. More than half of the U.S. population is under thirty so it has never known a time when there was no draft. Thus, the draft is now considered the natural state of affairs, though in 1940 such a situation would have been inconceivable to most people.

Prior to 1945, the only peace-time draft in this country was in 1940, when the world was not at peace, and when the United States had chosen sides. Europe went to war in 1939, but in 1940 conscription was one of the great political issues because the United States was not at war. On the other hand, it was argued that the international situation would not allow us to continue peacetime armed forces while other nations were mobilizing on a gigantic scale. The World War II draft was truly universal, a lottery which determined not who would serve, but rather in what order men would serve. More than half of the male population of the United States between the ages of 18 and 45 served in the armed forces during that war.

Today's draft dates from the Universal Military Training and Service Act of 1951, set up at a time when the manpower needs and economic requirements of the nation were much different from those of the 1960's or 1970's. Table 1 shows the demands made on the manpower pool over a 15-year period.

TABLE 1.—MILITARY SERVICE OF 26-YEAR-OLD MEN[1]

Year	Total 26-year-old men	Percent with military service
1958	1,100,000	70
1962	1,110,000	58
1964	1,190,000	52
1966	1,250,000	46
Projected 1974	1,870,000	[2] 42 [3] 34

[1] Reference Materials from the Department of Defense Study of the Draft, Office of the Assistant Secretary of Defense (Manpower), July 1966, p. 4a.

[2] 3,000,000 military strength.

[3] 2,700,000 military strength.

The increase in numbers of men 18 to 26 years of age means that an ever-diminishing percentage serve. Despite this the draft continues, justified by "tradition." Since national conscription has existed for only 33 of the approximately 200 years since the Declaration of Independence, it is difficult to consider the draft an American tradition.

There are those, however, who feel that the real tradition is not that of national conscription, but rather of a series of laws committing every citizen to obligatory armed service. That tradition, they feel, is longer and more pervasive. If that is so, there is an important *caveat:* in its origins, militia service meant *home* defense in the most narrow sense. A militiaman fought in his town, or later, his state. He did not fight elsewhere. Militia conscription was never meant to provide soldiers for distant wars.

Probably the most complete tabulation of colonial American militia laws shows 777 provisions (laws or parts of laws) relating to militia service.[1] The total number of laws tabulated in the volume is 608,[2] of which 200 laws, and 369 provisions concern some aspect of compulsory service. Of the 369 provisions one-third (122) were delegations of authority. The remaining provisions (247) are the only ones which contain elements of compulsion, and not all of those compel citizens to serve. Further, all those laws which are compulsive also contain exemptions or exclusions.[3] In addition, several laws without provisions of compulsion increased the number of exemptions or exclusions from service. In all there were 200 laws with elements of compulsion, but 213 exempting classes such as: legislators, church officials, college faculty and administrators, Quakers, justices of the peace, doctors, lawyers, and mariners; lunatics, slaves and Papists.

The quantity of legislation reveals little, since every settlement was a separate colony with separate laws, and since no law is reenacted if it is effective as it stands. Colonial laws, once enacted, were seldom repealed though they were frequently reanacted with modifications.[4] The quantity of colonial enactments demonstrates that earlier laws were ignored or abused. Enactment and repeated reenactment of laws, with exemptions for some, and ever-stiffer penalties for others, demonstrate that neither the letter nor the spirit of the compulsive legislation was observed. Lacking and not needing unanimous participation, the ruling body in each colony tried to force some people to serve while others were exempted. The settlements grew and combined to form the familiar thirteen colonies. At the same time, the frontier dangers became more distant, and the effectiveness of the militias and the laws of the individual settlement lessened. Muster days became less frequent and turned into local festivals. During the eighteenth century British-French wars for empire, North American colonists beside sometimes fought British regulars. However, the colonial militias proved largely unfit for distant campaigns. There were exceptions, but they were few. The militias were called upon to provide men not because of their battle-effectiveness, but because they were the only semi-organized and orderly source of wartime manpower. One historian has said:

The militia proved less useful when they were not fighting directly and obviously in defense of their own homes. The New England expeditions that took Port Royal in Acadia in 1690 and 1710—facing weak opposition—and the famous expedition that seized the fortress of Louisbourg in 1745—despite much stronger opposition—were exceptions. In general the colonial militias were not a reliable instrument of offensive war distant from their own firesides.

The reasons are evident. Few men came to America to be soldiers. More likely, they came in part to escape soldiering. They would fight when they had to, to preserve the homes and farms and way of life they had crossed the ocean to find. But they did not wish to abandon homes and farms for months or a season, to go off soldiering in pursuit of objects only remotely connected with their own aspirations or security. Militia training did not prepare them for extended campaigns, nor did militia organization befit the maintenance of long expeditions. A long campaign to distant fields that also involved meeting Indian tactics of stealth and ambuscade was a campaign for which colonial militia, except units recruited from frontiersmen, were especially unsuited. When the French and Indian War demanded such campaigns, the militia system did not suffice. Therefore regiments of the British regular army appeared in America, to fight the French and their Indian allies and to add their contribution to the influences that were to shape the United States Army.[5]

Thus, the militia draft cannot be used as a parallel for the present draft. The purposes of the militia were completely different from the missions of today's army, and so discipline, term of service, code of behavior, means of advancement in rank, effectiveness of the force, and role of the organization in the community were all different. The colonial "draft" was local in function and in execution. It was highly selective, infre-

Footnotes at end of article.

quently used and was administered by the smallest units of local government. To speak of militia conscription as a precedent or as a part of a continuing American tradition is to misunderstand the similarities which exist and ignore the differences.

THE AMERICAN REVOLUTION

In the decade before 1775 there was a trend toward some degree of colonial unity, but it should not be overstated. Prior to the revolution, colonial militia units had cooperated with each other and with British troops from time to time, but that was the extent of colonial military experience. Much of the manpower procurement difficulty General Washington encountered in the American Revolution was due to the militia tradition, to the lack of Congressional power to follow another course, and to the individual's lack of national consciousness. Men considered themselves citizens of a state, not citizens of the United States. The United States were united in approximately the same way the members of the Organization of American States are today. The term state meant nation not merely division of a nation as it has come to mean. The United States was an alliance in a common war, not a nation.

When the Second Continental Congress assumed control of the war effort in June 1775, it appointed Washington Commander-in-Chief. However, that Congress had very little centralized authority or power. The power had been retained by the individual colonies and colonists felt they were fighting against centralization. Congress could only recommend and hope for cooperation. The recruiting and supply difficulties encountered by the Continental Army are better understood in this context. Washington was forced to rely on separate colonial militias. These drew on a small, scattered manpower pool. The male population of the colonies was approximately 1.5 million, of which perhaps 250,000 were slaves and at least 250,000 more were Tories who opposed the revolution in varying degrees, and others were simply indifferent or were conscientious objectors. According to John Adams' estimate only about one-third of the colonists favored the revolution. We refer to them as patriots today, but the choice of allegiance was obviously a hard one, and the difficulty did not end once the choice was made. Contrary to current popular belief, volunteers did not swarm to the Revolutionary cause or drive out tyranny in an explosion of patriotic fervor.

In fact, Washington requested militia drafts and relied frequently on militia. Of the 396,000 enlistments of the Revolutionary War, 164,000 were short-term militia enlistments. They varied from a few hours to six months, with the majority for three months or less. The remaining militia enlistments included all reenlistments. Most Continental Army enlistment terms were for one or two years, though fighting from 1775 through 1781. Many men reenlisted one or more times, so that the total number of individuals who actually served in the Continental Army might be as low as 50,000 to 100,000 men. The Army was never larger than 47,000 at any one time, and was much smaller during most of the war.

Washington's 50,000 volunteers would be roughly equivalent to 3,500,000 today and 100,000 would be equivalent to 7,000,000 based simply on the fact that today's U.S. population is 70 times what it was in 1775. For later wars, this type of comparison can be more accurate. Such a computation assumes that all other things are equal; soldier's pay, popular view of the cause, and psychic compensation, etc., are all held constant.

The pay of a Continental soldier was not sufficient to support a family. For example, in 1780 Continental soldiers were paid $6.66 per month in paper: enough to buy a pound of mutton, a half-pound of coffee, 19 eggs or two loaves of bread.[6] Congress never changed the pay of troops during the Revolution, but it did vary enlistment bounties with time and need. The inducements to recruits were not as attractive as the options open to civilians, but the variations in bounty meant that efforts were made to lessen the economic penalty against service. Nonetheless, "The officers recruiting for Continental soldiers had much less to offer than the Militia recruiters, with their short-term enlistment and high bounties, or the privateersmen, with their glamorized booty inducements."[7] John Paul Jones complained about the situation as vociferously and frequently[8] as did George Washington. Congress officially disapproved of bounties on December 6, 1775 when American troops were paid more than European regulars. But, by June, 1776 (when some colonies offered bounties of $150 specie) Congress authorized a Continental bounty of $10 scrip. Subsequently the Congress provided for bounties of $20, then $80, $100, and $200, in addition to land grants, clothing and pensions.

Congress periodically recommended short-term militia quotas to each state. When too few were willing to volunteer for long periods of time or at great distances, the states reluctantly resorted to conscripting militiamen to serve with the Continentals. This was the militia draft. However, payment of a fee, procurements of a substitute, or marriage exempted a militiaman. In other words, many civilians were entirely exempt from militia obligations and many militiamen were exempted from the militia draft: a second set of exemptions saved them from "federal" service.

MILITARY LEGISLATION AFTER THE REVOLUTION

After the Revolution, American policy was to maintain the smallest national military establishment possible. By 1784 Congress had reduced the Army to 80 men and placed full reliance upon the militias. Under the Articles of Confederation, the lack of central authority perpetuated the separate states, rather than the United States.

The new Constitution gave Congress the central authority and the power and right to raise and support armies and to provide and maintain a navy. Congress was separately authorized to organize, arm, and discipline the militia, and call it to suppress insurrections, *repel invasions*, and enforce the law. Officers and militia training, on the other hand, were to be provided by the individual states "according to the discipline imposed by Congress."

The Constitution replaced the previous confederations with a central government. However, the double military system adopted because of tradition and lack of centralization during the Revolutionary War was perpetuated under the Constitution. The central government held the authority to maintain professional forces, but the separate states retained compensatory power in the militias. The power was checked and balanced between the federal governmnet and the states, and so the competition between the two continued.

An Act of April 30, 1790,[9] recognized the established federal military service, as opposed to the state militias. The militia was defined to include every able-bodied man, and the President was authorized to call the militia into service. The law and the practice were two different things, however.

The Knox Plan—Universal Militia Service

At the same time, to strengthen the defense of the United States, Washington's Secretary of War, Henry Knox, submitted to Congress a plan for universal militia training, with only ". . . such exceptions as the legislatures of the respective states may think proper to make, and all actual mariners . . ."[10] All 18- and 19-year-olds would train for one month, and 20-year-olds for 10 days, each year. This "Advanced Corps" would constitute the first line of defense in war and would be unpaid. At 21, each soldier would be given a certificate of attainment of full citizenship. Because citizenship and service were linked, and service was to have been universal, the Knox Plan did relate the "right" and "duty" to bear arms.

Under the Knox plan, the militias would have been divided into sections, which would respond to requisitions for men to form an army for state or federal purposes. In a rebellion or war, Advanced Corpsmen who had been requisitioned could be moved anywhere within the United States while the Main Corps (all men between 21 and 46) would be called up. The Reserve Corps (men 46 to 60) would be called only when the Advanced and Main Corps had been exhausted. Knox would have broadened the role of the militia but kept it at home. Though President Washington actively endorsed it, the plan never became law. The only American armed service proposal which combined universality with the right and duty concept remains merely a discarded idea.

In 1792, the Uniform Militia Act was passed. It stated that "each and every free, able-bodied, white, male citizen" should be enrolled in the militia. Intended to establish uniformity and universality among all the state militias, the law divided responsibility several ways. Free, white men, 18-to-45 years old, were to furnish their own kit and enroll in the local militia unit. States were to appoint the officers and to reach the agreements necessary to achieve true uniformity. Congress held no compulsory power of enforcement. This act remained on the books until 1903. Even today the law states that all male citizens between 18 and 45 are a part of the militia. The words mean no more nor less now than they did in 1792, though some people find in them proof of the tradition of obligatory service.

Through the 1790's and early 1800's, the American military establishment fluctuated in size with the pressure of the foreign affairs, but the basic theory remained the same—maintain only the smallest possible federal standing force, to be reinforced by militia units in crisis.

FOOTNOTES

[1] Selective Service System Special Monograph No. 1, *Backgrounds of Selective Service*, 2 volumes, Washington, D.C., 1947. Volume II, *Military Obligation: The American Tradition*, p. 15 contains the table.

[2] *Ibid.*, pp. 34–69 lists, but does not count, the laws.

[3] For example, though Pennsylvania has eight provisions concerning compulsion, that Quaker colony never had compulsory militia service.

[4] *Op. cit.*, Vol. 1, *A Historical Review of the Principle of Citizen Compulsion in the Raising of Armies*, p. 34.

[5] Russell F. Weigley, *History of the United States Army*, New York, The Macmillan Company, 1967, pp. 11–12.

[6] Prices taken from U.S. Department of Labor, Bulletin of the United States Bureau of Labor Statistics No. 604: *History of Wages in the United States from Colonial Times to 1928*. Washington, Government Printing Office, 1934, p. 18.

[7] Lt. Col. Marvin A. Kreidberg and Lt. Merton G. Henry, *History of Military Mobilization in the U.S. Army 1775–1945*. Department of the Army Pamphlet No. 20–212, Washington, D.C., GPO, 1955, p. 14.

[8] Samuel Eliot Marrison, *John Paul Jones*, pp. 34–35, 66–72, discusses the problem, then quotes Jones' thoughts on pp. 66–67.

[9] The Act detailed the size and organization of the army and its pay. John F. Callan, *The Military Laws of the United States*. Philadelphia, 1863, pp. 85–86.

[10] *American State Papers*, 1789–1790, Vol. I, *Military Affairs*, contains the Knox Plan, pp. 6–13.

SUSPENSION OF DAVIS-BACON ACT, AND SOME INTERESTING FACTS ON CONSTRUCTION WAGE RATES FROM THE ST. LOUIS CARPENTERS DISTRICT COUNCIL

HON. LEONOR K. SULLIVAN

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mrs. SULLIVAN. Mr. Speaker, the House later this week is to take up the bill, H.R. 4246, to extend standby powers of the President to stabilize wages and prices, and to extend the authority of the Federal Reserve Board and the Home Loan Bank Board to establish flexible interest rates on time deposits.

This bill was reported last Friday by the Committee on Banking and Currency after a rollcall vote of 30 to 3. What was an extremely controversial measure when recommended by our committee last year, and was bitterly debated last July 31 on the House floor, now appears to be largely noncontroversial. Secretary of the Treasury John B. Connally testified before us on February 23 that the administration is now willing to "accept" section 2 of the bill dealing with standby price and wage control authority, even though the President had denounced us for giving him this power last year. But Secretary Connally added that the President has no intentions under present circumstances of establishing "general wage-price controls without a specific mandate from the Congress."

However, in answer to questions, the Secretary said that while there were no present plans for a general price and wage freeze without further mandate from Congress, he did not "rule out—I don't rule that out at all" that it might be used in a specific situation such as in the construction industry. This was in response to questions dealing with then-current newspaper articles that a wage-price freeze in the construction industry was imminent.

To our surprise, the President that afternoon announced not that he was invoking price and wage controls in the construction industry, but instead was suspending the Davis-Bacon Act, which provides for the payment of prevailing wages on government construction projects.

QUESTIONABLE EFFECTIVENESS OF SUSPENSION OF DAVIS-BACON

As a result of the President's action on Davis-Bacon on February 23, our subsequent hearings on the price-wage control legislation that week included numerous references to the Davis-Bacon Act action, and the questionable effectiveness of such a step in combating inflation.

In fact, Mr. William E. Dunn, executive director of the Associated General Contractors of America, the major trade association in the heavy construction industry, said the President's action in suspending Davis-Bacon "may have some benefit in years to come but it will certainly not stop the terrible inflation with which we are now confronted." Mr. Dunn stated that, in his opinion, Davis-Bacon should have been repealed or suspended "years ago", terming it a depression-era statute. A question of mine then led to the following colloquy:

Mrs. SULLIVAN. If the suspension of the Davis-Bacon Act will have no real effect on construction in the major industrial centers, where will it have any consequence—only in the areas where wage rates are already much lower than the national average?

Mr. DUNN. I think it will have effect in those areas that border on the industrial areas. We have kind of analyzed it this way, Mrs. Sullivan.

In the metropolitan areas like New York, Chicago, San Francisco, Boston, the union agreement will take care of the rate that will be paid regardless of what the Government says.

In the South where it is largely open shop and in the South and Southwest very much it will be the prevailing rate regardless of the Davis-Bacon. But in the inbetween you will find the Mason-Dixon line area, I think in the areas away from the metropolitan area, and the gray area, you will find it will have some difference.

There will be difference in competition and there might be some strong reaction to it. That is where it will have some effect.

Let me make one thing clear. It will have no effect on the increases for 1971 anywhere, anyplace, and we expect $1 billion inflation increase; $1 billion in our industry will go up in inflation or down in inflation. It will be wasted unless the controls are put on this year and Davis-Bacon will take hold 2 or 3 years from now.

DECLARATION OF A NATIONAL EMERGENCY

Mr. Speaker, I am not a lawyer and would make no attempt to judge whether the President had the power he claimed on February 23 to suspend the Davis-Bacon Act. The act provides that it can be suspended by the President "in the event of a national emergency." A footnote in the United States Code Annotated indicates that this act could have been suspended between the time of President Franklin D. Roosevelt's proclamations of national emergencies on September 8, 1939, and May 27, 1941, prior to our entrance into World War II, and the enactment of a joint resolution on July 25, 1947, terminating any state of war or national emergency. However, despite our involvement in the greatest war in history, Davis-Bacon was not suspended during that time.

According to the Department of Labor, the only time it was suspended, prior to February 23 of this year, was during a period of about 24 days in 1934 when President Roosevelt suspended it in order to clarify contradictory provision of this act and of the National Recovery Act.

What puzzles me is that in announcing his suspension of the Davis-Bacon Act, President Nixon referred to "emergency conditions in the construction industry," although in his proclamation he found that "a national emergency exists within the meaning of section 6 of the Davis-Bacon Act of March 3, 1931."

I think many people will question whether "emergency conditions in the construction industry" which are not serious enough to warrant the imposition of a price-wage freeze under the standby authority we gave the President last year to fight inflation can nevertheless constitute a "national emergency" for the purpose of suspending a law providing for fair wages on Government construction work. But, Mr. Speaker, as I said, as a nonlawyer I would certainly not consider myself qualified to make that judgment. But the circumstances do puzzle me.

LETTER TO PRESIDENT NIXON FROM ST. LOUIS CARPENTERS DISTRICT COUNCIL

I was prompted to look into this background, Mr. Speaker, on receipt today of a letter from Mr. Ollie W. Langhorst, executive secretary-treasurer of the Carpenters' District Council of St. Louis enclosing a copy of a letter he had written on behalf of the Council to President Nixon.

Mr. Langhorst told me his union members feel that if the President does not choose to use the power given him by Congress to invoke wage, price and profit controls in emergency situations, but chooses instead only to suspend protections on construction workers' wage rates on government contracts, then perhaps Congress should not extend the price-wage control authority. I disagree with that position—I think the standby controls should be continued. However, many of the points made by Mr. Langhorst in his letter to the President are extremely thought-provoking and worth reading by every Member of Congress for the information his letter imparts. Under unanimous consent, therefore, I include it as part of my remarks, as follows:

CARPENTERS' DISTRICT COUNCIL OF ST. LOUIS, UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA

(Affiliated With the American Federation of Labor)

ST. LOUIS, MO., *March 3, 1971.*

President RICHARD M. NIXON,
The White House
Washington, D.C.

DEAR MR. PRESIDENT: As a result of your proclamation suspending the Davis-Bacon Prevailing Wage Provision on all Federally financed construction projects, I, as the Executive Officer of the Carpenters' District Council of Greater St. Louis, have been instructed by our membership to voice our objections to your action.

Recently, the Federal Government has been putting a great deal of pressure on Building Trades Unions because of alleged discrimination (employment of sufficient numbers of Minority Group workers). Yet, your action against the construction unions is precisely the same thing in reverse—discrimination against the construction unions (a minority group).

If you are serious about controlling inflation, why didn't you use the power granted to you by Congress to control prices as well as wages in an emergency situation, which you have said this is? This would have at least affected everyone equally.

We object to the fact that your action does not prevent contractors from bidding on Federally financed projects at the rate of four, five, six or seven dollars per hour for construction labor, and then, should they get the job, turn around and actually pay non-union "scabs" the minimum wage of $1.65 per hour thus allowing the contractor to pocket a handsome profit.

Your order will only enhance the position of non-union contractors and other "fly-by-night" unions who are working hard to destroy the decent wages and conditions that it has taken our unions many years to build up. Allowing this to happen would be like operating the Government in 1971 with a 1776 Congress.

You are continually referring to construction labor rates as being inflationary, but, at the same time, Department of Labor figures indicate differently. The average construction worker puts in only 1200 hours per year versus 2080 hours per year for the average factory worker. Any advantage in hourly wages by building tradesmen is more than offset by fewer hours work per year.

Although you have placed heavy emphasis on the idea that wage increases in the construction industry are adding considerable fuel to the fires of inflation, the following table shows construction workers are actually *lagging* in take-home pay compared to auto, oil and chemical workers.

Industry	1964 annual earnings	1970 annual earnings	Percent increase hourly earnings
Construction workers	$6,579	$9,822	49.3
Motor vehicles	7,814	10,393	33.0
Petroleum refining	8,447	11,175	32.3
Chemical workers	7,717	10,279	33.2

It must also be taken into consideration that construction workers face extreme hazards every day that industrial and white collar workers do not have to contend with. Surely there must be some extra compensation for these hazards.

Comparing construction wages with another group closely associated with the Presidency, namely government employees, Department of Labor figures show that federal employees have fared better than construction workers between 1964 and 1970.

In 1964 a construction worker employed on general building construction earned an average of $6,579. A government employee with comparable earnings was a grade 8 who earned $6,390. By 1970 the construction worker was averaging $9,822 while the grade 8 government employee had jumped to $10,152. Putting it another way, the construction worker in 1964 earned $189 more than the Grade 8 government employee. In 1970 the construction worker's annual earnings were $330 *less* than that of the government employee.

A recent article in the *Wall Street Journal* reiterated what the Building and Construction Trades have stated repeatedly in recent years, namely that wages are not the primary cause of higher construction costs. You cannot overlook the high cost of materials, interest rates, land values, contractors and real estate profits. The percentage of increase for these costs is higher than those for labor. This further substantiates the fact that your action is discriminatory.

Unfortunately it appears that the construction industry one again may become a convenient "whipping boy". We get the feeling that political considerations outweigh economic ones in this Administration's thinking.

You have often made the point, Mr. President, and we agree, that labor unions are among the strongest organizations in this country. We take that as a compliment, because the labor movement truly represents the people—all the people, not just union members—of this great nation. As Mr. George Meany once said, Organized Labor is the "people's lobby." Your act, Mr. President, will only work to weaken a link in our society that has worked hard to preserve the American way of life. We have watched as police and law enforcement agencies in our cities have been weakened by government actions and Supreme Court decisions. This union-busting tactic is punching yet another hole in the fabric of our society. Such holes make it easy for extremist groups—including Communists—to rush in and work that much harder in their disgusting efforts to destroy our society. We cannot in all good conscience, stand by and see that happen.

Destroy America's unions and you have destroyed the only major viable force working for the average American.

These are the objections voiced by our Council Delegates at our meeting on February 23, 1971. As requested by the Council copies of his letter have been sent to Missouri Senators and Representatives and signature sheets of the Delegates are attached. These delegates represent over 11,000 union carpenters in the Greater St. Louis area. We trust that you will seriously consider these objections and rescind your proclamation order.

Mr. President, you came too late with too little!

Sincerely,

OLLIE W. LANGHORST,
Executive Secretary-Treasurer.

HE SHOT STRAIGHT

HON. ANCHER NELSEN

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. NELSEN. Mr. Speaker, Alan C. McIntosh, contributing editor of the Star-Herald, Luverne, Minn., has written a real "corker" of an editorial about our former colleague, Congressman Ben Reifel. I know many will find it of great interest, and I include it in the RECORD at this point in my remarks:

HE SHOT STRAIGHT AND COURAGEOUSLY

The average newspaperman doesn't have many heroes.

Why?

Because he has seen too many glamour personalities concealing feet of clay.

We have a hero . . . who is an inspiration in these days when there is an over supply of demagoguery and a shortage of integrity.

There are too many of us who think of ourselves and our future well being first and our country last. He always thinks of America first.

Our nomination for one of the great men of America is former South Dakota Congressman Ben Reifel.

He talks and thinks as straight as a Winchester.

The "pop" song "you've come a long ways, baby" applies to Reifel.

While others sit on their rockers and cried themselves to sleep with self pity and burning resentment at America Reifel had gone from a South Dakota log cabin to a doctorate at Harvard and a seat in congress.

He remembers his Indian grandmother who never gave in to the white man's ways. She ate all her meals sitting on the floor.

There was no farm door busing to school for the Indian youth. He walked. He had to leave the reservation to attend high school 250 miles away.

He never felt downtrodden or poor.

Right now it is socially and ideologically "in" to weep and wail for the "poor Indian."

Reifel comes in conflict with some of the most violent of the red militants.

"The Indians had this whole country for 25,000 to 30,000 years and yet never had more than one million persons," he said, "and if that is ecology and if that's life, natural balance, I don't want it.

"Very few of our people are really exercising the advantages available to them under the establishment."

Reifel is all for having the Indian adopt the white American's "time work savings syndrome" and future orientation.

Many of us have grown up believing the myth that the Sioux were the mightiest, the most courageous, the most advanced of all the tribes. Reifel sets the record straight on that. The Sioux were woodsman people in Wisconsin. Then the Chippewas got guns and power while the Sioux continued as bow and arrow people, no match for the Chippewas. They conquered the horse and then the buffalo, he said, then transferred their religion to the sun.

Reifel says Indians today must adapt themselves as the tribes of old did . . . and they must turn their backs on the past if they are to succeed and survive.

Unlike so many who never know when to quit the Indian congressman, who had left such an indelible mark on South Dakota for integrity and courage, called it "finis" at the age of 64.

He will be long remembered . . . another hero who shot straight, who didn't talk with "forked tongue" and whose integrity was 18 karat.

His success in life . . . starting from a barren, wind swept, lonely reservation to success should be an inspiration for any youngster and a rebuke to those minority cry babies who moan they "never had a chance."

It was a loss to South Dakota and America when former Congressman Reifel retired from political life.

THE MEDICAID PROGRAM

HON. JEROME R. WALDIE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. WALDIE. Mr. Speaker, the medicaid program continues to be the subject of significant controversy in many States. The program in California has been embroiled in continuing crisis. I would like to submit to my colleagues some comments recently made on this subject by Dr. George Degnan, medical director of Contra Costa County Medical Services. His suggestion for a prepayment plan is worthy of note because of his long experience with health-care services. I find Dr. Degnan's comments exceptionally interesting in the light of the prospective reimbursement plan for medicare and medicaid now before the Congress.

Dr. Degnan's comments follow:

Medicaid and Medi-Cal have recently and repeatedly made the following statements to their fiscal crises:

"We must find ways to close this open ended contract.

"We must find a means of creating incentives for economies.

"We must find alternatives in the method of delivering health services."

I would like to respond to the above challenge.

I am prepared to negotiate immediately a contract on a capitation (pre-payment) basis with the State and Federal Government. This would accomplish the following:

1. Close the open ended exposure of the Federal and State Government under the present system, because obviously their commitment would then be limited under such a prepaid arrangement.

2. Sponsor built-in economies on the part of the vendor as he will be only receiving so much per head to keep people well.

3. Promote new methods in getting people well and keeping them well. The Fee-for-Service System neither promotes nor allows for prevention. The Fee-for-Service System offers no award for health maintenance.

4. Initiate comprehensive care philosophy, and consider the patient always as a whole. Fee-for-Service meets the needs not the demands and thus only considers a part of the patient.

5. Offer a challenge to the medical industry to come up with new methods in delivery. Our success on a capitation contract would pressure the medical care indutry to negotiate beyond just the amount of the fee.

6. Avoid a large expenditure in paper work required in itemization and billing in the Fee-for-Service System.

According to Medi-Cal records our County Medical Services give a more comprehensive (liberal use and choice of drugs, appliance, etc.) at 30% less cost than main stream.

In other words, we can offer for less cost a more comprehensive program including the promotion of health than presently available elsewhere in the present system.

This is not a dream. This is what we are doing.

CINDY GOATLEY WINS ARKANSAS VOICE OF DEMOCRACY CONTEST

HON. JOHN P. HAMMERSCHMIDT

OF ARKANSAS

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. HAMMERSCHMIDT. Mr. Speaker, it is with much pride that I place in the RECORD today a speech by a fine young constituent who has won the annual Voice of Democracy contest in Arkansas, sponsored by the Veterans of Foreign Wars and its Ladies Auxiliary.

Miss Cindy Goatley of Harrison, will represent my State in the national competition in Washington.

I commend to your attention her speech on the contest theme, "Freedom—Our Heritage."

The speech follows:

FREEDOM—OUR HERITAGE

(By Cindy Goatley)

Leading America through our blackest pages of history is freedom. She shines as a beacon in an oppressed land; she rises tall above the highest mountain; she encompasses the area of the world; and she leads our country with the bearing of greatness. Freedom has been shouted and sought in every nook of the earth. Where oppressed, she seeks to rise again, and where accepted, rules with dignity. We Americans are blessed with her presence. Our ancestors have sought and found her, died painfully for her, but been rewarded, and walked hand in hand with her through the ages. But some of us do not realize the implications of freedom. Some of us do not realize its cost and its need for preservation. Before these statements are considered, one question must first be answered: What is freedom?

Liberty, democracy, free, independence: all these ideas compose a small portion of freedom. Webster defines freedom as a state of not being subject to an arbitrary external power. This positive concept of freedom, literally practiced, would lead to anarchy, and the triumph of the strong over the weak. We cannot call this freedom; because, tyranny, triumph of the strong over the weak, is the very idea that was opposed so violently in our Declaration of Independence. Oliver Ellsworth, a proponent of the Constitution of 1787, declared that "those who wish to enjoy the blessings of society must be willing to suffer some restraint of personal freedom." This must be true, because the world is not composed of individuals, but of organized societies who exist together in an intricate network of specific relations between their freedoms. Freedom in a democracy should not be defined as doing as one desires, but as a relationship between the varied desires of different human beings. As has been said many times before, my freedom ends where yours begins.

Why do some Americans today not realize freedom's actual worth or its cost? This is, in essence, answered by the simple fact that we did not have to fight or die for our freedom. We were born with it and assume it will always be there. The early Revolutionists felt very deeply about freedom. Thomas Paine wrote, "It is dearness only that gives everything its value. Heaven knows how to put a proper price upon its goods; and it would be strange indeed if so celestial an article as freedom would not be highly rated." Yes, freedom was rated highly. It was valued above all other possessions, therefore its price is high. How else could troops of untrained Revolutionaries numbering 12,000 men, defeat the mighty British soldiery numbering 18,000? Everything was sacrificed for our freedom, thousands died, acres of property were destroyed, so very much was suffered, but endured!! How firm the dauntless Revolutionaries remained in their endeavor! All this so that the bright beams of freedom might pierce the darkness of tyranny forever. As Nathaniel Niles wrote in a poem:

> "Life for my country, and the cause of freedom,
> Is but a trifle for a worm to part with;
> And, if preserved in so great a contest,
> Life is redoubled."

The observing eyes of the world are upon our nation.

They are watching us and waiting to see if we can govern ourselves and remain free. All despots await, prepared for action, ready for the moment our intricate structure begins to crumble, and when we are, in actuality, unfree. At this time, they will dethrone freedom and drag the chains of oppression across our soil. This day must never come! America is too great for any such catastrophe to undo that which all men for hundreds of years have been fighting. Our forefathers have struggled too hard to allow any one nation to destroy the hand of freedom. The people are the hope of a nation, especially our nation in which all power is vested in the people. Only we can seek to preserve freedom. She is not indestructible; but then, neither is life.

I have discussed freedom: its meaning and its greatness. I have attempted to realize the cost and worth of freedom and its need for preservation. May we all come to full realization of the joy of freedom, as it is almost as great as the gift of life. Soon may we feel as strongly toward it as did the great Thomas Jefferson who wrote of America:

> "Its soul, its climate, its equality, liberty, laws, people, and manners. My God; how little do my countrymen know what precious blessings they are in possession of, and which no other people on earth enjoy."

HUNTING FROM AIRCRAFT

HON. GLENN M. ANDERSON

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. ANDERSON of California. Mr. Speaker, I am today introducing legislation designed to prohibit the shooting of wildlife from an airplane.

This piece of legislation would have the effect of putting an end to one of the most unsportsmanlike practices known to mankind—the hunting of wildlife from aircraft.

According to experts, there are only 5,400 of all species of wolves to be found on the North American Continent. Of that number, 5,000 are to be found in Alaska. In the past 4 years, approximately 1,000 wolves per year were killed in Alaska alone, and in 1968, one-third of that number were killed by airborne hunters.

Some species of the wolf have been classified as an endangered specie by the U.S. Department of the Interior. Yet, we continue to allow bounty hunters to kill and deplete the remaining wolves by shooting them from aircraft. In the past 5 years, hunters in Alaska have killed more wolves than now exist in our entire country.

It is obvious, I think, that there are many people who sincerely question the "sport" of shooting any animal from an aircraft. Anyone interested in preserving wildlife; anyone with a sense of fairplay, will grant that killing animals from an airplane is hardly legitimate sport.

This bill does not prohibit research by university or other qualified personnel, nor does it make it unlawful for authorized agents to use an aircraft in carrying out their regular duties in protecting land, water, and wildlife.

Mr. Speaker, we have an obligation in this country which we have not lived up to very well in the past to protect and preserve for future generations every species of animal which has inhabited this land. It has been estimated that before the age of civilization, species became extinct at a rate of one per thousand years. Today, the rate is one lost specie every year, for mammals alone.

I feel that this legislation will do much to protect wildlife and preserve our remaining animals for future generations.

SST: BOOM OR BUST?

HON. WILLIAM L. HUNGATE

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. HUNGATE. Mr. Speaker, the following article on the SST from Trial magazine January–February 1971, should be of interest on this current controversy:

SST: BOOM OR BUST?

With the ultimate fate of the SST still uncertain, vague hints are surfacing that the nation's airlines, already plagued by financial difficulties and declining patronage, would breathe a guarded sigh of relief if they were not compelled by competition to make the heavy financial outlay required for the "beasts of the sky."

These hints take various forms: the president of one major line describes the Anglo-French Concorde SST as a "financial loser"; another airline hedges on contracting for the Concorde by demanding a whole new battery of safety tests; a third line considers reducing the number of flights on some 'cream puff' routes because of drastic drops in patronage; yet another carrier reveals plans to reduce its fleet by public sale of some of its medium-range aircraft.

RACE RELATIONS: A NEW MILITARY MISSION FOR THE NEW AMERICAN REVOLUTION

HON. JOHN R. RARICK

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. RARICK. Mr. Speaker, change has now befallen the Army in keeping step with the machinations of the new American revolution. Instead of training men for combat to defend our Nation and people, they are now to undergo compulsory indoctrination in social justice for the benefit of the politicians.

Apparently those in charge do not feel an American is qualified to serve his country unless or until he first understands equality and brotherhood. The training schedules will be redrafted to include basic training and drill in race relations by the numbers. Apparently it does not matter to some whether our soldiers are trained to shoot; they must be unprejudiced.

Many will recall that the Russian and German Armies had dual command officers; that is, officers for the combat mission and officers for political indoctrination of the troops. In the German Army it was the SS, and in the Russian Army it is an ideological commissar whose duty is to see that the Russian soldiers must constantly be reeducated to the works of their glorious Communist leaders. Most impartial observers have always considered that the psychological officer's principal objective was to check morale and—by brainwashing as to the political system—prevent a military backlash or coup.

Yet, as the United States is faced with the most serious threat ever to our people, our leaders give us a Kerensky-like army by denying our men their first amendment freedom of association—which under their constitutional oath they have sworn to preserve and defend. As soldiers they are to be ordered to forgo their freedoms and submit to brainwashing.

These leaders would have us believe they advocate a volunteer army. Who would volunteer? The Peace Corps and VISTA idealists? Flower children? Peace workers for a peaceful army?

Mr. Speaker, if it were not so serious, the desecration of the military by the new American revolution would be hilarious. A soldier will be subject to court martial for insubordination in disobeying an order to love.

We must remember what has happened in history to politically dominated armies.

Just wait until our young men learn that if they exercise their first amendment freedoms that they are sworn to defend, then they are disqualified for military service. One wonders how many hours of sensitivity training they must undergo without giving up their freedom before they can be classified as unfit for military service. Perhaps we need a new draft classification of 1-F for first class free men—those who reject brainwashing and choose to retain their constitutional rights.

It will not be necessary for free men to go to Canada or Sweden to avoid military service. They need only tell their commanding officer they believe in the right to discriminate and intend to exercise their freedom.

And the political leaders think race relations offers a solution to the race problem in the military. What white man would not resent being ordered to attend classes on "The Black Soldier in History," being told that black power is but a legitimate process to gain economic benefit and political power for another minority; and that the Afro haircut and dress are but evidence of this group's unity. Military duty is bad enough without troops being ordered to believe that which they know is false.

There will be no solution to the race problem in the military because many of those in command do not even understand the problem. Rather than solve the problem that they refuse to comprehend, they would only exacerbate it by political solutions at the expense of losing the army. What man can respect or have confidence in any officer or commander whose commands are false?

If there are those black soldiers who do not want to be white, there are also white soldiers who do not want to be black. If it is an alternate solution they want, why not provide for separate racial units where each race can be with their own kind. Let them compete against each other as identified units rather than in disharmony among each other.

Segregation? So what if it gives our country back an effective fighting force instead of converting the military into a compulsory civil rights task force. Time will tell but time we do not have for political games.

I insert several newsclippings:

[From the Washington Evening Star, Mar. 6, 1971]

RACE RELATIONS PROGRAM SET FOR ALL IN MILITARY

(By Thomas A. Johnson)

"The military's job is to fight and not to lead social revolutions."

This has been a common argument of professional soldiers who opposed the moves, during the late 1940's, to integrate black and white servicemen.

But a Department of Defense move yesterday—announcing a compulsory education program in race relations for the entire U.S. military—put the armed forces even deeper into a leadership role in this particular American social revolution.

And the all-important reason for the move was simply that if the now heavily integrated American military is to be prepared to fight a foreign enemy, it must first solve internal racial difficulties that have plagued the services at home and overseas for the last three years or so.

AIM SET FORTH

In a telling paragraph, Defense Secretary Melvin R. Laird declared yesterday that: "The primary purpose of the program . . . is to achieve a more harmonious relationship among all military personnel so that organizational efficiency and combat readiness will not be impaired by racial unrest, tension or conflict."

The Department of Defense program, which also includes setting up a permanent defense race relations institute, points up the integral roles played by an 11 percent black minority in the services and a "turnabout" in racial attitudes on the part of young blacks serving in today's armed forces.

The re-enlistment rates of black enlisted men usually run two to three times higher than that of whites, so that about one out of every four Army sergeants first class is black and two out of three Army basic training drill instructors are black. While black officer recruitment rose sharply during the early 1950's, it has fallen off in recent years because of competition from industry for black college graduates.

NEW ATTITUDE ARISES

But it was a new attitude on the part of young black draftees and enlisted men that brought first the military's racial difficulties and now the military's race relations education program and the institute.

The new young black soldier was not yet in school when the U.S. Supreme Court decision of 1954 outlawed segregation in public education. Television, with its incomparable capacity to raise expectations, was his babysitter and he grew to young adulthood during a time of protest demonstrations, bombings, riots and subsequently, the near-religion of the new black consciousness.

The young black took his experiences into the military, a functionally integrated establishment that had wide vestiges of institutional racial discrimination. He objected immediately, vocally and often violently to what he found.

Racial brawls—some resulting in deaths—erupted at bases at home and around the world.

SOLUTIONS ATTEMPTED

An irregular patchwork of attempted solutions followed. On one hand, the military set up race relations councils, special investigations and equal opportunity enforcement officers to settle race-related problems. On the other, field commanders tried to use special discharges, pretrial confinement in the stockade and transfers to other units to do the same.

But the major recommendations by a Pentagon task force that looked into racial problems in Europe last fall were for universal military race relations programs and stronger efforts by field commanders to push such programs.

"If it comes from the top, from commanders and from the Secretary of Defense, it makes a difference and the difference is tremendous," said L. Howard Bennett, the black director for equal opportunity in the armed forces.

Bennett predicted: "This move should have a telling effect on the civilian community also. We will have some 25 million Americans in the military undergoing repeated study of how to help solve racial problems. This must have an impact on the civilian society because there has never before been such a widespread systematic educational attack on America's most pressing problems."

[From the Army Times, Feb. 24, 1971]

FORT DIX RECRUITS RECEIVE TRAINING IN RACE RELATIONS

FORT DIX, N.J.—A new four-hour block of instruction has been incorporated into the basic training curriculum here dealing with race relations in the Army.

During the first hour of instruction most of the time is devoted to the material contained in a feature from Conarc entitled "The Black Soldier in History." This introduction is designed to highlight the considerable achievements of the black soldier. In succeeding hours, soldiers learn steps to be taken to promote racial harmony. The trainees then are familiarized with racial problem-solving agencies within the Army and how to get in touch with them.

Soldiers are taught that "Black Power" is a term used to describe a process that every immigrant and minority group in America has gone through, namely the unity of a group to gain economic benefits and political power commensurate with the group's numbers. The soldiers gain an insight into the fact that the black power sign and salute, the Afro, and the distinctive dress are all part of the group unity.

[From the Army Times, Feb. 24, 1971]

GERMAN YOUTH LEARN OF U.S. RACE PROBLEMS

HEIDELBERG, GERMANY.— Understanding America's race problems is tough for Americans, but for Germans who have had little contact with Americans and practically no direct experience in American relations, the problems can be utterly incomprehensible.

The Heidelberg chapter of KONTAKT (a German-American Youth Activities Group) recently got together on a Sunday afternoon in an effort to share their problems.

Some 80 Germans and Americans gathered here recently for a showing of "Black and White: Uptight", a race relations film presently making the training circuit throughout USAREUR. After two showings of the movie, the group, moderated by Rich Porter, a black soldier serving on the USAREUR and Seventh Army Troops Human Relations Committee, broke into an open floor discussion of the movie and related issues.

Before its end, the discussion had touched on everything from Black Panther politics to housing in Heidelberg.

Since the program was intended primarily as an orientation session for the Germans, many Americans were surprised at the depth of some of the German's understanding of the problems. For many of the Germans, however, some questions that had previously appeared to be simple right-or-wrong moral issues, began to take on complicated and confusing overtones.

German reactions varied from "The movie was strictly a whitewash," through "Oh, those problems only occur occasionally in the Southern States," and "The problems will only begin to be solved when capitalism fades," to "You Americans really don't understand your own problems."

Most of the Americans were willing to admit that they had trouble understanding their problems and that the solving of the problems would involve a long and painful universal effort.

Although the movie had its weaknesses and the discussion participants came to more confusions than conclusions, the program was considered a success, because as Porter said during the discussion, "The most important thing we can do to bring about solutions to our problems is to wake people up to the problems and to keep them aware.

BLACKS GET BREAK IN ROTC GRANTS

(By Larry Carney)

WASHINGTON.—The Army is setting aside several hundred ROTC scholarships annually specifically for blacks and other people residing in poverty areas in an effort to attract more minority members to the officer corps.

The new minority officer procurement program—just approved by office of the deputy chief of staff for personnel—is aimed mainly at attracting more black officers. The package contains a whole host of recommendations for increasing black officer membership in the Army.

"They're the country's biggest minority group but make up only three percent of our officer corps," one Pentagon officer told Army Times.

If current trends continue, this percentage will drop still further. In 1965, 3.5 percent of the first lieutenants in the Army were black. This percentage dropped to 1.9 percent in 1970. "Other company grade statistics are comparable," officials said.

"Ideally, the Army would like to see an officer corps that represents the fabric of the country. In the case of blacks this would mean an officer corps of 11 percent to approximate the percentage of blacks in the total population," officials said.

Beginning immediately, the Army plans to:

Sharply increase the number of blacks, Spanish Americans and Mexican Americans enrolled in officer candidate school (OCS) courses.

The Army has established a procurement objective for the OCS college option program (limited to civilian college graduates) of eight percent black and four percent Mexican American or Spanish American. For in-service recruiting, it has established a recruiting objective for 11 percent blacks and four percent Mexican or Spanish American.

Make black officers "more visible" on college campuses, in ROTC recruiting, and in ROTC summer camp assignments. This means, more black officers will be assigned to ROTC duties. Four percent of the officers currently assigned to ROTC duty are black. This compares with a 2.5 percent average of black officers Army-wide.

Encourage more predominantly black colleges to host ROTC units. Of the 120 predominately black colleges, only 17 have Army ROTC units. Of those schools which do not have ROTC or who have applied for ROTC, only seven have the capacity to produce the 20 or more graduates annually to make an on-campus program worthwhile.

The Army feels the fastest way to increase black officer strength is through ROTC. The Military Academy has made great strides in increasing the number of blacks in their new classes in recent years, going from .7 percent in 1968 to 3.1 percent in 1969 and 2.9 percent or 40 cadets in 1970. Eighty-seven blacks are currently enrolled in USMA. This upward trend won't make much of a dent in overall black officer totals.

With OCS being reduced, there appears little chance that any great increase in black officers can be accomplished through this procurement source. The Army only gets about 20 black officers annually through the direct commission route—mainly doctors and chaplains.

So it's up to ROTC. Blacks currently make up about eight percent of the ROTC enrollment. This is about the same level as the national black enrollment on college campuses. Officials point out, however, that only 2.5 percent or 138 of all scholarship cadets are black. While the eight percent appears to be high, the black attrition rate is so high that only a small percentage ever complete the course and enter the Army as second lieutenants.

To get more blacks and other disadvantaged people into ROTC, the Army has approved a plan to award one four-year scholarship annually to a cadet graduate of each of the 136 Junior ROTC or National Defense Cadet Corps schools located in poverty areas designated by the Office of Economic Opportunity. Students selected must be qualified for the scholarships just like other scholarship recipients.

Approximately 110 of these JROTC and NDCC schools are located in predominantly black areas. A dozen or more schools are predominantly Mexican-American while the remaining schools are located in poor white neighborhoods. The remaining 85 four-year scholarships will continue to be awarded on a national competitive basis.

In addition to the four-year scholarships, the Army plans to award 75 of the 400 three-year scholarships it gives annually to students from low-income families. This will be to students from families who earn less than $6000 annually.

The Army has identified about 1400 active duty black E-5s and E-6s with two years or more of college who it feels are qualified to apply for OCS. "Each of these men will be counselled by his battalion commander regarding the OCS program and encouraged to apply for OCS," the Army said.

"We are also screening the records of all blacks in the lowest four grades who have two or more years of college as potential OCS students," officials said.

The Army plans to assign still more black officers to ROTC duty. Forty-seven black officers have recently been added to the staff of the professor of military science (PMS) at 47 predominantly white institutions. Black participants on the PMS staff at white institutions is considered essential to help in attracting black students to join ROTC. Although precise figures are not available, minority participation in ROTC at predominantly white institutions is low. There are no black PMSs at white schools.

Active duty commanders of ROTC summer camps are also being urged to place black officers in "high visibility" command and staff positions. To do this Continental Army Command is making plans to require black officers to attend camps rather than remain at their institutions over the summer break.

In addition, the Army has approved the assignment of 16 minority officers and 15 minority civilians to recruiting duties. Located at Department of Army, CONARC, and each of the five CONUS armies, they will have the single responsibility of organizing and supervising procurement of ethnic minorities for the Army Officer corps. The offices will have information on ROTC, USMA and OCS.

[From the Army Times, Feb. 24, 1971]

WESTMORELAND ASKS MORE COMMUNITY SERVICE WORK

WASHINGTON.—Army Chief of Staff Gen. W. C. Westmoreland has called for more commander attention to Army Community Service programs.

In a message to commanders, the Chief of Staff said "ACS volunteer service requires expansion to insure wide community participation and the development of a larger support base in order to provide greater assistance to the military community. Of prime consideration in attracting volunteers is the opportunity provided to all segments of the community to make a worthwhile contribution to the community's welfare."

Westmoreland said volunteer support must be actively solicited and encouraged on every post to insure ACS aid is available to all.

The message follows comments by the Army leader at the annual commanders conference in Washington late last year. "I wish to place far greater emphasis on the ACS program to take care of families better," he said, "and improve service attractiveness to Army wives."

Dispatched as the Chief of Staff departed on a 17-day oversea visit, the message said "the unique capability of ACS for troubleshooting difficult family problems, identifying emerging community needs, and developing new responses to meet them must be fully exploited." To maintain flexibility, he said, ACS must complement, rather than incorporate, established programs such as survivor assistance, retired affairs, housing referral, domestic action activities and similiar personnel services.

Westmoreland called on commanders to:

Make "every effort" to stabilize the assignment of key administrative and professional personnel with ACS to develop effective and continuing programs "for our highly mobile population," and

Actively support staff training programs to develop and maintain good standards of ACS service throughout the Army.

"Vigorous publicity efforts are required to make ACS a household word for all our personnel," Westmoreland said. "To this end, all, company, battery and troop commanders—at whose level requests for ACS assistance normally originate—must be knowledgeable of ACS functions and the important role of ACS in the reduction of Army family problems.

"I firmly believe that the ACS program will play an increasingly important role in our move toward the zero draft and I expect every commander to give his personal support," the Chief of Staff said.

Reports of new and successful ACS endeavors are to be sent to the Pentagon for evaluation and Army-wide use.

[From Army Times, Feb. 24, 1971]

USAREUR UNITS SOON TO BEGIN HIRING KPS

(By Felicity Hallanan)

HEIDELBERG, GERMANY.—Civilian KPs are going to be introduced in messhalls in Europe much sooner than expected.

What's more, the recent DoD directive instructing commands to get the troops out of the kitchen may be an unexpected bonus for military families overseas who are in need of some extra cash.

With dependents included as people who can be hired locally for KP duties, hundreds of wives and teenagers who normally remain jobless while they're in Europe may have a chance at some work.

The request is now being considered by the Army, but predictions are that it faces a rocky road.

Setting up operations for the change, U.S. Army Europe (USAREUR) officials are far ahead of a Pentagon request to have civilian KPs functioning over here by the beginning of the next fiscal year.

Instead, USAREUR is ready to start hiring, and plans to spend an estimated $3.5 million during the next five months of FY 71. Cost for the following year will be around $13 million.

About 3,500 spaces are waiting to be filled in USAREUR messhalls. In some areas it may be difficult to hire local national workers for these jobs because of a general labor shortage throughout Germany.

While sufficient funds have been found to make it possible for the command to offer attractive wages, there simply are not enough people in West Germany today looking for jobs.

That's where dependents would be most welcome. The result should be beneficial for both sides, providing work for Americans who want and need it and filling slots USAREUR needs filled to get the program going.

Units which are already spending nonappropriated funds to hire civilians to handle KP will be the first to receive appropriated funds, probably by the first of March. This is logical because they already have set up a system and hired personnel for the work.

About 644 civilians are presently paid for out of nonappropriated funds, while another 400 are estimated to be hired by individual soldiers.

Requirements of messhalls differ, depending on the kind and size of establishment. As a rule messhalls should have two KPs for the first 50 people using the facility, then one for every 50 people after that.

New working hours will have to be set up for the civilian KPs, particularly those wives and mothers who take on the job and want to be home evenings.

LA GRANGE EARNS GOVERNOR'S AWARD

HON. J. J. PICKLE

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. PICKLE. Mr. Speaker, for the first time ever, the Governor of Texas, the Honorable Preston Smith, has named a small Texas city as recipient of the Governor's Award in recognition for citizen's participation in the preparation of a comprehensive plan.

The winner—La Grange, Tex., is in the 10th Congressional District. This high honor comes as no surprise to the people who know this city to be one of the most progressive of its size in the entire State, or even the entire Southwest.

La Grange was chosen for this award, because they went several steps further than do most cities. In the preparation of the city's comprehensive plan, La Grange offered direction and guidance for their consulting engineers, whereas most cities hang back waiting for the professionals to come up with a recommendation.

La Grange, however, is blessed with strong individuals who know what is best for their own city. Mayor L. W. Stolz and his council members picked a very capable engineer to do the work, but then added their own insights to the program.

Thus, this city is the first recipient of the Governor's Award since the inception of the 701 planning program for small cities. La Grange earned the honor—its citizens will always have a strong voice in their own future and I add my congratulations to the Governor's.

OF GREAT IMPORTANCE TO AMERICA

HON. ROBERT L. F. SIKES

OF FLORIDA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. SIKES. Mr. Speaker, the article, Time of Action, by Kenneth B. Pomeroy who is chief forester of the American Forestry Association, appeared in the December 15, 1970, issue of Southern Lumberman. It is a very timely and needed summary of some important facets of the forestry legislative programs which I would like to bring to the attention of my colleagues:

TIME FOR ACTION

(By Kenneth B. Pomeroy)

What are we going to do about private forests?

We have talked about them since Ben Franklin noted a lack of fuel wood within wagon haul of Philadelphia.

We have counted them—4,500,000.

We have measured them—309,000,000 acres.

We have inspected them. Some need planting. Others are cluttered with useless relics of former tree crops. Only 29 per cent are in satisfactory condition.

We have weighed their role in the national economy. They must produce wood more efficiently if future needs are to be met.

All of these observations and more have been documented expertly by the Southern Forest Resource Council in its excellent report *The South's Third Forest*. Additional findings have been reviewed by "Trees For People," a national task force of conservation, industry and public advisors.

The time for talk and study has passed. No magic formula has been found. Nor is one likely to be devised. Techniques that work abroad fit different economic and social conditions. We must rely upon our own proven methods.

The initial stage is to place greater emphasis on activities that forest owners cannot handle adequately by themselves.

Why? Because private forests serve all the people—forests yield pure water; they shelter wildlife; they cleanse the air; they add beauty to the countryside; and they furnish wood for countless uses.

But these vital public services must be provided under threats of loss by fire, damage by wind and attack by diseases or insects. We can help our own cause by reducing the risks so that land owners can practice better forestry. There are several ways to do this.

1. *Protect forests from fire.*

Protection of present and future crops is basic to sound management. Yet 31 million acres, six per cent of all commercial forests, do not receive any protection at all. A much larger area, over 200 million acres, is not protected adequately.

Why does this situation exist? It exists because citizens, you and I, have not insisted that adequate funds be appropriated.

Federal appropriations for cooperative forest fire protection under the Clarke-McNary Act of 1924 have not been made at the level authorized by Congress. The Congress authorized an annual appropriation of $20,000,000, but after much prodding by state foresters, forest industries and conservationists, only provided $16,469,000 for the current year.

This key forestry appropriation should be increased to the full authorization of increased to the full authorization of $20,000,000. It can be and will be only if you insist upon it.

2. *Controlling diseases and insects.*

Disease and insects cause losses estimated in the billions of dollars annually. They attack shade trees in cities as readily as timber trees in forests. Dutch elm disease has changed the appearance of many communities. Gypsy moths defoliate hardwood forests in the Northeast. Bark beetles ravage pine forests in the South. Dwarf mistletoe damages trees in the West. Sawflies and tip moths deform young trees everywhere.

Some of these pests have been held in check in the past with DDT and other chemicals now known to be harmful to animals, birds, fish and people. Urgently needed are new, less-hazardous methods of control. Some promising leads have been found by research workers. Their efforts should be accelerated and intensified greatly.

Appropriations at the Federal level should be increased from the present allotment of $4,783,000 for insect research and $2,810,000 for disease research to at least $10,000,000 for both activities.

3. *Provide technical assistance.*

Technical assistance, some free and some at modest cost, has been available to limited numbers of forest owners for some time. More people should benefit from this service. But 4,500,000 owners are far too many to be aided by 800 cooperative Federal-State service foresters and 300 consulting foresters. At best one public forester can only aid about 100 owners in a year. Consulting foresters are more limited in their contacts because they usually work on larger properties. Add to these limitations the fact that tenure of ownership averages about 15–20 years and it becomes apparent why many forest owners are not receiving the benefits of professional guidance.

The Federal share of the Cooperative Forest Management program is now bumping against its authorized ceiling of $5,000,000 annually. In 1971 the Congress will be asked to raise the authorization in order to meet rising costs of operation. At the same time the Congress and the states should be urged to double man-power on the ground so that technical assistance programs can be implemented more fully.

The ranks of consulting foresters could be expanded ten-fold. These ten, spurred on by private incentive, can perform services a public forester can not provide. For example, a consultant can work on a property as long as it takes to get the job done, whereas a public forester may be limited to three or four days in which to show the landowner how it ought to be done.

Consulting foresters, being private businessmen, face the same hurdles as young attorneys in establishing their business. It takes money to tide them over during the year or two required to create a flow of funds. For example, work done today may not be paid for until months later. Meanwhile, there are payments to make on equipment and payrolls to meet.

The Tennessee Valley Authority and the National Association of Consulting Foresters have attempted to break this bottleneck with an agreement that enables TVA to underwrite certain establishment costs during a two-year period. Two promising young foresters have been selected for the program. They will be aided with referrals from TVA and other public agencies.

This pioneering effort holds great promise. It should be initiated in other forested regions.

4. Cost-sharing.

Conversion of useless brushy areas to productive forests, planting trees to assure a future supply of wood, protection of watersheds, improvement of wildlife habitat and enhancement of the environment are public-interest activities that usually require considerable labor to initiate but do not yield cash returns on the investments for a long time. Many forest owners may not be in a position to undertake such projects, because of age or financial limitations. Yet future economic and social needs of the nation require that private forests fulfill their role.

There are two ways to solve the problem; i.e., regulation as in some other countries, or public assistance in the form of cost-sharing. Regulation was ruled out in this country two decades ago. What about cost-sharing?

Public assistance in the form of cost-sharing under the Agricultural Conservation Program has been available since the mid-1930's. Yet total accomplishments have been but a "drop in the bucket" compared to the job that needs to be done.

Seventy-five million acres of private lands *needs* to be planted. The actual acreage *planted* annually is slightly more than one million acres. The accomplishment is not enough to keep up with new areas being denuded by fire and other causes.

One hundred forty million acres of partially productive private forests need stand improvement such as thinning and removal of useless cull trees that occupy valuable growing space. Here again annual accomplishments are pitiful in comparison to the magnitude of the job.

A separate assistance program, geared to the needs of forestry, should be devised. It should contain the following key features:

(a) Be in the public interest;

(b) Emphasize long-term activities that forest owners are not likely to undertake by themselves;

(c) Require owners to commit themselves to a forest plan of long enough duration to make assistance effective;

(d) Make assistance available over a period of years;

(e) Consider cost-effectiveness in establishing priorities for assistance.

A forestry assistance program is being drafted now by the Administration for presentation to the Congress early in 1971. When its details become available, it should be studied carefully.

5. *Other incentives.*

Utilization, marketing, taxation, leasing and insurance also are important factors in an owner's forest management program. These considerations vary considerably from one locality to another and for that reason are not being discussed in detail here. But, all are important to the successful management of the small, privately-owned forest and must be dealt with before these lands can yield their full potential.

SUMMARY

Fire protection, insect and disease control, technical assistance and cost-sharing are basic elements of efforts at the Federal level to improve management of 4,500,000 private, non-industrial forests. Aggressive action should be taken immediately on each element so that owners can achieve the objectives of which their properties are capable.

ON "THE SELLING OF THE PENTAGON"

HON. F. EDWARD HÉBERT

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. HÉBERT. Mr. Speaker, Joe Culotta, Jr., is host of a program on WTIX radio in New Orleans called "Let's Talk It Over." On February 28, 1971, he had some comments to make about the CBS program, "The Selling of the Pentagon."

Because he is a knowledgeable individual in the field of broadcasting and because his show is one of the most popular and stimulating in New Orleans, I want to insert his remarks in the RECORD at this point.

REMARKS MADE ON "LET'S TALK IT OVER," WTIX ON FEBRUARY 28, 1971

Last week, CBS presented a program entitled, "The Selling of the Pentagon." It dealt with a so-called exposé of the military complex with special emphasis on the Public Information sector of the military service. This was nothing new since exposés in this area have been much in the news as of late. Which brings up the point that possibly, just possibly, there is an organized move about to intentionally discredit the military—who would do such a thing? Well, if CBS and other groups believe that a nebulous military contingent is trying to "sell the idea of the Pentagon", doesn't it follow that another nebulous group who is anti-military just might be trying to "sell the Pentagon" also, but that their efforts may be aimed at selling it down the river. And remember if the military does dissolve into another social arm of this already massive bureaucracy, then who's going to stand vigilant from the Halls of Montezuma to the Shores of Tripoli . . . to the coasts of California and New York?

But let's look at a point or two presented in, "The Selling of the Pentagon." CBS states that the military used taxpayers' money to propagandize against the Soviet Union and the philosophy of Communism. They stated that the military-made films are still being shown with such narrators as John Wayne, Jack Webb, Walter Cronkite and even Chet Huntley putting down the Communists for world aggression. CBS states that most of these films were made in the late 50's and early 60's, and I quote, "before our official policy was changed to one of coexistence with the Communists." They went on to state that possibly the narrators had a change of posture on the Communist world since that time. I don't know about Cronkite or Huntley, but I'll bet John Wayne and Jack Webb haven't changed their posture regarding Communism. If indeed the United States has changed its posture toward Communism in the last five to seven years, then its so-called posture toward Germany since 1945 must be completely metamorphosized. Yet in the past month at least three war films made in the 60's were shown on national TV. The enemy in these films were the usual ruthless, bloodthirsty Nazis who were incidentally made up of German people. Since the end of World War II, some 26 years ago, at least a hundred or so movies have been ground out to impress in our minds what evil people those Germans are.

During the same period of time, the military has produced films on how evil the Communists are. The Germans are supposed to be our allies, but we can depict them as bloodthirsty, aggressive and bumbling; and no furor is ever heard. But show some footage of the bloodthirsty, aggressive and bumbling Russians and all hell breaks loose because our posture with Communism is coexistence and we must grind out footage consistent with our policy.

How many major films have dealt with Communism—not nearly as many as those dealing with Nazism—but then Communists must not be aggressive any longer because our "posture has changed toward them." They really don't have a fleet in the Mediterranean—that must be the imagination of the major networks. The Communists must not have provoked and armed the Arabs to break the cease fire against Israel—that too must be a delusion by the news reporters. And the Communists are not anti-semitic (they say they are not and have let us know that they are very "thin-skinned" about that charge). The reports that many thousands of Jews want to leave the Soviet Union to emigrate to Israel but are detained must be the pipe dream of Rabbi David Kahane.

The only real difference between the Nazis and the Communists is Nazism is finished—they lost but we have to be vigilant against similar movements (and indeed Communism is a similar movement). The Communists haven't lost yet. They still exist and are still the No. 1 enemy of the United States and the free world. To bury our heads in the sand and hide behind an "official posture of co-existence" is the real "me-too" attitude which CBS was accusing the military of perpetrating upon the public.

I'm happy the military is still showing films depicting Communistic aggression. I just wish the networks would show the military films on prime time TV. They could use them to pre-empt "Hogan's Heroes", after all the Americans from that German prison camp were liberated in 1945.

JOSEPH CULOTTA, Jr.

FTC COMES ALIVE—AND HOW

HON. WILLIAM L. HUNGATE

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Monday, March 8, 1971

Mr. HUNGATE. Mr. Speaker, in time of great concern for consumer protection, some recent actions of the Federal Trade Commission should meet with public approval, as the attached article outlines:

FTC COMES ALIVE—AND HOW

Widespread benefits are forecast for consumers now that the Federal Trade Commission—once riddled with internal friction and mired in a virtual do-nothing policy—has organized in a burst of long-needed activity.

Change began January 1970 when Caspar Weinberger succeeded Paul Rand Dixon as chairman. "We're going to try to use talent wherever we can find it," Weinberger said as he proceeded to hire, among others, one of Nader's Raiders who had antagonized the old FTC staff.

The rebirth has continued under a new chairman, Miles Kirkpatrick, who moved into the office in September when Weinberger was promoted to deputy director of the Office of Management and Budget. A Philadelphia lawyer, Kirkpatrick headed the American Bar Association study group that sharply criticized the FTC in 1969.

In recent months, the FTC has moved in on numerous problems.

Rules for car pricing. Subject to public hearings January 12 and 13, FTC would hit gimmicks that cloud auto trade-in values, price cuts, taxes and service charges in ads and on sales stickers.

Truth in ads. New sanctions would force firms found deceptive in their advertising to either stop advertising the product completely or devote one-fourth of every future ad and commercial to telling that the FTC rated previous ads false and deceptive. Actions have already been taken against Coca-Cola for advertising Hi-C as highly nutritious in Vitamin C, and Chevron gasoline for saying the additive "F-310" reduced air pollution.

Cool-off period for door sales. A drafted regulation would allow any buyer to cancel within three days any consumer goods or services costing $10 or more and bought at his door.

New credit safeguards. Stores, oil companies, credit card firms and book clubs—subject to hearings in January—could not bill customers for disputed charges until explanations are made. The creditor also could not disclose a bad credit rating until the customer himself has been notified.

Among other requirements, FTC wants companies to include on all bills the names addresses and phone numbers of employees who can handle customer complaints.

Mail order complaints. Investigations have been launched (first into Chicago-area firms frequently reported) into failures of mail order houses to deliver merchandise ordered and paid for—or to respond to queries in a reasonably prompt time.

Enzyme claims. FTC has stiff questions for detergent advertisers and manufacturers: Are ads claiming effectiveness against all stains truthful? Should health notifications be listed on products to warn that enzyme products can cause allergies, skin irritations and lung ailments?

FTC crackdown has been delayed by disagreement over which outside group should conduct an investigation.

FTC may also soon demand that cartons containing phosphate-bearing products warn that excessive use will add to water pollution.

Light bulb lifetimes. As of January 25, light bulb manufacturers must reveal the average light output and lifetime of their bulbs as well as other information essential to valid comparisons of cost savings and duration.

End business reciprocity. Although FTC has never issued a formal antitrust complaint on the old "you buy from me and I'll buy from you" practice—which bars competitive bidding—it is now openingly looking for cases to take to court.

Probe gas shortage. Because of the natural gas scarcity, the FTC staff will look for "collusion or other unlawful conduct" in the oil industry. Other broad antitrust investigation is planned for the oil, gas, electricity and coal industries.

CONGRESSIONAL IMPASSE

Consumer protection forces found victory in defeat this year in their long and vigorous battle in Congress against the proposals of an Administration-business alliance.

Although two major bills were killed, neither of the final versions contained Nixon's requirement that the proposed independent consumer agency and controversial class action suits be under Justice Department control.

LIBRARY OF CONGRESS COMPREHENSIVE REPORT ON THE CIVIL SUPERSONIC TRANSPORT PROGRAM

HON. HENRY M. JACKSON

OF WASHINGTON

IN THE SENATE OF THE UNITED STATES

Tuesday, March 9, 1971

Mr. JACKSON. Mr. President, on September 21, 1970, the Library of Congress released a report entitled "The SST: The Issues of Environmental Compatibility." That report was prepared at the request of the junior Senator from Alaska (Mr. GRAVEL) and provided a scientific and scholarly assessment of all of the environmental issues—sonic boom, noise, and effects on world climate—which could conceivably be associated with the development of a commercial fleet of supersonic transports.

It is my view that this objective report by Mr. George M. Chatham, a specialist in science and technology in the Science Policy Research Division, was instrumental in placing in proper perspective the unfounded charges which some have made over the past 6 months concerning the impact which commercial supersonic transports might have on the environment.

In the belief that the objectivity and the dispassionate scientific inquiry of a reputable, disinterested, and prestigious body such as the Science Policy Division of the Library of Congress, should be directed at a review and an analysis of the full range of issues—environmental, economic, and technological—presented by the supersonic transport program, I requested the Library to furnish me with an up-to-date report on all aspects of the program. This report has now been completed. It is entitled "The Supersonic Transport" and was prepared by Mr. George N. Chatham and Mr. Franklin P. Huddle.

Because the printing facilities of the Library of Congress are not equipped to make copies of this report available for at least the next few weeks, I ask unanimous consent that the entire report be reprinted in the Extensions of Remarks section of the RECORD.

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

THE SUPREME TRANSPORT

SST: SUMMARY OF THE CONTENTION

(By George N. Chatham and Franklin P. Huddle)

The following statement summarizes a study by Science Policy Research Division, Congressional Research Service, Library of Congress, for issue March 1, 1971, under the title "The Supersonic Transport". The study is by George N. Chatham and Franklin P. Huddle.

Lag in commercial aircraft technology

Introductory chapters of the study trace the evolution of aircraft technology. For the first half-century of manned flight, technology of civil aircraft relied successfully on military research and development. However, by the early 1950s, military design engineering became specialized and "systems oriented." Military designs departed from lines important for civil aircraft. Technological competition of ballistic missiles jeopardized the status of the manned bomber to such an extent that no truly successful supersonic bomber has yet been commissioned. At the same time, efforts to maximize parameters of military importance slowed progress in directions important for commercial aircraft. Fuel economy, cabin space, and other commercial considerations were neglected. In particular, military engine designs failed to exploit known developments offering great promise for commercial service. The need became apparent for a separate research and development effort, explicitly aimed at the maintenance of technological advances in civil aircraft.

Plight of civil air transport in 1971

Faults of commercial air transportation began to be identified: airport congestion and inadequate terminal capacity, noise around airports, emphasis on airport-to-airport travel rather than point-to-point, and passenger-baggage separation were among these. Difficulties in coordinating the introduction of new aircraft models with use requirements put the airlines in an economic bind. After maintaining fare schedules without increase, despite inflation, for two decades after World War II, the airlines were faced with the problem of falling revenues and profits. The choice was between improved load factor and fare increases. A third alternative, used successfully in the past, was an increase in productivity of aircraft in service. It was to improve this productivity that the SST was proposed.

ADVOCACY OF THE SST BY POLITICAL LEADERSHIP

Presidents Kennedy, Johnson, and Nixon all reviewed the case for the SST as a stimulus to U.S. transportation, to strengthen civil air technological advance, and to enhance U.S. national posture in a world of technological competition. All three Presidents found in favor of the SST. British, French, and Soviet competition is already at work in this area. Foreign designs for the first generation of aircraft, while likely to appear sooner, are inferior to the U.S. SST design.

ECONOMIC ISSUES OF THE SST

Operating supersonically, the SST would be comparable to cost per seat-mile to the Boeing 747, except that the increased productivity attributable to the higher speed would enable airlines to increase service with a reduced number of aircraft. This advantage offers significant but indeterminate economies. With respect to national financial gains, the United States balance of payments would be altered to the extent of some $20 billion by producing and selling SSTs to the world market, rather than buying them from abroad.

Although the economic advantages of the SST seem clear to the advocates, it is also true that the design and management of so large an enterprise is not without risk. Much depends on management and technological skill. In any event, the large investment required for the SST inescapably calls for funding participation by the Federal Government. Although all forms of commercial transportation have received various kinds of financial assistance from the Government, aid in the development of aircraft would be a "first."

ENVIRONMENTAL ISSUES OF THE SST

Much of the study is addressed to the question of whether the SST would seriously impair the human environment. There have been many allegations as to its noise, air pollution, and possible climatic effects. After a searching investigation and analysis, the following conclusions were arrived at:

Noise

The SST requires large, powerful engines which are noisy. In addition, when traveling supersonically the SST generates a sonic boom. The boom issue has been provisionally disposed of by an understanding that the SST will travel supersonically only over oceans or uninhabited tundra. Since Congress has passed no law to insure the continuity of the sonic boom ban, many people are dubious about the permanence of the Executive commitment in the face of economic pressure by the airlines.

Engine noise is considered in five operational modes: on the ground, sideline noise on take-off, departure (climb from one mile past the end of the runway to cruise altitude), cruise, and descent. Noise is not a factor on the ground, when only minimum power is needed or in cruise when it is too far from the ground to be heard at all. During the three noisy phases, work is needed to reduce sound level. However, much has already been achieved. In the 12 years since commercial jets have been in service, the noise generated per pound of thrust has been reduced to one-tenth of its former value, and the sound (in terms of acoustical energy) per pound of thrust has been reduced to one-hundredth. In view of past progress and future engineering expectations, the Boeing Company has announced that it is committing itself to meeting FAA subsonic aircraft noise limitations (i.e., generating less noise than the 747 does now) with the SST by the time it is certified for service.

Pollution

Judged by engineering criteria, the jet engine is highly efficient in terms of units of delivered power per unit of effluent. Except on the ground at take-off, moreover, the engine diffuses its effluent. Most of the polluting ingredients result from uneconomical practices, for which incentive already exists to hold them to a minimum. Large airports for supersonic aircraft tend to be located remotely from urban areas where air pollution is most serious. Beyond this, the question of urban air pollution is a local problem, with each locality requiring its own specific measures of reduction and prevention. The role of the SST, and of jet aircraft generally, is inherently a minor one relative to the effluent from surface transportation media.

Weather modification

Traveling in a new regime at 65,000 feet, the SST is alleged to generate a variety of effluents in such quantities relative to preexisting ingredients of the upper atmosphere as to threaten to alter the climate below. Examination of these allegations, one by one, shows the effects of the SST on the environment to be so small in comparison to natural factors of a similar nature as to make quantification extremely challenging. There is a possibility however that planned experiments during the two-lane prototype phase can bring about some resolution. With respect to particulate matter, it was found that cosmic dust and volcano effluent far exceed any possible particulate effluent from the SST without significant climatic effect. With respect to water vapor, the injection of water from thunderstorms into the stratosphere exceeds by many orders of magnitude any possible SST effect, but the stratosphere remains both low and fairly stable in water content, indicating that there are stabilizing forces at work.

The allegation that combustion of SST fuel would exhaust the oxygen in the atmosphere is disposed of by the simple statement that the combustion of all fossil fuel (of which jet engines can never consume more than a small fraction) would temporarily tie up no more than three percent of the oxygen in the atmosphere.

The conjectural effect of the carbon dioxide generated by the SST is trivial compared with that from internal combustion engines. Long-range measurements of temperature do not disclose any climatic change attributable to a measured slight increase in CO_2 content over the past century.

There is some need for attention to the possibility of hazard to passengers from radiation from the sun, especially during severe solar flares. (The last severe one was 15 years ago). With proper instruments, the pilot could be warned in plenty of time to drop down 10–20 thousand feet where atmospheric shielding would eliminate the hazard.

The SST: Remaining uncertainties to be resolved

There are many uncertainties: as to the verity of the competition from foreign SST developments; as to whether the Boeing SST will produce the economic gains claimed for it; as to the extent of engineering risk this vehicle represents; and as to whether it can stand alone, without other supporting elements of a complete system of air transportation. Many of the defects of present air transportation have nothing to do with air speed or vehicle productivity; the ground sector, for one example, is generally conceded to have been neglected.

The environmental aspects of the SST, and especially the global aspects, have received the bulk of attention of critics. Yet, upon analysis, most of these postulated effects are found to be non existent or of a scale making detection difficult. Of course, some environmental uncertainties remain. As to these uncertainties, the point is made that it is rarely if ever possible to prove a negative.

But the greater number of uncertainties appear to lie in the field of economics. It is likely that these can be resolved only by actual experience with the product in use. Much hinges on the quality of engineering management in the development of the vehicle, and the system of which it is conceived as a component. Much hinges also upon the quality of management of the airline service and its competition. Of course, these are general considerations and are therefore imponderables beyond the scope of the study.

I. INTRODUCTION

This paper examines some of the considerations governing public acceptance or rejection of the supersonic aircraft (SST) as a commercial transportation vehicle.

Mass public transportation by air has been a development of the last half-century. It is today the primary mode of long distance commercial travel. Its primary characteristic is speed. Each successive generation of passenger aircraft has achieved higher speeds coupled with larger carrying capacity than its predecessor. The issue at hand is whether by action of the United States Government this process should be continued beyond a natural barrier, the speed of sound.

The purpose of this study, based on a review of the literature of the controversy, is to provide a factual perspective from which to assess tangible and intangible costs and benefits of the SST.

The underlying question: Static versus dynamic technology

The controversy over the SST may not be so much over the political question as to the social worth of a particular technological innovation as over the broader question as to whether the processes and results of technological innovation generally are a social good that should be continued into the indefinite future. The literature of "technology assessment" has identified this question as salient for the United States today. Studies of the issue, most notably that by the Committee on Science and Public Policy (COSPUP) of the National Academy of Sciences,[1] suggest that even if the achievement of a stable condition is the goal, the level of technological achievement of today's society is inadequate to provide it, so that further technological progress is indispensable in any event. The findings of students of technology assessment reach a consensus on two further points:

(1) Each major technological innovation needs to be assessed in greater detail than ever before, and not once but repeatedly, to assure that its second- and third-order consequences are tolerable to society; and

(2) The social consequences of a technology need to be assessed along with the technical and economic consequences.

Opponents of technology appear to take various positions: (1) that technology is itself undesirable because its side effects are inescapably adverse, (2) that the pace of technological change is too fast to be accommodated to the socio-political structures of human organization, (3) that technological innovations occur so rapidly that human organizations are unable to sort out the good from the bad, or (4) that the variety of innovations produced by technology imposes such a burden of choice in the individual as to impair the quality of life.

Any substantial body of thought that opposes technological innovation per se, would be inclined to join forces with those who oppose specific innovations on their own merits. While this study is concerned with the specific advantages and disadvantages of one technology, *viz.*, the SST, the issue as to the general merit of technology needs to be disposed of. The NAS Committee on Science and Public Policy has put the matter in perspective with its conclusion:

"The future of technology holds great promise for mankind if greater thought and effort are devoted to its development. If society persists in its present course, the future holds great peril, whether from the uncontrolled effects of technology itself or from an unreasoned political reaction against all technological change."[2]

Although the economic aspects of technology tend to be decisive in determining whether or not some particular innovation should be pursued, the ultimate values and costs—which are hard to quantify—are environmental. As the COSPUP Report notes, "* * * technology * * * is nothing more than a systematic way of altering the environment." Accordingly, the report states:

"The choice * * * is between technological advance that proceeds without adequate consideration of its consequences and technological change that is influenced by a deeper concern for the interaction between man's tools and the human environment in which they do their work."[3]

Moreover, the assessment of technology requires—

"* * * not [for society] to conceive ways to curb or restrain or otherwise "fix" technology but rather to conceive ways to discover and repair the deficiencies in the processes and institutions by which society puts the tools of science and technology to work."[4]

If it be granted that technology should not—and indeed cannot—be generally arrested and frozen in today's mold, then the question of accepting or rejecting a particular innovation rests on two subsidiary questions. One is whether the system itself is or can be economically self-supporting. Will it pay for itself? Is there an economic demand for its services, sufficient to justify the investment? This issue needs to be answered quantitatively, and if the finding is adverse, the decision usually becomes academic.

The second question is whether the adverse effects of the innovation on man and on the human environment negate the beneficial effects, and also the economic values of the innovation. Since the adverse environmental effects (unless they are unmistakably catastrophic) do not automatically generate a negative decision, the issue becomes a matter for policy determination by the Govern-

Footnotes at end of article.

ment. This decision rests nationally with the Congress. Also, there is a residual regulatory concern, now being delineated in the courts, that rests with the States and municipalities. No mechanism is yet available for the international assessment of a technological innovation.

With respect to the SST, since a substantial outlay of funds is required of the Federal Government, and since the asserted environmental effects are national—indeed global—the technology assessment decision of whether or not to proceed with this innovation rests with the Congress. It is both an economic and environmental issue. Meanwhile, two other projects are already well along toward development of commercial supersonics aircraft, one jointly by the British and French, and the other by the Soviet Union. To some extent, these competitive activities seem likely to reduce the scope of the decision: it may be not whether the global environment is to receive a civil SST, but rather whose SST.

Economic considerations of SST development

The economic questions that confront the Congress are for the most part those of straightforward cost/effectiveness and demand forecasting. They are similar, for example, to aspects of the long-range planning problem that annually confronts top management in the automobile industry.

What will be the costs of achieving commercial supersonic air transportation?

What level of engineering design risk is involved?

What dollar benefits will accrue from this capability, to the carriers, to the aircraft industry, to the using public, and to the United States Government—in other words, to the taxpayer?

How reliable are the estimates of future demand for the use of the proposed hardware?

What economic adjustments are implied by the introduction of supersonic flight, and what costs and benefits are implicit in these?

What is the proper form of management of the enterprise, if it is decided upon?

What is the appropriate method of funding of the enterprise?

What would be the effect of banning the Concorde and TU-144 from the U.S.? Would the countermeasures in international economic competition caution against such a unilateral action?

Is participation of the Federal Government in the funding of the enterprise the best use of its fiscal resoures? Is there an adequate financial return? In essence, does the SST assure an appropriate net advantage in both tangible and intangible factors, to the Nation and its citizens?

Environmental considerations of the SST

The environmental consequences of the SST appear to be both complex and controversial. Some of these tend to interact with some of the economic issues. For instance, perhaps the most salient environmental question grows out of the fact that the supersonic aircraft, by virtue of its capability to move at supersonic speeds, causes sonic booms. The question is thus raised as to whether these high-altitude effects will be an intolerable nuisance; the tacit understanding has apparently been established that the proposed aircraft would travel at supersonic speeds only over the oceans—a constraint that would seem to deprive the vehicle of a part of its potential economic advantage and flexibility.

The high power requirements for supersonic flight, and the consequent large consumption of fuel, imply that the aircraft should be large in size and carrying capacity if it is to pay its way. This requirement leads to environmental questions which involve the effects of the effluent of the aircraft: air pollution resulting from the necessarily high level of effluent during take-off, and the conjectural climatic consequences of high-altitude discharge of water vapor and particulate matter. The noise of the (necessarily highly powered) SST engines on and near the ground is also cited as an environmental degradant.

Against these allegations of undesirable effects, there are such positive factors as the reduction in number of aircraft per thousand passenger miles (or per number of passengers transported), the saving of time, the general benefits that are alleged always to result to a nation's technology from a large effort in some one direction, the undeniable benefit to the nation's technological posture where technology correlates increasingly with diplomatic influence, and the probability that the increased speed capability of aircraft in the air will generate pressure on the airlines, as well as other participants in transport services, to improve the lagging efficiency of on-the-ground operations, toward making air travel a true system.

Another consideration, often overlooked, is that a vigorous effort in the advanced technology of large-scale, supersonic flight, aiming to make it compatible with the preservation of a congenial environment for man, can be expected to yield many beneficial developments in environmental science and technology that can be useful in other problems and activities of environmental enhancement.

II. BREAKING THE BARRIER OF SOUND

The first manned vehicle to explore the regime of supersonic speed was the Bell X-1, an American aircraft piloted by Elwood Yeager.[5] During a sequence of 41 flights, all of brief duration, he took the rocket-powered X-1 to speeds exceeding Mach 2,[6] and to altitudes above 70,000 feet. The first flight through the sound barrier occurred Oct. 14, 1947.

The shape of an airplane is a combination of blunt and shallow curves, sloping planes, and edges. Air flows over each surface at a different speed, all related to the speed of the aircraft. The shape of the aircraft is designed so that the air will flow smoothly by it, whether the aircraft is moving slower or faster than the speed of sound. However, there is a critical range of speed, the transonic region, which extends a few miles per hour on both sides of Mach 1. In this region, parts of the air flow move subsonically and others move supersonically. While in this regime, the aircraft is buffeted by shock waves and turbulence. Yeager found it advisable to pass through it quickly: to remain in it too long was not only uncomfortable to the passenger but hazardous to the structural integrity of the aircraft. However, once the aircraft passed through this transonic zone," the air flow became smooth again.

Yeager's flights resolved the long debate among aerodynamicists over the possibility of controlled flight beyond the sonic barrier. Also, he opened the supersonic domain as a useful realm of any aircraft with enough power to reach it. His experiments signaled the beginning of a vigorous research program to achieve supersonic flight routinely. Military advantages of this capability seemed obvious; although the commercial advantages were less so, aeronautical enthusiasts observed that just as subsonic aircraft had drawn the four corners of the United States conveniently close, supersonic aircraft would do the same for the whole globe.

Importance of turbojet engine for supersonic flight

The key to general supersonic flight was the turbojet engine. A principal obstacle to the achievement of supersonic speeds with propeller-driven aircraft had been the aerodynamic limitations of the propeller itself. The tip of the propeller entered the transonic regime long before the speed of the aircraft did; at that point, loss in efficiency through turbulence wasted power so that a speed ceiling of around 500 mph was generally accepted by aeronautical engineers as the ultimate top for propeller aircraft.[7]

Concern over the inherent speed limit imposed by the propeller led two independent investigators to seek and find a solution in the turbojet engine. The first successful turbojet-powered aircraft, the He 178, was produced by Ernest Heinkel in 1939; soon afterward, Frank Whittle's engines were used, in 1941, to power the Gloster E-28. The Heinkel and Whittle engines both used a centrifugal compressor as a first stage: air was compressed, expanded by burning fuel in it, and then discharged through a turbine which drove the compressor; forward impetus was provided by the jet thrust of the hot combustion products after they passed through the turbine.[8]

The turbojet engine offered a solution to the problem of propeller speed limitation. Thrust and efficiency of this new system, contrary to that of the propeller, were actually increased with increased forward speed.

Early in World War II, Whittle's insistent warnings to U.S. military authorities, together with the appearance in combat of the ME 262 (a twin-engined German fighter whose top airspeed exceeded by 100 mph the speediest planes of the Allies), persuaded the Army Air Force that the turbojet was worth examining. A Whittle engine was obtained and after a brief test, the Air Force asked the General Electric Company to produce an improved version compatible with U.S. industrial practice. An airframe was designed and built to receive the engine. The project was conducted with incredible speed under high security, camouflaged by preempting the project nomenclature of another secret aircraft development, the Bell XP which was subsequently shelved. In 1942, the Bell new XP-59 received its engine, flew successfully, and introduced U.S. military and industrial aviation to the jet age.

It took 11 years from that point to bring about the first U.S. military aircraft capable of routine supersonic flight. This was the first of the so-called "Century" series, the North American F-100[9] which flew in 1953, six years after the brief flights of the rocket-powered X-1A had breached the sonic barrier for the first time.

III. SCALING UP THE TECHNOLOGY OF SUPERSONIC FLIGHT

Military efforts to extend the application of supersonic aeronautical technology to larger aircraft produced an uninterrupted sequence of misfortunes and controversies. When the Air Force undertook a supersonic replacement for the subsonic B-52 bomber, the first result was the short-lived B-58. This three-man bomber could reach Mach 2.1 at 44,000 feet; it could cover its full range of 2000 miles in less than 2 hours. However, the B-58 was marginally useful; it fell short in payload as well as in range for its intended mission as an intercontinental strike vehicle.

The development span of the B-58 overlapped that of the B-70, of which only 2 units were actually built and flown before the program was dropped. More will be said of this development, which had considerable significance for the evolving proposal later on to build a prototype commercial transport for supersonic flight.

Meanwhile, efforts of the U.S. Navy to produce a large supersonic seaplane centered on the P6M, under development by the Glenn L. Martin Company in Baltimore. This design encountered several tragic misfortunes in flight before the project was terminated.

The last stage in the sequence was the F-111, a smaller supersonic fighter-bomber system intended (in various versions or modifications) for both Air Force and Navy use.

Footnotes at end of article.

The F-111 has remained controversial since its inception.

In view of the fact that large commercial aircraft traditionally grew out of military antecedents, it may be useful to examine the fate of one of these large supersonic bombers.

The development of the "all-purpose" B-70 Bomber

Proposed as the world's first large aircraft capable of long-range, sustained, supersonic flight, the B-70 was envisioned as the logical replacement for the subsonic B-52. It was also seen as fulfilling the need for a super-performance surveillance aircraft. The further possibility was later suggested that the general prototype might be modified into a commercial version to compete with contemporary (1959) European schemes to produce a family of short-range, intermediate, and long-range supersonic aircraft for commercial service.

Initial design specifications for the B-70 were issued by the Air Force in October, 1954, with an invitation to aircraft companies to compete for the job of prime contractor. The Air Force plan was to develop and deploy a fleet of these aircraft as long-range, multi-mach bombers by the mid-1960s. The plan fell victim to prolonged controversy. At first, problems centered on the wide variety of technical approaches advanced by the bidders. Then, as these were resolved, the project next came under attack as an expensive and unnecessary military alternative to the intercontinental ballistic missile. Development of the intercontinental ballistic missile, armed with a nuclear warhead, had provided a weapon competitive in destructive capability with the long-range strategic bomber. It also reduced the striking time of an intercontinental attack from hours to minutes. The military commitment to bomber aircraft was undoubtedly lessened by this alternative technology, and with it the willingness (or necessity) to make the heavy investment required for its successful development.

Opposition to the B-70 program grew steadily from the time the Air Force released its Request for Proposal in 1954. By 1959, the embryo aircraft was under attack by both missile advocates and others who saw it consuming an increasing share of the declining aircraft budget in the (also declining) budget of the Department of Defense. Presidential action came to terminate the program, November 30, 1959, although the President later granted the Air Force permission to continue the B-70 as a minimum-cost, aerodynamic research program. Some Members of Congress were critical of this decision to drop the program. The development was viewed as both an essential replacement for the aging B-52, and a prototype for a commercial SST.[10] However, the President's decision was firm, and the program came to a close with a few experimental and test flights of the two prototype vehicles.

Efforts to commercialize the B-70 technology

The possibility of a commercial version of the B-70 was raised in 1959 when General Elwood Quesada, then Administrator of the Federal Aviation Agency, called the President's attention to plans of the British aircraft industry to build two models of commercial supersonic SSTs, one for short-range domestic service and another for intercontinental service; as well as the plans of the French aircraft industry to build a medium-range SST, to be called the "Super-Caravelle." [11]

General Quesada noted that the beleagured B-70, by then jocularly referred to as the "paper airplane which would fly in a cardboard sky," was in fact superior in technology to either the British or the French SST concepts (independent at that time). The B-70 design called for continous Mach 3 flight over a range exceeding 7000 miles; the foreign firms were proposing smaller vehicles, to cruise at speeds of less than Mach 2. He therefore urged the President to consider the possibility that a commercial version of the B-70 be designed to be the U.S. entry in the emerging international competition.

In Quesada's view, the civil application would be derived from a technology developed to satisfy a purely military requirement. This had historically been the conventional pattern of innovation of commercial aircraft. As he put it—

"Ever since the Wright brothers' memorable accomplishment in 1903 the Military Establishment has had a vigorous development program designed to meet their needs for increasingly high performance aircraft. The pressing demands of national defense have characteristically given precedence to military budgets for this purpose.

"After designs were fixed and quantity production established to meet military requirements, it was often possible to build adaptations for purchase by air carriers and use in the civil fleet. This has been especially true in the development of crucial components such as engines and propellers, as well as materials and techniques of design. Thus, for over 55 years commercial aviation has had the advantage of leaning on and borrowing from a strong military development program." [12]

Evaluation of the B-70 conversion plan

There were technical advantages and disadvantages of this proposed course. The value of the B-70 as a prototype lay in its advanced aerodynamics, control methodology, high-temperature-resistant structural design, and techniques of fabrication. These were all gains that derived from a substantial history of applied research sponsored by the Department of Defense. Application of these advances, acquired at considerable cost, would give an American SST a significant edge over the foreign competition. However, Quesada's proposal had disadvantages as well. The long, slim body of the B-70 would not convert well to civilian use. In the various proposals for this conversion, the passenger seating capacities ranged from 15 to a very crowded 100. A converted version with the required upgrading for reliability and design modifications for airline service was judged likely to cost about the same as a completely new design for the specific purpose of commercial service. A study for FAA, by United Research, Inc., reported in October, 1960, that the development of a civil SST, based on the B-70 prototype, would require about $1 billion, a figure beyond the financing capability of individual firms in the aircraft industry, even if based on a backlog of firm orders.[13]

At the close of his tenure as FAA Administrator, Quesada placed contracts with two engine companies for SST power plant studies, and recommended an acceleration of the FAA program of studies of the entire system.

When President Kennedy took office, in January, 1961, he named Najeeb Halaby as Quesada's replacement. At the request of the new President, March 3, 1961, Halaby organized a team to develop a statement of national goals for aviation in the 1960s. One of the findings of this team was a recommendation for intensified efforts to produce a "Mach 3 transport." It called for an SST design with double the possible passenger accommodation of the B-70, featuring a swing-wing concept.

As to funding, the study proposed that—

"Government funds should be utilized through the research, design, development, prototype and probably production stages. Every effort must be made to recoup the Government's financial investment through some type of royalty system to be paid by the operators.[14]

Changing role of military technology

Beginning with the aftermath of World War I, civil aeronautics in the United States (and elsewhere as well) had leaned heavily on surplus military equipment and on military-trained personnel. By November of 1918, the United States possessed 10,510 aircraft—6,972 at home—and a large inventory of engines and spare parts. Military trained personnel in the air arms, being demobilized, numbered 228,368. All this surplus aeronautical hardware deterred new development or production, but provided an inefficient means for a precarious and subsidized air transport industry. Meanwhile trained fliers and mechanics sought ways of using the skills they had been taught. Further military development of aircraft in the United States lagged, and most of this activity was conducted in Europe and later Japan.

During the two decades between the two World Wars, considerable progress was made toward the development of commercial transports. Gradually, designs departed from the straitjacket of military prototypes. This trend was epitomized in the development near the end of that period, of the DC-3. This was a true trail-blazer, remarkably economical for its time to operate and maintain. It spurred the proliferation of many new feeder airlines and contributed immeasurably to the spread of air service all over the world. Although it was a far cry from combat aircraft, the military services made extensive use of it for transport purposes in World War II (the C-47).

The translation of the military advances in World War II into civil aircraft designs was more involved and complex than it had been 20 years earlier. Under the spur of military necessity the principles of aeronautical design had been vastly improved. These principles, of course, were the same, regardless of whether the function of the design was military or civilian. However, the configuration of an aircraft was profoundly influenced by its function, so that the same aeronautical design principles led to different final products. Speeds of postwar propeller-driven aircraft were not notably different for military or commercial service but cabin space was.

The power plant as key to aircraft evolution

From the Wright Brothers to the present day, developments in heavier-than-air craft have derived most importantly from innovations of engine and power-train. Without the gasoline-fueled reciprocating engine, the Wright Brothers aircraft would not have been possible. During the period following World War I, important progress was made in improving the horsepower-to-weight ratio of engines, culminating in the turbo-compound reciprocatory power plant that made Coast-to-Coast nonstop flight a commercial practicality. Again, military requirements justified and paid for the advances in engine technology. The civil market was an eager but secondary outlet for these products.

With the advent of the aircraft gas turbine engine, however, the suitability for commercial purposes of military power plants become less obvious or practical. The turbo-prop engine,[15] while first used in military aircraft, in England, in 1945, was quickly discarded for military purposes. Its efficiency was highest at moderately low altitudes. The aerodynamics of the propeller limited the speed of prop-jet aircraft to the subsonic regime. However, because of its fuel economy, freedom from vibration in flight, and capability of delivering many times the horsepower of reciprocating engines of comparable weight, it moved successfully into the commercial field. The Viscount, powered by four Rolls-Royce turbo-prop engines, became operational in 1953. The commercial utility of the turbo-prop, it should be noted, was not and still is not fully exploited because its performance characteristics did not warrant substantial military R&D investment.

The primary form of military gas turbine engine for aircraft is the turbojet.[16] This en-

Footnotes at end of article.

gine, which was operationally employed in both British and German military aircraft by 1942 (the Gloster Meteor and the Messerschmidt 262), derives all of its thrust from the exhaust. At low altitudes, the turbojet is inefficient but at high altitudes its efficiency is excellent. The principal problem is that it pumps in more air than it can use, so that—especially at low altitudes—adjustable restrictions are needed to limit the air intake. Although this kind of engine is now being proposed for use in the SST, which would operate predominantly at high speed and altitude, its fuel consumption at the lower speeds and altitudes of post-World War II commercial air travel have made it marginally useful for lower-performance civil aircraft. The first commercial transport to use the engine was the British Comet, in 1952. (Faulty cabin design of the Comet caused its withdrawal after two years of service; a redesigned model appeared in 1958, still using turbojet engines.) The first U.S. airliner to use turbojet engines was the Boeing 707, in 1958; it was followed in a few months by the Douglas DC 8. In the early versions, both aircraft used unmodified military jet engines. The engines were turbojets ("pure" jets) which were fine for high speed flight (speeds beyond the design capability of the 707 and DC-8) but, in stressing this vital military asset, the engines were not designed for fuel economy.

Fortunately, a sideline investigation of little military interest was to appear. One early device to deal with the surplus air which all jet engines must either use or deflect once in flight, was the "by-pass": in this model of engine, surplus air is ducted around the combustion chamber and then added again at the tail pipe. The result is augmented thrust and reduced fuel consumption especially at moderate speeds and low altitudes.

Further increases in efficiency were offered by tapping the surplus energy in the turbine system to increase the mass flow of air by accelerating it with a large, front-end fan and then ducting it around the rest of the engine assembly. This was the turbo-fan. Now in general service in U.S. airliners, it has an engine front that is larger in diameter than the rest of the engine.[17]

A belated commercial development, the turbo-fan appeared in the United States in 1961, when the Pratt & Whitney Company modified their military engine, the J-57, by adding a fan to the front end and ducting the air stream around the body of the basic engine. This modified version, designated the JT 3D, increased thrust 50% while simultaneously decreasing fuel consumption 13%. The commercial airlines quickly moved to take advantage of the innovation. Existing equipment was retrofitted, and new aircraft were equipped with turbo-fans. By 1965, virtually all non-propeller-driven civilian jets, foreign and domestic, were using the turbo-fan.

The rapidity with which the turbo-fan was adopted, once available, suggests the importance of a substantial R&D capability for the purpose of advancing the state of the art of commercial airframes and engines. Although the military version of the turbo-fan had been investigated more than two decades earlier, its failure to offer significant military advantage had resulted in a long and costly technological lag in commercial application.

IV. DETERMINING NATIONAL POLICY ISSUES OF THE SST

When President John F. Kennedy took office, early in 1961, the SST came into sharper focus. Describing himself as determined to "get America moving again," the new President invited opportunities for active causes. Responding to this opportunity, Najeeb Halaby, FAA Administrator followed his predecessor's initiative and urged consideration of a civil supersonic transport program. He found the President receptive.

As the SST project began to take a more tangible form, three interlocked questions became salient: (1) Should the Federal Government assume responsibility for the program? (2) If so, who should be in charge? (3) What fiscal arrangements would be appropriate? All three questions, of course, hinged on the overriding issue of Should there be such a program?

Previously, in the development of aeronautical hardware the military services had made all these decisions, subject of course to ultimate congressional ratification through the appropriation process. Military procedures followed a well-worn path: preparation of a strategic requirement, survey of technological alternatives, feasibility studies, preliminary design competition, selection of a prime contractor, negotiation of a contract with time-phased target objectives, and concurrently the presentation of an over-all bill to the Congress in which the specific project would be only one small element among many. But the SST project could not take this route.

Necessarily, it was a commercial project that needed to be compatible with the commercial environment. Instead of satisfying a strategic military requirement, the SST proposal was offered to match the less structured requirements of meeting and surpassing foreign competition operating from a different economic and political base, on a different time scale, with a different state-of-the-art. It raised the kinds of questions that private business organizations normally try to answer—and profit only by answering perceptively, such as:

Would the end product find an adequate market for sufficient numbers of units to go above the break-even point?

At the time it became available for scaled-up production, would it be able to compete successfully in price, performance, and maintenance with rival aircraft already on the drawing board?

What level of improved performance would be needed for it to supersede existing subsonic aircraft and outperform the new foreign competition without incurring an excessive degree of engineering risk?

Risk is an inherent element of the commercial environment. But in the appropriation of public money, elimination of risk is a compelling consideration. With the magnitude of the SST investment exceeding the capacity of available sources of private funds, to make the project go would require Government funding. How was the aspect of risk to be dealt with?

Criteria for the decision to proceed with the SST

President Kennedy announced the SST as a national objective in a Commencement address to the Air Force Academy, June 5, 1963. He had taken time out for this visit in the middle of the delicate maneuverings that preceded the negotiation of the Limited Nuclear Test Ban Treaty. Five days later, he would deliver his detente proposal at The American University, in Washington, D.C., that he hoped would lay the groundwork for an era of global peace and understanding. It is possible that he saw in the SST a dramatic illustration of the "plowshare" principle, as well as a peaceful alternative to occupy the aerospace industry. However, he also expressly interpreted the SST as evidence that the technology of manned flight—military as well as commercial—retained its vitality. The commitment to the SST, he declared, was "* * * essential to a strong and forward-looking Nation, and indicates the future of the manned aircraft as we move into a missile age as well."

The President sketched briefly the terms of reference of the project. It should be a partnership of Government with private industry. The project management should be pressed to "develop at the earliest practical date the prototype of a commercially successful supersonic transport superior to that being built in any other country of the world."

"An open, preliminary design competition will be initiated immediately among American airframe and powerplant manufacturers with a more detailed design phase to follow. If these initial phases do not produce an aircraft capable of transporting people and goods safely, swiftly, and at prices the traveler can afford and the airlines find profitable, we shall not go further."[18]

Soon after his visit to Colorado Springs, the President sent a letter to Congressional leaders in which he discussed the criteria and the method of financing of a Government-sponsored SST. He enlarged somewhat on the last item.

"The cost of such a program is large [said the President]—it would be as great as one billion dollars for a development program of about six years. This is beyond the financial capability of our aircraft manufacturers. We cannot, however, permit this high cost, nor the difficulties and risks of such an ambitious program to preclude this country from participating in the logical next development of a commercial aircraft. In order to permit this participation, the United States, through the Federal Aviation Agency, must proceed at once with a program of assistance to industry to develop an aircraft."

The program proposed would call for a participation to at least 25 percent of the development costs by the manufacturers, and a further contribution (amount unspecified) by the airlines through royalty payments. The ceiling on the Government investment would be $750 million, although additional credit assistance might be extended to manufacturers during the production process. The President stressed that "participation by industy as a risk-taking partner is an essential of this undertaking." The objective was to build a commercially sound aircraft, as well as one with superior performance characteristics. The test of its economic soundness would be measured by "industry's willingness to participate in the risk-taking."

Thus, the project would be "principally a commercial venture," although it would "yield much technological knowledge." The President summarized the further objectives of the SST as—

To "maintain the historic United States leadership in aircraft development";

To "demonstrate the technological accomplishments which can be achieved under a democratic, free enterprise system";

To "expand our international trade" through both its manufacture and operation;

To "strengthen the United States aircraft manufacturing industry * * * and provide employment to thousands of Americans."[19]

The lag in U.S. aeronautical technology

The President's decision that the Government should participate in the development of an advanced civil aircraft had followed several expressions of concern that civil aviation was failing to advance at a rate commensurate with the domestic and international markets. On September 1, 1961, President Kennedy received a report prepared at his request by the Task Force on National Aviation Goals (Project Horizon).[20] The report was intended to "define the technical, economic and military objectives of the Federal Government throughout the broad spectrum of aeronautics." It identified the emergence of the space program and the reduced emphasis by the military on the development of manned combat aircraft as major causes for the lag in civil aeronautics development. Said the Task Force:

"An adequately funded, prudently managed, continually updated research and development program is essential to the maintenance of U.S. world leadership in aviation.

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Federal Government responsibility for aviation research has long been recognized and its participation in such research has been extensive. However, in the past Government-sponsored aeronautical research has largely been stimulated by military requirements for advanced manned aircraft. In recent years this stimulation has declined as a result of the growing concentration on development of missiles and space systems by the military and by the National Aeronautics and Space Administration. It is no longer possible for civil aviation to progress mainly by reliance on the byproducts of military-related research and development programs.

"There is no question that aeronautics is running a poor second to space technology in the time, talents, facilities, and funds expended on it within NASA. Steps must be taken to upgrade recognition of an activity in support of this national requirement.

"With the decline of military emphasis on manned combat aircraft, some shift toward a more centralized coordination of civil aviation research and development in the United States appears needed. This need is sharpened by the forthcoming requirement for more extensive Government financial participation in essentially civil aeronautical development programs, such as the supersonic transport." [21]

These views were echoed in Congress where a staff report of the Senate Committee on Aeronautical and Space Sciences noted that U.S. aeronautical technology was falling behind: "Other countries of the world, with less responsibility than the United States for peacekeeping and international prestige, have continued developments in aeronautics which could command substantial markets and adversely affect our balance of trade." [22] The report expressed concern over the assertedly diffused responsibility for national policies for aeronautics and particularly the want of a federal policy for sustained technological development of civil aeronautics. The need for an integrated national system of air transportation was real, un-met, and under-valued. Said the report, in part:

"An obvious contrast may be noted when the research and development program for aeronautics is compared with the total NASA appropriation ($124 million out of $5.012 billion or about 2 percent for fiscal year 1967). A more meaningful question is whether the funding and the program for aeronautics are adequate, regardless of the magnitude of the space program."

Also—

"Civil aeronautics is an increasingly important part of our economic system with great potential for our international balance of trade and technological prestige. [Moreover], There is a notable absence of national transportation system policy to define the role of various modes, to study the problems of interfaces between modes, and to choose among technological alternatives." [23]

Operationally, civil aeronautics seemed on the threshold of an unprecedented potential for growth, both in the United States and abroad. The United States dominated the world market for aeronautical goods and services, yet, aeronautical services, domestically, were steadily declining in quality as unsolved problems of congestion intensified. New development activity seemed to be stagnant. The nation could ill afford either the decline of domestic service or the relinquishing of its position in the world aeronautical market.

Representative Ken Hechler, speaking for the House Subcommittee on Advanced Research and Development, warned that the U.S. position in world aeronautics could easily be lost:

"The impact of aeronautics on our Nation and on our global society over the past two decades is dramatic. Those areas we once called independent geographic regions have vanished. Self-sufficient nations are also a part of the past. The art of flight has drawn the world together and whether we like our close neighbors or not, the effect is not reversible. To the contrary, the effects of aeronautical technology on the way our world functions will become even greater with time. This is an enviable position for a technology. It is enviable because it provides a view of the future in which the world's societies can accept nothing less than the rapid growth and improvement in all aspects of aeronautical products and services.

"This committee looks at this prospect of great growth and development with enthusiasm but also with deep concern. These bright prospects are predicated on the rising world requirements for aeronautical products and services. However, the number of participants in the aeronautical communty, competitors if you will, is also rising. This bright period, as it applies to the aeronautical future of any nation, including our own, is neither automatic nor inevitable." [24]

Studies by the executive branch and in both Houses of Congress found the rate of progress in aeronautic technology inadequate for future domestic requirements or to preserve the Nation's position as the world's prime exporter of aeronautical goods. Hitherto, the flow of advanced technology into the civil sector from military R&D had nourished civil aeronautics and had enabled it to dominate the world market; in the decade of the 1950's the flow of military R&D no longer served this function. To an increasing extent, military aircraft were being developed as one component of a completely integrated weapons system. The "systems approach" was a sharp contrast to the former practice of developing an advanced aircraft and then outfitting it with weapons. Highly specialized military aircraft as system components were inappropriate for conversion to civil uses. Moreover, missile systems were far more competitive than complementary to aircraft. Advocates of new missile systems challenged manned aircraft as obsolete. The impetus for missile development and employment was a major factor in diverting emphasis from aircraft development. (Certainly, it had contributed to cancellation of the B–70, originally scheduled to replace the aged B–52 in the early 1960's.) With demise of the B–70, Air Force interest in large supersonic aircraft was blunted for almost a decade.

Other areas of military aeronautics in which developments would have served civil needs were also set aside. These included VTOL and STOL systems for tactical fighter support, as well as for heavy aerial logistics to locations lacking conventional runways.

NASA had served both the military and the civil sector as a resource for research, but not for the development of whole aircraft. Here too, aeronautics was now being superseded by the space program.

Studies leading to the President's SST decision

President Kennedy in his Air Force Academy speech and the subsequent messages to Congress had resolved for the time being the three policy issues (1) There was to be an SST, (2) the program would be under the direction of the Federal Aviation Agency, and (3) it would be funded mainly by the Federal Government, with private industry assuming one-quarter of the risk, and the Federal funds ultimately recaptured from user royalties. Many studies and analyses had led to these decisions.

The first of these was the Task Force on National Aviation Goals. Its study, "Project Horizon," had recognized in 1961 that funding by the Government would be necessary, but also that they should be recovered:

"Government funds [said the report] should be utilized through the research, design, development, prototype, and probably production stages. Every effort must be made to recoup the Government's financial investment through some type of royalty system to be paid by the operators." [25]

Even before the Task Force had made its formal report, a separate three-member "SST Steering Group" had proposed separately that a Supersonic Transport Authority be formed either independently or within the structure of an existing agency.[26]

In November, 1961, Halaby established another advisory body to serve the SST steering group. It was called the Supersonic Transport Advisory Group (STAG).[27] This group recommended Federal management for the SST program and repeated Halaby's recommendation for a Supersonic Transport Authority, headed by an individual appointed by the President with advice and consent of the Senate. The SST Authority, it said, should be placed within the FAA.

"As between the FAA and NASA [reported STAG], we believe the choice is a close one. NASA has the greater experience in aerodynamic research and in managing large research and development programs. FAA has the greater knowledge and experience in the design criteria for efficient transport aircraft, and in the difficult problem of integrating such aircraft into the air traffic patterns already under FAA supervision. [Accordingly, FAA should assume primary responsibility for SST development, but not in the sense of competing with either NASA or private industry.]" [28]

The SST design visualized by STAG [29] was quite different from the version finally selected for construction. The Group judged speed rather than size to be the primary criterion for market competition with the Concorde, and accordingly recommended an aircraft of similar size and weight (about 175 tons) but capable of Mach 3.5 as against Concorde's design speed of Mach 2.0 (2360 mph versus 1350 mph). STAG predicted a range of 2400 miles, too short for non-stop transatlantic service. They forecast a preproduction development cost of $1 billion, recommending that industry furnish 10 percent. Finally, they suggested an early announcement by the President that the development of an SST receive the status of a national objective.

STAG's report came to the President in January, 1963, at about the time Congress appropriated $31 million for SST studies. He asked Vice President Johnson to form a Cabinet committee for a final assessment; a favorable report was returned June 1, 1963. Four days later, at the Air Force Academy, he announced the SST as a national objective.

Repeated Presidential endorsement of the SST program

Lyndon Johnson as Vice President was instructed by the President to continue the effort, which he had begun in the Senate, to foster plans leading to the development of the SST. To aid him, the President established a Cabinet-level committee, chaired by the Vice President, whose mission was the coordination of plans to initiate the national program to build an SST.

Johnson assumed the Presidency on Nov. 22, 1963, only a few months following initiation of the program. In January of 1964, adhering to the timetable established by President Kennedy, a 210-member, governmental evaluation group, drawn from FAA, NASA, USAD, Navy, CAB and the Dept. of Commerce reviewed the proposals submitted by three airframe and three engine companies. The review team found all designs inadequate and reported their findings to the President.

In April 1964, President Johnson announced the negative results and simultaneously announced the formation of the President's Advisory Committee on the Supersonic Transport to be chaired by the Secretary of Defense. He instructed his com-

Footnotes at end of article.

mittee and the Administrator of FAA (a member) to provide further recommendation.[30]

He received an interim report, recommending design study awards to Boeing and Lockheed May, 1964. Then, May 21, 1964, he asked Halaby, FAA Administrator to make the awards.[31]

On July 1, 1965, at the swearing-in ceremony of General Wm. McKee, to replace Halaby as FAA Administrator, President Johnson's welcoming speech to General McKee was also a mandate to proceed with the SST program. The President stressed the importance of the SST as a part of his new assignment. That assignment, he said, was "* * * to develop a supersonic transport which is, first, safe for the passenger, second, superior to any other commercial aircraft, and third, economically profitable to build and operate." [32] The President devoted most of his welcoming speech to detailed instructions for the program over the following 18 months. He explicitly reconfirmed FAA's responsibility for the guidance and full management of the program.

The final selection of Boeing and General Electric as the preferred airframe and engine suppliers for the SST was announced by McKee on Dec. 31, 1966. On April 29, 1967 President Johnson authorized the Secretary of Transportation, rather than the FAA, to award prototype contracts to these firms.[33]

This action transferred the primary responsibility for management of the SST from the FAA. Presumably it was in recognition that as a regulatory agency over air transportation, the FAA would encounter a conflict of interest if it engaged in the development of a vehicle for use in air transport which it would later be called on to certify and regulate. This problem had been foreseen by the Supersonic Transport Advisory Group (STAG) in urging that an independent office be created to manage the program. However, during President Johnson's terms of office, management of the SST remained with FAA.

The 1967 design offered by the Boeing Company encountered an unexpected setback in final design evaluation. It offered a "swing wing" or variable geometry airfoil structure which, at the present state of the art, was judged to present an insoluble problem of excessive weight. President Johnson's goal of an economically sound and competitive vehicle would be jeopardized by the design constraints imposed by the swing wing. Accordingly, the Boeing engineers asked for a year's delay to go "back to the drawing board." This delay, through 1968, ran to the end of the Johnson Presidency.

On coming to office, in January, 1969, President Nixon asserted the same favorable view of the SST as had his two predecessors in office and established an Ad Hoc Committee to review the status of the program for him.[34] On January 15, Boeing submitted a new design, calling for a "fixed wing", and FAA commenced a design review. This design satisfied the criteria and on April 1, 1969, the Secretary of Transportation sent program recommendations to the President. After further study in the Executive Office, the President sent to Congress, September 23, a request for $96 million for the fiscal year 1970 and for an authorization of $622 million for use through the fiscal year 1964, to support the SST program. In answer to criticisms that were beginning to be expressed in the Congress, the President said:

"What is involved here is not just 150,000 jobs which will be lost if we don't build it, not just the fact that billions of dollars in foreign exchange will be lost if we do not build it; but what is lost here is the fact that the United States of America which has been first in the world in commercial aviation from the time of the Wright brothers decides not just to be second but not even to show.

Now not out of any sense of jingoism but because this plane is going to be built, because it's going to bring, for example, Asia not only Japan but China, in the last third of this century 3 hours from the West Coast to Asia—I think the United States should build it and I believe that we can answer the arguments of the conservationists.[35]

Transfer of Government Responsibility for Management of the SST

On April 1, 1970, an Office of the Supersonic Transport was established as an independent entity within the Department of Transportation, reporting directly to the Secretary. As its Director, the President designated William M. Magruder,[35a] with a background as an aeronautical engineer and experimental test pilot, and experience in executive management with Douglas Aircraft Company and the Lockheed California Company. Formation of the new Office coincided with completion of preliminary phases of the SST design, up to the point at which commitments could be made for actual construction of prototype aircraft.

Establishment of the New Office of the Supersonic Transport was consistent with the responsibility of the Secretary of the Department of Transportation to conduct programs to advance the transportation art. It also complied with the recommendations of various presidential advisory groups that the SST should be under a separate office. The possibility of conflict of interest was also removed, since under the previous arrangement the FAA would be in the position of certifying for commercial service its own aircraft.

Although the authorization of President Johnson for prototype construction has gone to the Secretary of Transportation, the management role of FAA had not been changed in response to this redirection of authority. However, it should also be noted that the involvement of Presidents Kennedy and Johnson in the SST program had been so deep that they, in effect, along with var' us special advisory groups reporting to them, were practically managing the program. Both Presidents had turned to FAA as the only aeronautical office in the Department of Transportation, and as an agency under the immediate supervision of directors appointed by them, as an appropriate resources to carry the program through its formative stages without the loss of impetus that reorganization might cause. President Nixon came into office as this formative stage drew to a close. Accordingly, establishment of the new Office and the transfer of the program from FAA constituted a maturation process along lines envisioned from the start.

Change in National Aeronautics policy evidenced by the SST program

Although both NASA and FAA had long participated in or supported research, FAA in navigation aids and NASA in the proving of aircraft concepts by the use of experimental aircraft and design systems, they had always stopped short of actual development of civil aircraft. Historically, the burden of cost had been borne first by the military services, and then by the private sector of the aircraft industry. The formative years, during which aeronautical systems had developed to their present technical level and economic status, while never smooth, had been reasonably effective.

However, by the mid-1960s, parts of the air transportation network became overcrowded. Acute congestion began to distress the public and erode airline profits. Passenger safety became of concern to the public and to the Congress.

Out of this evolving concern there emerged a new national policy for aeronautics, more tacit than explicit. In essence, it called for civil aeronautical development as well as research to be funded and managed by federal agencies, for joint analytical and anticipatory studies of needs and solutions by NASA and DOT, and a redirecting of advanced research and development to meet needs and solve problems.

As the policy took concrete form, it represented a funded attack on three sets of tasks: (1) improved productivity of aircraft through the large, supersonic transport, (2) improved compatability of aircraft with the environment through improvements in engine acoustics and combustion and (3) evolution of an air transportation system on a point-to-point basis instead of from airport-to-airport; this task implied the evolution of "short-take-off-and-landing" (STOL) and "vertical-take-off-and-landing" (VTOL) aircraft. The economic and environmental aspects of the SST, the first target objective of the changed policy, is the subject of the rest of this chapter.

V. ECONOMIC CONSIDERATIONS OF SUPERSONIC FLIGHT

This section assesses the economics of the SST in the overall context of the air transportation industry, applying the cardinal principles which have determined the evolution of today's aerial transports. Since the earliest days of the SST program, the rationale for building the aircraft has been a major issue. Is the program driven by an economically wasteful desire to win in an international competition or is the SST an essential participation in a strictly practical business venture? The price tag for the Boeing SST as now envisioned is nearly twice that of the most expensive subsonic jet.[36] Can such an investment pay—or does it represent a generous gift to the affluent air passenger?

Capacity and speed as prime determinants of profit

Some of the single engined mail planes of the 1920's could carry a paying passenger. It quickly became obvious that a slightly larger plane would have about the same fixed costs, shelter, maintenance and crew, but could carry more paying passengers. Since the fixed cost would be about the same, the higher price of the plane could be weighed against the work it would do. If it could carry four fares instead of one, the higher earning rate would usually more than justify the higher purchase price.

Successful operators (those with enough available payload to merit the purchase of two aircraft) discovered another advantage of larger capacity: A slightly larger aircraft could carry the payload which now required two aircraft. The price however, might be almost double that of small ones. Even so, the larger aircraft was usually more economically attractive for two reasons: (1) a saving of about half of the fixed costs because maintenance and crew costs would be for one instead of two aircraft; and (2) flexibility because idle space in a large aircraft is less costly than the fixed costs related to owning twice as many aircraft. In essence, increased payload capability was proportionately more important than the purchase price of the vehicle, as long as the larger aircraft enabled the operator to reduce the numbers of his fleet.

Similar benefit was conferred by aircraft speed. If payload capability of all aircraft was equal and a higher purchase price bought higher speed capability, then the operator could analyze his routes and workload to learn whether the faster aircraft might make two trips per day or at least do enough additional work to permit operating a smaller fleet.

Thus, airline income was tied to aircraft productivity: numbers of passenger miles or ton miles per day. Costs were determined more by number of aircraft needed than by their purchase price.

Footnotes at end of article.

Maximum return on investment therefore favors owning the fewest possible number of high productivity aircraft. An operator whose payload for a given route doubled, could accept this additional business by buying a second aircraft. But a more economical solution would be to dispose of his small aircraft in favor of one with twice the payload capability. In practice, he would look for somewhat more than the doubled payload capability so as to have a margin of future growth.

Aircraft costs as minor factor of airline economics

As aircraft get larger and faster, price rises sharply. The impression may be general that the price of a new plane today has already risen completely out of proportion to its slightly smaller predecessors. But the operator is buying a piece of production equipment in which price is related to how many revenue units (seat miles and ton miles) it can produce an hour. Each time aircraft have increased their size and speed, the purchase cost per seat mile yielded in an hour has become less, not more.

The price of a Boeing 747 is about 20 million dollars, almost twice the price of the Boeing 707. Yet it is slightly faster and can haul more than twice the payload. The purchase price in terms of revenue units yielded per hour is therefore lower, not higher, than the Boeing 707. In addition, the operator has reduced his fixed costs by trading two aircraft for one.

Actual financial status of U.S. airlines

Meeting the rising market for air travel with the smallest possible fleet has merits that extend far beyond the economic health of the operator. The table shows actual passenger miles for 1959 and projects totals for future years. (It is only illustrative, being based solely on passenger-mile requirements).

TABLE 1.—NUMBER OF AIRCRAFT OF VARIOUS TYPES NEEDED FOR ANNUAL TRAFFIC

Aircraft	Number of aircraft of each type required to carry annual traffic [1]			
	1959	1971	1980	1990
DC-3	10,167	47,416	145,150	284,833
DC-6	1,794	8,378	25,615	50,265
707	469	2,188	6,699	13,146
747		786	2,406	4,721
SST (Boeing 2707—300)			1,469	2,882

[1] Office of Supersonic Transport Development, Department of Transportation. "U.S. Supersonic Transport—Grey Book." Prepared by the Office of the Supersonic Transport (July 2, 1970), p. 6, J. 5 (mimeo).

TABLE 2.—GROWTH OF AIR TRAVEL VERSUS 6 OF COMMERCIAL FLEET

	Aircraft fleet	Percent jets	Billion passenger-miles [1]
1959	1,827	16	29.3
1969	2,403	94	95.9
Increase	576		66.6
Percent increase	31		230

[1] Table derived from information contained in Air Transport Association of America official publication, "1970 Air Transport Facts and Figures," Washington, D.C., p. 43.

In spite of the fact that the increased capability of aircraft has expanded service faster than fleet size, many of today's airports and part of the air traffic control system are saturated by today's fleet of 2,500 aircraft. The growth in domestic air travel compared with that of the commercial fleet is illustrated below.

Step function gains in aircraft productivity

The first leap in productivity of the postwar transport aircraft was the transition from the small twin engine aircraft like the DC-3 to the four engine aircraft in the DC-6 class. Speed was doubled and passenger capacity was multiplied by more than five.

Growth of air transportation shows a characteristic step function. Each new generation of vehicles has produced significant increases in capacity, performance, and economy of operation over its immediate predecessor. The decade chosen for comparison in the preceding tables covers the second leap in productivity—the transition from the piston engined plane to the jets. Both passenger capacity and speed were doubled over that of the DC-6's and DC-7's. Productivity per aircraft therefore rose by a factor of 4.

In each transition period, aircraft purchase prices rose sharply, but the additional cost was small in relation to their capability to produce revenue. The effect of the more productive equipment was reduction in operating costs despite the steady overall inflationary factors which tend to drive all costs upward. The following table shows the point at which the effect of cost reduction of the new aircraft, and the effect of cost inflation cross.

TABLE 3.[1]—AIRLINE REVENUE VERSUS PASSENGER-MILES, 1959-69

	Total, operating revenues	Total, operating expenses	Revenue passenger-miles flown (millions)	Net profit or loss	Rate of return on investment (percent)	Profit margin on sales (percent)
Total industry:						
1959	$2,618,471	$2,496,122	36,371.8	$72,881	6.2	2.8
1964	4,250,838	3,780,741	58,493.7	223,172	9.8	5.3
1965	4,957,851	4,285,923	68,676.5	367,119	12.0	7.4
1966	5,745,038	4,969,541	79,889.3	427,633	10.9	7.4
1967	6,864,726	6,156,532	98,746.6	415,388	7.6	6.1
1968	6,762,683	7,247,612	113,958.3	216,130	5.0	2.8
1969	8,792,027	8,396,219	125,414.2	55,308	3.3	.6

[1] "1970 Air Transport Facts and Figures," op. cit. pp. 26–34.

The transition to the jets began in 1959 and was completed by the middle of the 1960's. Profits rose steadily and peaked during 1965. The advantage of the improved equipment and the effect of steadily rising inflationary costs crossed during 1966 and profit began to decline even though demand continued to rise steadily. By 1968 the advantage of the improved equipment, in terms of airline operating profit had largely vanished. The financial status of the airline industry in 1969 reveals a marginal status for survival.

A general decrease in the amount of service now available could preserve profit margins for a time. A decrease in the number of fights could increase the load factor on remaining flights. Single-flight-per-day routes having light loading could be cancelled. Remaining flights could be rescheduled to use the uncrowded midnight to morning hours to reduce losses due to congestion. In the long term, however, the operators face the alternative of fare increases or new aircraft designs which will permit another transition toward higher productivity/(larger and faster aircraft).

In the ten year period between 1959 and 1969, inflation decreased the purchasing power of the dollar by 28%. Nevertheless the average passenger fare remained about the same. When this factor is considered, and 1969 fares are adjusted for constant purchasing power based on the 1959 dollar value, it may be seen that the average air fare has decreased in price by more than 25% during the decade.[40]

Passenger Amenities—a Derivative Gain of Design Advances

The little mailplanes of the 1920's, with an extra cockpit for a paying passenger were replaced by larger single engine aircraft with closed cabins which would accommodate from 2 to 6 passengers. A few twin engined and three engined fabric covered planes appeared in the late 1920's, offering up to twice as many seats. Passenger comfort rose markedly with each change. One aircraft of the late 1920's even featured a toilet. (Unfortunately its only door was an exterior one. It was for use at refueling stops which might not have terminal accommodations).

Footnotes at end of article.

With the all-metal twin engined aircraft of the early 1930's, the Douglas DC-2, the Boeing 247, and the Lockheed Electra (the first Electra), the prerequisits of courage and fortitude was greatly reduced for the air passenger. With these aircraft up to 14 passengers could be carried with a fair degree of comfort, if not convenience.

In the mid 1930's the sumptuous transoceanic four-engined flying boats of Sikorsky, Martin, and Boeing appeared. These giant aircraft were limited in payload because of the fuel their flights required. Their prime function was to carry mail, passengers being allowed to use up whatever margin of payload left after loading the mail and varying amounts of extra fuel to meet expected weather. Ten or fifteen passengers might be allowed. However, they enjoyed a degree of spacious luxury never again approached on any aircraft.

The next evolutionary step in passenger capability came in 1939 with the first pressurized aircraft, the 33-passenger Boeing Stratoliner and the unpressurized 40-passenger DC-4. These aircraft cruised at speeds around 225 mph and were the first to offer the security of long-range flights; the Boeing was even able to offer "above the weather" flying.

Incremental advances followed throughout the next two decades. The DC-4 was replaced by larger pressurized versions, the DC-6 and then the DC-7. The Lockheed Constellation appeared in competition to the DC-6 and grew in size and speed until Lockheed's second Electra (turbo-prop powered) appeared. These propeller driven transports had reached cruise speeds somewhat higher than 350 mph and passenger capacities more than double that of the 40-passenger DC-4.

Both Douglas and Boeing introduced turbojet transports in 1958. In one step, these aircraft more than doubled the productive capacity of any previous propeller-driven transport. In their "high density" seating versions, either aircraft could carry 177 passengers across the country at 500 mph. The earlier model of either jet could do the work of 3 DC-7's, thus offering unparallel savings in terms of productivity.

In the mid and latter years of the 1960s, growth versions appeared, adding vehicle productivity through extra size without notable increases in speed. Similar modifications have extended the productivity of the Boeing 747, the Lockheed 1011, and the Douglas DC–10. They have more than doubled the productivity of the 707 and DC–8 through increases in size alone.

Throughout this entire period, the price of air travel has remained almost constant. The prime consequence of the growth in size and speed of aircraft has been the economic gain of higher productivity. However, the circumstance that higher productivity, throughout this history, has also yielded improved consumer appeal, comfort and safety, has been a rewarding one to both the industry and the passenger. A decade ago the passenger miles accumulated by trains and buses exceeded air travel by 137 percent; today, air passenger miles exceed those of surface travel by 300%.

The SST as the next major increment in vehicle productivity

Although in the past, major increases in productivity resulted from the combined effect of higher speed and larger capacity, future gains for the subsonic air carrier depend on larger size alone. Except for marginal [41] improvement, the modern subsonic jet has reached upper end of its speed capability. The remaining option, greater size, remains open; the Boeing 747, the Lockheed 1011, and the DC–10 exploit this option. The table which follows compares the productivity related to increased size alone with that related to increased size combined with higher speed. It also reveals the reasoning which led to the large capacity of the Boeing SST. When the SST is operating at speeds comparable to the 707 and 747, its productive capacity becomes a size comparison, and it appears midway between these subsonic aircraft.[42] When it flys supersonically, however, its productivity is 500% greater than that of the Boeing 707 and almost 300% greater than that of competing SST's under development abroad.

TABLE 4.—RELATIVE PRODUCTIVITY INDEX IN SEAT MILES PER HOUR [1]

Aircraft	Subsonic index	Supersonic index	Passenger capacity	Cruise speed, m.p.h.
Boeing 707–320	1		179	600
Boeing 747	2.1		370	600
Boeing SST 2707–300	1.7	5	298	1,786/600
Concorde I	.7	1.6	128	1,350/600
TU–144	.67	1.7	120	1,550/600
B–70	.56	1.7	100	1,800/600

[1] Subsonic cruise speeds shown are approximate. Supersonic cruise speeds may also vary slightly from these design figures. Cruise speed data furnished by the Department of Transportation.

The index in the preceding table relates only passenger capacity and speed. Other payload is not considered. For comparative purposes, the Boeing 707 is rated as "one." Turn-around time is approximately a constant for all models. Downtime for periodic maintenance is not considered but in fact maintenance is based primarily on hours flown and therefore is less of a penalty to a fast aircraft than to a slow one so that a fast aircraft can do more work than a slow one between overhaul periods.

Early economic feasibility studies of the SST

Since 1960, the FAA various manufacturers, and the airlines have conducted virtually a continuous series of studies on supersonic transportation as capability and as a market. United Research, Inc., of Cambridge, Mass., conducted a preliminary FAA study contract in 1960. In 1963, President Kennedy initiated a study aimed at providing an economic overview of the feasibility of a national program to build a supersonic transport. The study was conducted by Eugene R. Black and Stanley J. Osborne. Completed in December of 1963, the Black/Osborne report provided a review of the economic aspects of the program and included recommendations as to the roles of the manufacturers, the airlines, financial institutions, and the United States Government.[43]

The FAA consolidated the more usable portions of prior studies and incorporated their own statistical materials. Their study, the *Economic Feasibility Report, U.S. Supersonic Transport,*[44] April 1967 provided "baseline" analysis and a format that subsequent studies could update.

Two independent studies prepared as a part of the overall economic evaluation were also completed in mid 1967.

Review of the Economic Feasibility Report for the SST and Supporting Materials, 3 April 1967, Charles River Associates.[45]

This report was the result of a review of the aircraft demand sections of the FAA *Economic Feasibility Report*. It includes revised methodology from the IDA report and recalculation of certain basic input data on costs and yields for the aircraft mix expected in the 1975–1990 time period.

SST Financial Planning Study, May 1967, Booz, Allen and Hamilton

Discussion and analysis of the production financing problem in terms of order of magnitude dollar requirements to the manufacturers and airlines, risk factors, potential sources of capital, and evaluation of the various means by which the program might be financed including alternative methods of Government support.

Progress and design decisions for the final size and operating characteristics of the SST continued to replace the assumptions in the studies with firm data. Plans to use a "swing wing" were dropped in favor of a fixed wing. Payload and number of passengers as well as range and other operating data were determined.

In May 1969, Boeing issued a study of the dynamics of SST introduction into commercial operations, based on a detailed analysis of 142 international routes. Overland flights were assumed to operate below boom producing speeds and revenues were based on current economy fares, with yields varied in relation to the degree of market penetration. The study concluded that a fleet of 500 SST's by 1990 was economically feasible and that the currently defined SST would not require increases in the current fare structure to produce a reasonable profit for the airlines.[46]

The Boeing study has a special significance in that, for the first time, the SST was evaluated in terms of real, not hypothetical data. Actual routes, curfew restrictions and time zone differentials were analyzed. Operating characteristics and cost data were based on a firm design rather than a range of assumptions.

The updated study predicted a market potential of 515 aircraft, very close to the FAA estimate of 500 to be sold by 1990. (Charles River Associates had predicted that 805 would be required within this time period.)[47] It assumed a six fold traffic increase for the twenty two year period between 1968 and 1990. All studies assumed the sonic boom restrictions, barring flights at boom-producing speeds over populated areas.

There was uniform agreement among the various later studies that by 1990 the SST would constitute approximately a sixth of the world fleet. The range of these estimates has a variation based primarily on size of aircraft sold rather than available load factors. Estimates for the total fleet (Western World) of long range aircraft (short haul aircraft for flights of 700 miles or less are omitted) are as follows:

Range of 1990 market estimate

SSTs	500– 800
Concordes	200– 400
New and replacement subsonic jets	2,425–3,870
Total airplanes	3,125–5,075

Selected highlights of the physical and operating characteristics of the Boeing and foreign SST's along with the Boeing subsonic 747 are shown below:

TABLE 5.—WEIGHT, PAYLOAD, AND OPERATING COST COMPARISON OF SST'S AND THE BOEING 747 [1]

	B2707–300 (281 B)	Concorde	TU–144	747
Aircraft characteristics:				
Gross weight (lbs.)	750,000	385,000	330,000	710,000
OEW (lbs.)	327,660	170,000		353,621
Airframe weight (lbs.)	275,260	139,600		320,021
Engine weight (lbs.)	13,100	7,600		8,400
Number of seats (10/90 split)	281	126	120	384
Total payload (lbs.)	[2] 60,200	28,000	26,400	98,200
Range, statute miles, (standard day)	4,000	4,000	4,000	4,375

	B2707–300 (281 B)	Concorde	TU–144	747
Operating cost per seat-mile on comparable basis (cents):				
2,644 statute miles:				
Direct operating cost	1.12	1.54		0.93
Indirect operating cost	1.30	1.25		1.40
Total	2.42	2.79		2.33
3,565 statute miles:				
Direct operating cost	1.06	1.60		.90
Indirect operating cost	1.14	1.20		1.33
Total	2.20	2.80		2.23

[1] Data obtained from Department of Transportation, Dec. 30, 1970.

[2] Based on 200 lbs. per passenger and 4,000 lbs. cargo.

Pros and cons of international finance

Items with high export potential are viewed historically as positive [48-49] contributions to the balance of payments. The SST, as a manufactured item with high export potential, would become the latest and highest priced contribution to the world aviation market, 84% of which is now held by the United States. In the case of the SST, however, question has been raised as to whether or not the balance of payments would benefit from sales.

Some opponents of the SST program, have contended that the project would fail and thereby waste the risk capital loaned by the Government. Other opponents, expressing fear that the SST program would be successful, suggest that its very success would result in a net outflow of funds.

Footnotes at end of article.

The contribution of the proposed Boeing SST to the international balance of payments position of the United States—along with other factors, not all economic—has received considerable adverse assessment by a number of leading students of economics. Surveyed during the summer of 1970 by the Sierra Club (itself a center of opposition to the SST on environmental protection grounds), the economists[50] offered such criticisms as the following:

It had failed the test of the marketplace;

It was not necessary as an investment for the United States to achieve full employment;

Its effect on the U.S. balance of payments position would be trivial;

Its economic consequences were purely speculative;

Its speedier transit to Europe was of doubtful attractiveness to passengers;

There were alternative uses for Federal funds of greater importance, such as to fund critical social programs;

There would be adverse environmental effects;

The present program was purely opportunistic; it would be preferable to catch up with the European developments, later on, rather than to assume the lead now;

Federal funds were drawn from the whole population, while the SST would benefit only a part which was an inequity:

If the risk was too high to attract private capital it did not warrant Federal spending;

It was a subsidy for luxury spending;

It was a sophisticated version of "leaf-raking";

Its costs would be defrayed by raising fares on large subsonic aircraft.

Only Professor Wallich was ambivalent on the question. While opposed to the SST on environmental grounds, he observed that in any event the Concorde was being built, and if it proved commercially viable, then the United States should follow suit "to capture such economic advantages as are to be had by building the plane." He continued: "Failure to build would inflict lasting balance of payments damage with little compensating environmental gain."[51]

The question as to whether the U.S. balance of payments would be affected by the SST positively, negatively, or not at all, hinges on two sets of assumptions:

(1) The prospect of future overseas sales of the aircraft (or, conversely, of purchases by U.S. airlines of foreign SSTs); and

(2) The net effect on overseas travel, both business and pleasure, of the U.S. supersonic transport, with or without the existence of a foreign-made SST, and the net derivative effect of such travel on the U.S. balance of payments.

On the second issue, it seems fruitless to speculate, although many have. Perhaps the most trenchant observation to be made is that a large increase in interchange of persons across international boundaries might contribute to international understanding and thus further peace. If true, the investment in a means to facilitate international travel would be worthwhile at many times the cost. But to speculate about the future effect of crossing the Atlantic in two hours instead of six on the rate of travel or the flow of business investment can produce no useful guidance.

On the other hand, the prospect of sales of an American SST abroad is an issue of substance and consequence. Is it preferable as a matter of U.S. policy that U.S. airlines equip themselves with costly SSTs produced in England-France, or the U.S.S.R.?—Or that foreign airlines equip themselves with costly SSTs produced in the United States? If the Concorde project is abandoned should the U.S. project be also? And if one is continued, should the other be? Some measure of the quantity and flow direction of dollars associated with potential sales of the U.S. SST is shown below.

Footnotes at end of article.

On the assumption that the American SST is competing only with the first generation Concorde (and neglecting altogether the question of the Soviet SST), it is estimated that 60 Concordes would be purchased by U.S. airlines and that 270 Boeing SSTs would be exported, yielding a net $10.1 billion in *exports*. If the Boeing SST were not built, it is estimated that U.S. airlines would acquire 300 Concordes, yielding a net $7.0 billion in *imports*. The total effect of the U.S. SST on the U.S. export-import trade balance under this assumption would be $17.1 billion.[52]

Corresponding figures under the assumption of a second-generation Concorde by 1990 are: with an American SST, $10.1 billion of net *exports;* with no American SST, $12.0 billion net *imports*, a swing of $22.1 billion.[53]

The issues of risk and the test of the market place

It is necessary to recognize that any technological innovation involves engineering risk. That such a risk is involved in the SST is obvious; the long history of military troubles with large supersonic aircraft shows this. On the other hand, the very considerable experience of the aircraft industry with such military aircraft has done much to reduce the magnitude of the engineering risk for the future.

The fact that Government funding has been found necessary for the SST—a source of criticism for some economists—is not, however, primarily attributable to the degree of engineering risk. Rather, the primary factor is the sheer magnitude of the investment required. Even if there were not engineering risk, the raising of the substantial development funds required would be difficult. In addition to engineering risk, there is also the matter of economic risk—the chance that economic conditions might be unfavorable to market reception of the SST when it is ready, chance that a superior Soviet SST or some unforeseen political development might present a future obstacle, and the sheer difficulty of managing such a large engineering development. However remote, this economic risk must be acknowledged as a possibility, and thus a handicap to low-interest-rate capital funding. These two risks and the size of the investment and the size of the project are not additive, but factors to be multiplied in assessing the difficulty of private funding.

However, the investment of Federal funds to support large-scale, high-cost, technological development beneficial to private enterprise is an activity with many precedents: agriculture, irrigation works, atomic energy, titanium, synthetic rubber, research in coal utilization, and hydroelectric projects all come under this category. Government investment to support transportation have included many commercial-type developments, of which the following are illustrative: steamships, the nuclear ship, the hydrofoil ship, the St. Lawrence Seaway, the Panama Canal, the Inland Waterways, U.S. Barge Lines, the high-speed train, the Panama Railroad and the Alaskan Railroad.

Such precedents afford assurance that U.S. funding of a potentially attractive (or essential) but high-cost technology is a reasonable course. Whether or not it is an economic success would seem to depend on the engineering skill of the builder and the managerial skill of the airlines. And whether it constitutes a serious hazard to the global environment is a question remaining to be discussed. However, it seems reasonable to conclude at this point that there is a good chance that the SST affords an economic opportunity to the airlines and perhaps also the U.S. balance of payments. Undeniably, it is an important source of job income with a tangible product.

VI. THE ISSUE OF THE ENVIRONMENTAL IMPACT OF THE SST

Whatever the nation of the aircraft that first extends supersonic travel into the civil sector, its introduction seems likely to come at a time of growing concern over the impact of technology on the environment.

The traditional use of machines and technological processes has shown little regard for the environmental burden or hazard they might offer. Today, this burden is no longer deemed acceptable as an inevitable penalty of civilization. Contaminants, unwanted noise, thermal energy, and radiation now signify impairment of the quality of life. Sentiments in favor of preserving or restoring the quality of the environment are expressed in the United States, the Soviet Union, Western Europe, Japan, and doubtless elsewhere.

In the recent past, the increasing use of civil aircraft and the increased burden of environmental consequences of such use, have brought air transportation under scrutiny—even attack. Air travel is a great consumer of space: in terms of large airports and service facilities, traffic holding patterns around large terminals, and airlanes crisscrossing the continent. Almost all engines are noisy. The soot and smell of combustion products of kerosene and gasoline fuels contribute to air pollution. Other problems are created by imperfections of air transportation as a system—the separation of passengers and luggage, the annoying sequences of transport stages, problems of aerial congestion over terminals and busy air lanes, and the conflicts over airport zoning.

With the prospective advent of the SST, attention has turned to the question as to its special effects on the environment. The question can be approached from many directions, dependiing on the point of view of the analyst. Not all critics of the SST are "anti-science" and not all advocates of technological advance are uncritical of its consequences. The study by the Committee on Science and Public Policy of the National Academy of Sciences of "technology assessment" encapsulates the issue in these words:

"Whereas a few years ago, for example, the idea of a supersonic transport seemed to many the obvious fulfillment of man's airborne destiny, today some who might once have greeted the SST with unbounded enthusiasm are asking whether it is truly a sign of progress to fly from Watts to Harlem in two hours, vibrating millions of ears and windows in between.[54]

This reference goes on to suggest that the rational choice facing men—

Is between technological advance that proceeds without adequate consideration of its consequences and technological change that is influenced by a deep concern for the interaction between man's tools and the human environment in which they do their work. [Italics in original][55]

In other words, technology should be assessed not from the point of view of an assumption that it is guilty, but rather to identify possible problems to be dealt with in a systematic, orderly, and effective fashion, to ensure that the final product achieves an acceptable, optimum compromise among the many objectives subsumed under "environmental quality."

There have been many criticisms of supersonic aircraft as an impairment of the environment. Supersonic vehicles offer new levels of power and a new variety of sonic disturbances. They propose to occupy a stratum of the atmosphere quite new to civil aircraft. Clearly, environmental compatibility takes its place with other more traditional performance criteria to be satisfied before this new vehicle can be accepted as useful.

A tabulation of the issues that have been raised regarding the SST in its relationship to the environment would include the following:

1. Micro-environmental issues: a. Sonic boom; b. Engine noise on and near the ground; and c. Air pollution.

2. Macro-environmental issues: a. oxygen balance upset; b. excess of global carbon dioxide atmosphere; c. toxic additives; d. weather modification from water vapor and particulate matter; and e. radiation hazard (ozone layer depletion).

Apparent resolution of the sonic boom issue

Sonic boom test programs [56] 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 a practical education in the phenomenon. Even when the booms were reduced far below any destructive potential by altitude or distance of the source they proved hard for some people to tolerate.

The announced 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 ruling is supposed to apply to all civil aircraft, domestic or foreign, but not to military aircraft over which the Authority has no jurisdiction.

A sonic boom created by a jet fighter flying "on the deck" can cause pressure changes exceeding 100 pounds per square foot, enough pressure to damage certain types of buildings. Air Force tests, in which the pressure rise ("overpressure") of sonic booms was gradually increased, revealed that damage first appeared when the overpressure reached 7½ pounds per square foot. At this pressure, several panels of glass in a greenhouse were cracked.[57] The greenhouse was the most fragile of the test structures and the over pressure of 7½ pounds per square foot [58] was therefore regarded by the Air Force at that time as the lower edge of the pressure range at which point there is one chance in 100,000 of structural damage.

The civil aircraft ruling proposed by FAA which forbids the sonic boom over land has relaxed public concern over this aspect of the SST to some extent. 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 a nominal overpressure on the ocean of 2 to 2½ pounds per square foot.[59] This is the pressure change experienced when one rises approximately four floors in an elevator. Fish or the hull of surface vessels in the ocean experience pressure of this magnitude from the passage of a ripple about ½" in height. This is an insignificant pressure change; however, even in the most intense of sonic booms the actual change in pressure is not particularly high. The phenomenon is noteworthy because of the suddenness with which it occurs. The low altitude pass that can damage certain types of buildings with an overpressure exceeding 100 pounds 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. For example, a rise from sea level to 5000', the altitude of Denver, Colorado, for example, creates a pressure change of 355 pounds per square foot.

If a marked change in air pressure 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, expecially 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 if the passenger was becalmed in a quiet sea. However, on an ocean liner, only those on the open deck would be likely to hear it because 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 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 aspects of sound measurements, is logarithmic. In essence the scale relates acoustic energy to sound perception or loudness. Each increase of ten decibels signifies a tenfold rise in energy, but because the ear responds in a logarithmic manner, the tenfold rise in energy indicates only a doubling of loudness. Conversely, if a sound is reduced by ten decibels (e.g., a reduction from 130 dB. to 120 dB.), the lower level has only 10% of its former energy, but its loudness has been reduced to only 50% of the former value.

The decibel ratings for sound energy have turned out to be inadequate in studies of jet engine noise. The irritation value of jet engines remained higher than that of the deep toned piston engines even when the decibel ratings of the jets were lower.[60]

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 properly 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 EPNdB.

Reduction of jet noise by categories of operation

There are three phases of flight (all of which are on or near the ground) 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.

Federal Aviation Regulation part 36 (FAR 36) has limited the noise level of large subsonic jets to 108 PNdB. The regulation, however, does not apply retroactively to include aircraft certified prior to date of issuance. The McDonnell Douglas DC-10 and the Lockheed L-1011 are certified under FAR 36. However, these new aircraft are not yet in service. The familiar jets, the Boeing 707 and 747, and the McDonnell-Douglas DC-8, do not comply with the 108 PNdB stipulated by FAR 36. In some cases, such as the approach phase of a 707, the sound produced is double that permitted by FAR-36.

Existing subsonic jet noise is a continuing source of controversy. Retrofitted acoustical treatment is extremely costly, but despite the cost, the process is being considered as the only recourse to gain public acceptance.

The much large engines of the SST's, on both the Boeing and foreign aircraft, might be expected to produce much more unwanted sound than the worst of the subsonics now in service.

Several sets of unofficial decibel ratings have been associated with both the Boeing and the Concorde aircraft. No information is available concerning noise levels generated by the engines of the Soviet SST. The ratings have indeed indicated high noise levels (exceeding FAR-36) on one or more phases of flight. In the case of the Concorde, real measurements were possible, but changed as the engines and nacelles guide vanes and other devices were modified. In the case of the Boeing, the decibel ratings were either calculations or were based on tests of the engine before its installation in a prototype.

Both Boeing and the Concorde makers are aware of the necessity to quiet their high thrust engines. This seemingly formidable challenge is rapidly being resolved and noise levels equal to or less than today's subsonic jets appear to be within reach.

In a recent public disclosure,[61] Boeing commits their SST to the subsonic requirements F.A.R. 36:

"Prior to production commitment, the capability of the commercial SST to achieve noise levels consistent with those required for certification of new four engine intercontinental subsonic transport aircraft will be demonstrated."

The British Aircaft Corporation (B.A.C), are similarly encouraged with the progress of their acoustic research. In one way, their challenge is less than that faced by Boeing in that their engines are much smaller. However, in another sense, it is more difficult because their acoustical treatment must be retrofitted into a design which was "frozen" 8 years ago.

Nevertheless, their progress has already given them the assurance that their earliest commercial models will produce less noise than today's subsonic jets, and their later models will be even quieter. B.A.C. will shortly release a public statement to the effect that the Concorde will comply with all existing noise regulations at the time it enters service.[62]

So much has been said in recent times about the noise of the SST, specifically high "sideline" noise—(the sound of the takeoff) that some discussion of the statements is appropriate. The most widely quoted comment equated the sideline noise of the SST with that generated by 50 Boeing 707's departing simultaneously. The basis for the comparison was an early decibel rating of the SST engine, taken without acoustical correction.

The premature use of such a figure as a final sound rating ascribed to the aircraft, is misleading a person who is unfamiliar with the peculiarities of sound measurement systems or with the physiology of hearing would be mislead into thinking that when the SST released its brakes to depart, he would hear a sound 50 times as intense as that of a single 707. The fact is that he would not. In the situation described, he would hear a sound about twice as intense, not 50 times as intense. The figure of 50 refers, not to what the ear hears but to energy level, and energy has only a logarithmic relationship to perceived sound, not a linear one.

It must be recognized that neither Boeing nor Concorde have as yet reached their target sound emission levels. The outcome of any research cannot be known with certainty before the fact.

Acoustical correction of jet engines is a new field, about five years old. However, the early results of this research are now being applied to new jet engines. The noise of the new engines is about half that of the older ones despite a fivefold increase in thrust over the past 12 years. Boeing's confident and voluntary commitment to a target sound emission level much lower than today's subsonic jets may stem from this rapid progress and also from the fact that their schedule does not foresee commercial production for another eight years.

Radiation exposure in stratospheric flight

One environmental issue of the SST concerns only the passengers and crew in flight; this is the question of exposure to penetrating, ionizing, solar radiation at the high altitudes of supersonic flight.

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The blanket of atmosphere provides a shield that largely absorbs the changed particles and X-ray-like radiation emitted by the Sun, thus shielding the surface. But at altitudes of 60 or 70,000 feet some of this protection is removed. (Fortunately, almost ⅔ of the intensity of radiation at 80,000 feet is removed by descent to 60,000 feet.) Solar radiation is not constant, but is known to reach peaks of intensity resulting from solar flares. Variations also occur because the earth's magnetic field tends to deflect the particulate part of the solar radiation toward the poles and away from the equator and temperate zones. A "worst case" exposure would therefore be an SST flying over a polar route in sunlight at very high altitudes, and especially during a period of intense solar flare activity.

The question is whether the exposure to solar radiation in a high-flying SST would be serious enough to cause concern. In general, it can be said that except for the infrequent, intense solar flare, the risk is trivial. However, the issue is complicated enough to warrant extended discussion.

Controversy has persisted ever since the early days of the atomic energy program, as to the statistical consequences of radiological damage to man. It is generally agreed that all penetrating, ionizing radiation produces biological change in human tissue and that at some level of exposure the change is significant enough to be called "damage". What is less certain is the rate and extent to which the body is able to repair this damage. The consensus is that some repair of radiation effects does take place, and therefore the evaluation of radiological effects must be performed in relation to rate of exposure. (In other words, if the rate of exposure greatly exceeds the rate of repair, serious damage can be expected.)

The effects of ionizing radiation are measured in terms of the unit of exposure called the REM.[63] In evaluating the extent of exposure of SST passengers and crew to solar radiation, many questions need to be resolved, such as: how many flights are made? During how long a period? What is the probability of any unusually intense solar flare activity? It is also germane to ask how much other ionizing radiation the passengers might have been exposed to.

The established standards for radiation exposure used by the Federal Government deal separately with the general population and occupational exposure. X Ray technicians and others whose work exposes them to ionizing radiation may not be exposed to more than 5 REM per year. Individual members of the general public are not to be exposed to more than one/tenth of that amount.[64] Radiological health philosophy is to keep exposures well below such limits and not to regard them as "speed limits".

Wide differences in exposure from naturally present or "background" radiation on the earth's surface have been observed. Background radiation exposure varies because of the differing distributions of radioactive materials in granite, brick, monazite sands, and other stony materials. The extremes range between 0.055 REM/year in the mid-Atlantic Ocean to 17.5 REM/year at Guarapara Beach, in Brazil. Measurements taken in New York City have ranged from 0.07 to 0.13 REM; measurements in Stockholm from 0.15 to 0.52 REM.[65] (This normal background radiation level would, of course, be subtracted from the level to be encountered by an SST passenger, in order to determine the difference at high altitude flight.)

Medical x-rays constitute the largest single source of population exposure to x-ray-like radiation. The range of possible exposure varies from 0.05 REM for a chest x-ray to as much as 60 REM for a gastrointestinal examination by fluoroscopy.[66] The U.S. average annual medical x-ray exposure per person is probably between 0.05 and 0.07 REM/year according to the National Council on Radiation Protection and Measurement.

The "worst case" exposure for an SST flight over the polar regions at an altitude of 70,000 feet would represent an average inside exposure of .0018 REM/hour or about .005 REM for a three-hour flight at altitude. A pilot flying all year long on such a route would be in the air for about 900 hours, and at cruising altitude about half the time. His dose per year would be significantly less than 1 REM/year.[67] A passenger who accompanied this "worst case" pilot on half of his flights would not exceed his "maximum permissible dose" of 0.5 REM/year.

The most severe solar flare recorded, 23 February 1956, would have resulted in a significant increase in dose rate. A flight during such an event would have resulted in a dose rate as high as about 4 REM/hour. Although such events are infrequent, it would be necessary to provide against them. This can be accomplished by the use of radiation monitoring instruments aboard the aircraft. Should such an event occur, the increase in solar radiation would be immediately detected and the aircraft could descend to a lower altitude where the atmospheric shielding would be sufficient to keep the intensity within acceptable limits.

The problem of air pollution

Within the city, the work efficiency obtained from fuel becomes a matter of environmental quality. The table below compares fuel consumed per horsepower/hour for various types of power sources.[68]

TABLE 6.—*Power Source vs. Fuel Efficiency*

Power plant and 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)	0.3

Aerial commuter systems such as VTOL and STOL offer the city high production vehicles equipped with higher-temperature, cleaner-burning engines as compared with standards for surface vehicles. Of more importance to the city is the fact that exhaust from these vehicles, except while landing and taking off, 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 effluents) of all vehicles involved. Aircraft are not immune to the problem of traffic congestion, but increased capacity of aircraft works to reduce numbers required.

The effluents of combustion emitted outside of a city do not present a serious pollution problem when compared with those allowed to concentrate within a city. However, they can not be ignored.

Aircraft, particularly jet engined aircraft, emit the lowest quantity of pollutants in relation to the weight of fuel used of any vehicle. Also their effluents are released high in the air where they are readily dispersed.

The following table shows the pollutant yield for various vehicle engine systems, based on using the same quantity of fuel.

TABLE 7.—POUNDS POLLUTANT EMITTED PER 1,000 POUNDS FUEL CONSUMED[1]

Vehicle	Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulfur oxides	Total (rounded)
Auto	200.0	20.0	40.0	1	1	262.0
Piston airliner	100.0	50.0	15.0	2	1	168.0
Ocean liner	(2)	10.0	.01	1	20	31.0
SST	.9	3.5	.5	1	1	6.9
Subsonic jet	.1	3.0	.5	1	—1	6.5

[1] Table furnished by Department of Transportation.
[2] Negligible.

To 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.

TABLE 8.—EMISSIONS PER 1,000 SEAT-MILES; POUNDS OF POLLUTANTS EMITTED PER 1,000 SEAT-MILES[1]

Vehicle	Fuel[2]	Carbon monoxide	Oxides of nitrogen	Hydrocarbons	Particulates	Sulphur oxides	Total (rounded)
Auto	100	20	2	4	.1	0.1	26.0
Piston aircraft	133	13.3	6.6	2	.2	.1	22.3
Ocean liner	660	(3)	6.6	.1	.6	13.2	20.5
SST	193	.17	.68	.10	.19	.19	1.3
Subsonic jet	170	.17	.51	.1	.17	.17	1.1

[1] Table furnished by Department of Transportation.
[2] Pounds per thousand miles.
[3] Negligible.

Finally, 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.

In all comparisons, the turbine engine powered aircraft is superior to other systems considered. The piston engine, particularly when used in automobiles, is clearly the worst.

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.

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The comparative data shown suggest that the technology of the high temperature turbine used in modern aircraft if applied to automobiles, would significantly reduce exhaust concentration and toxicity. The aircraft turbine, as compared with the automobile engine, produces less than 3% the toxic effluents for the same amount of fuel consumed. The amount of fuel required per hp/hr is also reduced by more than 50%.

The approach taken in the preceding discussion of the impact on the urban environment of transportation effluents has employed the criterion of effluent quantity per unit of transport service. From the engineering point of view, this is a valid approach. It poses for the city dweller the question: if technology has maximized transport service with minimized effluent, but the service still produces unacceptable pollution, the city dweller has only the remaining option of foregoing whatever amount of service required to restore an acceptable quality of environment.

However, from the political point of view a different set of criteria may be judged preferable. Different economic classes use different categories of transportation. Residents use different patterns of transportation from non-residents. Economic interests in the Central City have different transportation values from interests elsewhere. Claims of these different groups for transportation services are unlikely to relate to the engineering criterion of least effluent per seat-mile. The suburbanite, for example, cannot substitute SST service for his automobile, any more than the central city dweller would prefer an auto to the faster and cheaper rapid transit system.

In spite of these considerations, there is still merit in establishing the engineering criteria of effluent/service. It serves the purpose of putting a price tag, in terms of environmental quality, on each transportation mode, so that political claims can at least be evaluated against tangible degrees of environmental degradation. On this basis, the SST does not appear to impose an unreasonable penalty relative to the service it provides. The same statement would apply to all aircraft.

Elimination of urban air pollution

Congestion in cities results in local concentrations of airborne pollutants from industry, households, electric power stations, and transportation systems. Local microclimates differ widely; some of these tend to concentrate and others to disperse the effluents produced locally. Still other urban areas trail a wide band of polluted air downwind. The air has long been regarded as a "free good," that can accept limitless pollution and quickly restore itself by rain and wind. However, as cities have grown in size and in the volume of pollutants they generate, the self-purification capacity is sometimes exceeded and local smog conditions result.

It is not evident that the airplane, whether subsonic or supersonic, is a significant contributor to air pollution over American cities, or that it needs to be. There have been episodes of air pollution caused by aircraft: emergency dumping of fuel, soot trails from badly adjusted engines, clouds of smoke from coolant injection on take-off, and even normal operation at busy airports during conditions of temperature inversion. Some of this effluent is preventable by proper regulation. Location of airports warrants closer attention to conditions of local microclimate. But size and speed of aircraft can contribute significantly to reduced pollution. As the tables in the preceding subsection demonstrated, fuel consumption per seat mile declines with increasing size of aircraft.

Another consideration is the relationship between rate of pollution and air speed. The faster an aircraft (or any vehicle) moves through the air, the less the quantity of effluent per mile traversed.

In simplest terms, 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 systems then the causes of cleaner air are best served by fostering technologies which raises the productivity of transportation systems and equipment so that less of it will be needed. Simultaneously, improvements to power sources can be made which will reduce the release of noxious combustion products in relation to the quantity of fuel consumed.

The SST as a cause of unwanted weather modification

In the last five years ago or so, the attitude of an outspoken public segment toward the environment has emerged to challenge the idea of the environment as an immutable free good, and to contend that the environment is a delicate and fragile structure that man's technology threatens to shatter. There are cases where man has unwittingly or callously damaged ecological balances. The interdependence of dwindling wild-life shows this. The introduction of the water hyacinth into Florida (purposeful); the rabbit plague in Australia (accidental); the proliferation of the prickly pear cactus in Australia (purposeful); the war waged against the remora fish in the Great Lakes; all serve warning of the serious consequences of uninformed tinkering with sensitive aspects of ecological balances.

Accordingly, the public has been led to the conclusion that many impacts of man's technology on the global environment offer the possibility of disaster. They stress the need for proper management of "Spaceship Earth."

Something of this attitude has lead to the conclusion that the flight of 500 SST's across the stratopshere may threaten to alter some sort of fragile balance upon which the earth's climate depends. Extreme statements offer such possibilities as the following: That clouds of contrail vapor will shut out the sun or seal in the Earth's heat; that combustion of petroleum fuels will release enough carbon dioxide to turn the atmosphere into a sultry greenhouse, in which ferns will replace firs, and ice caps will melt to swell the oceans and inundate the lowlands; or that particles of solid effluent from jet exhausts will disrupt a presumed delicate thermal balance between earth and sky, perhaps to cause the onset of a new ice age. Since past geological eras have witnessed such extremes of climatic condition, and since their causes are not fully understood, these apprehensions have received some credence.

But the point should be made that the important balances in the atmosphere are remarkably durable. Examination of the effects of water vapor, carbon dioxide, and particulate matter from a flight of SSTs, and comparison of the magnitude of these effluents with those of recent historical diastrophisms is one way to testing this durability. Another is the analysis of the quantitative relationships of air, water, and carbon dioxide. Still another is the functional analysis of the physics of meteorology.

Of course, one can never point to any variable and say that "there is no effect from this item". The reason for this is known in philosophy as the impossibility of proving a "universal negative". It is also virtually impossible to prove such a negative scientifically as many researchers have discovered. For example the AD-X2 Battery Additive Case—Chapter 3 in Technical Information for Congress. Science is probabilistic. Events or effects are considered trivial or important to varying degrees based on their probability of occurrence, the entire analysis based in turn on a given state of knowledge. As knowledge is gained, estimates of probabilities become more reliable. New questions may be answered.

However, when it is shown that some specific effect of a technology under study is quantitatively trivial in comparison with the same effect from some other source, and when the derivatives of *that* effect is also shown to be trivial, it would seem appropriate to write off the issue as closed, and to turn to other issues less fully resolved.

The Boeing SST, weighing 350 tons, carrying 170 tons of fuel and 30 tons of payload 1800 miles an hour at an altitude of 62,000 feet, over regularly scheduled routs, introduces new conditions into the discussion of technology versus environmental quality. With some 500 of these vehicles in service,[69-71] some of their effects on the environment have been viewed as global in scope, advers in character, and persistent if not indeed irreversible in duration.

The SST is designed to operate at high altitudes. The stratosphere begins about 8 miles above the earth and subsonic jets usually operate a few thousand feet below this height. However, the SST's will operate best at altitudes from ten to twelve miles above the earth, four miles above the subsonic jet traffic and well within the lower part of the stratosphere.

The freedom from traffic and from this kind of weather experienced at lower altitudes makes the stratosphere an attractive location for supersonic airline routes. However, will this high stratum be adversely effected by the products of jet engine combustion? It is known that the stratosphere receives water from thunder storms, meteoric debris and dust, as well as complex chemicals and gases from volcanic emissions. What is the rate at which these substances are received by the stratosphere? How soon are they cycled out? Is the cycling-out rate of the stratosphere a constant or does it vary with the quantities of material inserted? What is the quantitative relationship of these ingredients of the stratosphere to the potential SST effluents?

Such questions are typical of many, the answers to which constitute an assessment of environmental impact. They are complex questions and in some cases require new research to derive answers.

It has been suggested that the water vapor released from the SST into the stratosphere will cut off the thermal energy from the sun, causing the surface of the earth to cool off and bring back an ice age; or alternatively, that this same insulation will capture and retain solar heat, causing a possibly lethal rise in global surface temperature. The possibility of enlarged atmospheric content of carbon dioxide is alleged to contribute to the latter effect. Another notion is that water vapor in the stratosphere might destroy the ozone layer.) The ozone layer stops certain lethal frequencies of the ultra violet spectrum, which if allowed to penetrate to the earths surface might challenge the survival of land life.) One somewhat extreme view is that the consumption of fuel for industry, electric power generation, and surface transportation will consume all the oxygen in the atmosphere.

Global atmospheric pollution versus local air pollution

To generalize from the conditions in a smoggy urban area to the whole earth disregards the enormous differences in the scale of the two classes of situation. In the city, man's technology is the primary and indeed virtually the only source of air pollution. But globally, man's technology is only one of many sources of pollution—a relatively minor one—while a number of natural phenomena contribute vastly larger quantities of pollutants than any from human activity.

There are several ways to analyze the

Footnotes at end of article.

causes, effects, and rates of global atmospheric pollution. One way is to compare the contaminants released by human activity with similar contaminants natural to the earth's atmosphere, or contributed by natural events.

Another criterion is the relationship between the quantitative effect of some specific pollutant from a particular source in question and the range of differences measured in the naturally-occurring level of the same pollutant. (The rates at which the natural occurrences or concentrations of particulate matter, gases, ice particles, aerosols, and the like fluctuate yields information on the tendency of the stratosphere to retain or reject them.) Oxygen and carbon dioxide occur naturally in the atmosphere, but are constantly in the process of being recycled, in nature. Plant decay combines oxygen from the atmosphere with carbon from the organic matter, producing carbon dioxide; then, in the presence of sunlight, green plants consume carbon dioxide and water to produce more organic material, with oxygen as a byproduct of this process. Thus, the average content of oxygen in the atmosphere remains very nearly a constant in nature, but man's consumption of fossil fuels (coal and petroleum products) has been thought to upset this balance. One measure of global pollution, therefore, is the relationship between the amount of oxygen consumed in the burning of fuel versus the total available supply of oxygen, and conversely, the total amount of carbon dioxide in the atmosphere. Evidence of a secular (sustained one-way) change in either oxygen or carbon dioxide content of the atmosphere would be a serious matter, especially if it were shown to be substantial or increasing exponentially.

Still another measure of the significance of the seriousness of a particular pollutant is to examine historical episodes in which, by naturally-occurring events, very large quantities of this same pollutant were injected into the atmosphere and then to ascertain whether the consequences were significant and adverse.

Man's use of oxygen vs. the atmospheric oxygen supply

Oxygen accounts for 20.95% of the total atmospheric mass, and weighs about 1.3 x 10^{15} tons. All remaining recoverable fossil fuel reserves total 2.97 x 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 [72] 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 x 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 1000 years).

"Man has recovered altogether about 10^{16} 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."

Footnotes at end of article.

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 affect 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 among these three reservoirs holds a fairly constant ratio. Its distribution and absorption rate, therefore, seems to be 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" among them.

Accurate measurements of the partitioning were made for the first time during the period 1958 through 1963.[73]

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 shows the increase in CO_2 as a result of the complete combustion of all recoverable fossil fuels.

TABLE 9.—ESTIMATED REMAINING RECOVERABLE RESERVES OF FOSSIL FUELS [1]

	10^9 metric tons	Carbon dioxide equivalent, 10^{15} gms.	As percent of atmospheric CO_2 in 1950
Coal and lignite [2]	2,320	5.88	252
Petroleum and natural gas liquids [3]	212	.67	20
Natural gas [4]	166	.43	18
Tar sands [4]	75	.24	10
Oil shales [4]	198	.63	27
Total	2,971	7.85	336

[1] Ibid., p. 120.

[2] Assumed to be 20 percent lignite containing 45 percent carbon, and 80 percent bituminous coal containing 75 percent carbon.

[3] Assumed carbon content of petroleum, natural gas liquids, and hydrocarbons recoverable from tar sands and oil shales=86 percent.

[4] Assumed composition of natural gas by volume: CH_4=80 percent, C_2H^0=15 percent, N_{o2}=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:

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.[75]

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 then show a yearly decline as it is partioned to the biosphere and to the ocean through time.

Estimates of atmospheric CO_2 have been made for the year 2000 based on various rates of fuel consumption. These calculations are summarized as follows:

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 the amount now present].[76]

In other words an increase of 30% would change the ratio from 3 parts in 10,000 to almost 4 parts in 10,000. This can be regarded as a trivial effect, and quantitatively less than the margin of error in typical field measurement.

Carbon Dioxide and the Weather: the "Greenhouse Effect"

In the quest for understanding of the mechanisms of the climate and the weather, meteorologists sometimes separate out one constituent and explore theoretically the consequences of an increase or decrease in its proportion to the other ingredients of the atmosphere. This has been done with carbon dioxide (CO_2). One conclusion of the exercise is that an increase in the CO_2 content of the atmosphere sets in motion a complex process that results in the heating-up of the lower atmosphere or "troposphere". This is called the "Greenhouse Effect". The hypothesis is described in the SCEP report in the form of a conclusion as follows:

Radiative equilibrium computations, including a convective adjustment, suggest that [an] 18 percent increase of the carbon dioxide concentration by the year 2000 * * * would result in an increase of the surface temperature of about one-half degree and a stratospheric cooling of 0.5° to 1° C. at 20 to 25 km.; a doubling of a carbon dioxide concentration over the present level would result in an increase of the surface temperature of about 2° C., and a 2° to 4° decrease in the stratosphere at the same level.[77]

However, the study follows this comment immediately with the following warning, that other factors complicate the calculation and raise doubt sufficient to destroy the hypothesis:

We would like to emphasize [said the report], however, that these computations neglect the important interacting dynamics and thermodynamics of the atmosphere, as well as the ocean-atmosphere interaction. This neglect makes the computed temperature changes very uncertain.[78]

Carbon dioxide, like water vapor, absorbs infra-red radiation. Heat from the sun or heat reflected from the earth can pass through the oxygen and nitrogen in the atmosphere without being absorbed, hence without warning these transparent gases. But both carbon dioxide and water vapor are opaque to infra-red, absorb this heat, and cause the atmosphere to warm up. They differ sharply in the range of their proportions that occur in the atmosphere and hence in the amount of heat they can retain. The concentration of CO_2 in the atmosphere tends to remain fairly constant despite changes in air temperature, while warm air can hold much more water vapor than cold air can. Therefore the ratio of $C0_2$ 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 droplets change into water vapor (a gas) energy is absorbed. When it reaches a cooler point in the atmosphere, the water vapor condenses and releases this energy. The energy is then radiated equally in all directions, about half into space. The condensate, as a cloud, also reflects downward the heat energy radiated upward from the earth and reflects upward the incoming solar energy. The cloud may then descend as rain or it may revaporate, thereby absorbing more energy which can then be carried to still another point.

Seventy percent of the earth's surface is water and most of the earth's weather is produced by this air-water-energy exchange. There is no controversy over this role of water.

The basic role of CO_2 in the atmosphere is similarly undisputed as to its heat absorbing and re-radiating capability. However, the effect of this action is much harder to measure because 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 the reflectivity of the earth than to air temperature.

Heat absorbed by molecules in the atmosphere is re-radiated, not stored. The radiation is emitted in every direction and part of it is radiated back into space.

Both CO_2 and water vapor produce similar effects in absorbing and re-radiating heat and in warming of the air.

Were it not for the stabilizing and counterbalancing effects of larger variables such as water vapor, surface reflectivity, cloud formation, and perhaps others, the warming role of CO_2 in the atmosphere could indeed be computed as suggested in the SCEP quotation above to produce the so-called "greenhouse" effect. But this is a large "if". Moreover, the long-range history of climate and CO_2 content do not confirm but tend to confuse, if not actually to refute, the hypothesis altogether. 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. Unfortunately, for the hypothesis, although CO_2 insertion has increased markedly since then, temperatures have slightly declined.

As Mitchell * * * has shown, atmospheric warming between 1885 and 1940 was a worldwide phenomenon. Area-weighted averages for surface[78a] temperature over the entire earth show a rise in mean annual air temperature of about 0.5°C (0.9°F). World mean winter temperature rose about 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 * * * Yet during this period more than 40% of the total CO_2 increase from fossil fuel combustion occurred. We must conclude that climate "noise" from other processes has at least partially masked any effects on climate due to past increases in atmospheric CO_2 content."[79]

The demonstrated 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) suggests strongly that the role of CO_2, or the potency of a "greenhouse" effect, is trivial.[79b]

In sum, increasing concentrations of CO_2 have not been shown to be a significant variable affecting the climate. It is necessary to conclude from the history of CO_2 in the atmosphere that its effect unknown, not for lack of knowledge of the infra-red absorption and heating values of CO_2, but simply because the effect of CO_2 in the context of all other atmospheric variables and stabilizing factors, is trivial.

Effects of miscellaneous toxic effluents from the SST

In assessing the relative pollution of various vehicles, three considerations dominate: 1) quality of fuel for a unit of work, 2) quantity of pollutants released per unit of fuel consumed, and 3) the impact of the pollutants on the biosphere.

The turbojet engines of the SST are essentially the same as those of subsonic jet aircraft. However, when the afterburners of the SST engines are in use, on take-off, fuel consumption and exhaust emission per passenger mile rises by about 14% above those of the subsonic jet.

Where the toxic effects of combustion products are of interest, the following points may be considered:

1. Toxic conditions require a concentration of exhaust effluents. This condition occurs only when exhaust emission rates exceed the rate of dilution due to air movement. Some studies[80] have shown that aerial commutation as opposed to surface modes would reduce city pollution by 87%. Communication with the investigators revealed that the conclusion was based on relative efficiency of surface and aerial power plants. The most significant variable was omitted: viz., dilution of the exhaust from aircraft by the flight of the vehicle at an altitude where natural air movement is not constrained by buildings and surface topology. In other words, the results of the study were understated, apart from the relative efficiency of the propulsion systems.

2. A comparison of the toxic effluents of the turbo-jet engine with the conventional automobile piston engine is relevant, however. The following comparison is made on the basis of a seat mile with the automobile moving steadily at 60 mph, while the figures for the turbo-jet engine are based on the SST engine with after-burner in use.[81]

	Turbo-jet engine	Auto engine
CO	1	109
NO_x	1	3
SO_2	2	1
Hydrocarbons	1	40

The comparison illustrates the relatively primitive technology of the conventional surface vehicle power plant. Even with improvement, however, exhaust products from surface vehicle must still be identified as the primary vehicular source of pollution to the biosphere due to the inherently lower dilution power of the atmosphere at the surface.

The foregoing analysis is essentially a "worst case" approach. It considers the toxic contaminant effect near the ground, with afterburner, an operational mode in which the jet engine is least efficient. It should be evident that these same effects when the aircraft is operating at high altitude, and at supersonic cruising speed, would be vastly more diffused. Moreover, the turbulence and cross-currents always present in the stratosphere would assure the functioning of the process of atmospheric self-purification through intermingling with the tropospheric layer and the subsequent scrubbing effect of rainfall.

Possibility of climatic changes from water vapor vented by the SST

A normal fleet of 400 supersonic transports making 4 trips per day will release 150,000 tons of water per day into the stratosphere. In addition to the water, the exhaust gases contain particulate matter, carbon dioxide, sulphur dioxide, and other gaseous products.

Speculations as to the consequences of this intrusion into a relatively unused layer of the atmosphere have included a conjecture that it might induce climatic changes. Both a lethal rise in temperature and a new ice age have been offered as possibilities, both based on the same assumption that the SST would cause a permanent cover of high clouds. Another hypothesis is the destruction of the ozone layer with a subsequent intensification of ultra violet solar radiation flux at ground level.

The stability of the stratosphere has also been questioned. On the assumption that the steady state of the stratosphere may depend on a critically sensitive balance of natural forces, it is suggested that the water vapor injected into the stratosphere from the combustion products of many SSTs might destroy the critical balance and trigger vast changes.[82]

The National Academy of Sciences, NRC Committee on Atmospheric Science, has evaluated this possibility and concludes that it is without foundation.

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 watervapor absorption of a long-wave radiation will be sufficient to disturb appreciably either stratospheric properties of the large-scale circulations that are influenced by its thermodynamic state.[83]

An analysis of the problem by the Office of Meteorological Research, ESSA, has produced a similar conclusion:

Although an equivocal answer cannot be offered, the general opinion of a large group of scientists almost unanimously rejects any significant threat to modification of the weather.[84] The reasoning in support of their conclusions merits examination.

During 1967, three common sources of combustion in the United States poured about 1.2 billion tons of water into the air,[85] as follows:

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TABLE 10.—*Fuel consumption: powerplants, automobiles, and aircraft*

Source and hydrocarbon fuel burned, millions of tons	
Powerplants	447
Automobiles	220
Aircraft	25
Total	692

Since each pound of fuel burned produces about 1½ lbs. 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.

The average moisture content of the air weighs approximately 150 trillion tons. 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 normally found in the atmosphere.

A projected fleet of SST's would traverse a relatively unused part of the Earth's air envelope. The cruising height of 12 mi. would be four to five miles above that of conventional jet transports. Consequently, the atmospheric volume used for air travel would be almost doubled. The useful volume of air space is now about 1.2 billion cubic miles. With the SST the useful volume would rise to about 2½ billion cubic miles.

The ratio of the water produced by fuel consumption of the fleet of SST's to the water normal to the air, would be only 1 part in 1 billion. However, the water in the atmosphere is concentrated in the warmer and more dense air near the Earth's surface. The 200,000 tons or so of water expelled by an SST fleet would be ejected over a flight path of some 2 million miles. The water would therefore be dispersed at the rate of about 200 pounds per mile.

If the relative humidity happened to be near saturation in a particular section of the stratosphere, a contrail could form. It would exist until it was dispersed into a volume of somewhat dryer air and then, as water vapor, it would become invisible. However, the stratosphere is normally dry, with only 2 to 3 percent of relative humidity. Accordingly, it is highly unlikely that such a contrail could form.

The diffusion 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's 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 ft. in 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, the question needs to be considered as to whether it would be cumulative. The SST, once in service, would remain in service. Would the year-by-year deposits of water cause a gradual accumulation which could eventually affect the normal environment? That is, would this normally dry, high layer of air preserve its equilibrium? Would the water from the SST accumulate with time or be disposed of by the natural mechanisms which now preserve the equilibrium of the stratosphere?

A recent symposium at Williams College to study critical environmental problems tentatively concluded that in polar areas, the stratosphere could accumulate enough water to produce an increase in cloudiness during the winter season. 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.[86]

It should be noted that the stratosphere possesses natural mechanisms which tend to hold its conditions fairly constant. The higher strata of the atmosphere are not immune from the effects of low-altitude weather. A single, large, cumulonimbus (thunderstorm) cloud can inject as much water vapor into the stratosphere as would a fleet of SST's making 1600 flights on a given day.

For each 500 large cumulonimbus clouds [87a] that occur each day 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; this small increment would also be subject to the same cycling mechanisms. The stratosphere is dry, not because it lacks exposure to huge quantities of water, but because natural mechanisms tend to unload excesses so as to stabilize its water content at a low level.

How long does foreign matter remain in the stratosphere? The period of 18 months is often used. The figure was derived from fallout detection following a nuclear test.[87] The nuclear decay of the fall-out indicated an 18 month period from the initial explosion. This experience has provided meteorologists with a basis for their assumption that water from the SST will remain in the stratosphere for 18 months. Yet the cycle time of water placed in the stratosphere would have little bearing on stratospheric humidity because the water released each day is approximately equal to the amount received. It is neither likely nor necessary that the water either released or absorbed in a given day 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 how long it has been there.

If it be assumed that the water placed in the stratosphere by the SST actually did take 18 months to be cycled out, the storage of water in the stratosphere would rise steadily to reach a maximum in 18 months of 8.1×10^7 tons. The Study on Critical Environmental Problems (SCEP), estimates that this quantity would increase the water concentration in the stratosphere from its present average of 3.0 ppm to a global maximum of 3.3 ppm.[88]

The hypothesis of a 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, except 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 fluctuation noted by ESSA over the past five years.[89]

Stability of the ozone layer

The possibility has been raised that the water released by the SST could cause a degeneration of stratospheric ozone. The consequences of this loss have frequently been described as the opening of the atmosphere to the penetration of lethal ultra violet radiation, capable of killing all living things except marine life.

Molecules of ozone are diffused through a deep layer of the stratosphere, showing a peak concentration at the mid-point of the layer, which is about 80,000 ft. above sea level (about 4 miles above the cruise altitude of the SST).

Over any given point on Earth, seasonal variations in O_3 (ozone) concentration average about 25%. Daily fluctuations over any single point on Earth are at least 10% on a given day. Over a year's time the ozone concentration above a single point would therefore vary by a third or more. (The intensity of ultraviolet radiation reading at the earth's surface on a "clear" day varies even more widely since haze and dust are more efficient than ozone in blocking short wave length radiation.) The ozone density over different parts of the earth varies through a range of more than 100%. In particular, it increases with latitude, the polar regions having double the average concentration of the tropical areas.

However, over the past five years, the steady state water content of the stratosphere has increased by 50% of its former value, from 2 ppm to 3 ppm. According to ESSA scientists, ozone measurements made by ESSA weather stations since 1962 show no correlation or change in ozone density associated with the higher levels of water vapor in the stratosphere.

The S.C.E.P. examined the potential of ozone destruction as a function of the insertion of water and other combustion products into the stratosphere. Their study of this issue included the "worst case" assumption of an 18 month cycle for all materials deposited by the SST. They concluded that if any effect could be detected, the effect would be well within the daily variation and would be of no significance.[90]

In summary, the stratosphere is not dry because it lacks exposure to water vapor. It maintains a state of low humidity due to natural mechanisms. Similarly, there is no evidence that stratosphere states or other climatic conditions are dependent on a "critical" or "delicate" balance of forces. To the contrary, much evidence exists (see section on particulates and volcanic action) that the stratosphere as well as the ozone layer (and the earth's climate) remain stable despite insertions of water and other materials in quantities vastly beyond the remotest capability of any conceivable fleet of SSTs. And, in fact, the amount of water inserted by the "standard fleet" of 500 SSTs is trivial compared with the quantity cycled in and out of the stratosphere each day.

Effects on climate of solid particles from SST effluent in the stratosphere

A solid particle is opaque to most of the spectrum of solar radiation. Solar energy impinging on the particle is partly reflected and partly absorbed by the particle as heat. The warmed particle releases its energy by re-radiating it omnidirectionally and by convection with surrounding air molecules. In essence, the solar energy intercepted by the particle is largely lost to the earth's surface [90a] but can contribute a warming effect to the surrounding air molecules.

One hypothesis derived from this observation is that particulate matter ejected into the stratosphere from SSTs might become extremely voluminous or concentrated. The stratosphere might then absorb so much of the sun's warmth that the lower atmosphere and earth's surface would at worst freeze over or at least experience undesirable climatic alteration.

The conclusion of the discussion to follow is that the hypothesis is highly improbable. Reasons for the conclusion are: 1) that cosmic dust constantly failling into the atmos-

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phere exceeds in volume the quantity expelled from any conceivable fleet of SST's; 2) that historically recorded volcanic eruptions have projected into the stratosphere vastly larger quantities of dust than any fleet of SST's could provide; and 3) that in any event, the thermal mechanism of water vapor—clouds—rain is much more influential in directing or altering the effects of solar flux than dust could possibly be. Any weather satellite photograph will show about half the earth's surface to be shaded by highly reflective clouds at all times.

Cosmic dust varies in rate of fall from season to season and year to year. Yet its effect on climate has been negligible. The earth has experienced great volcanic eruptions which have sent enormous quantities of dust aloft but the climatic effects, while validating the theory of the cooling effect, do so only to the extent of a few degrees and for a year or two.

In short, the stabilizing effect of atmospheric water has demonstrably operated to refute the hypothesis of particulate effects on weather, under repeated and sustained conditions vastly more severe than the SST or any fleet of SST's could create.

Magnitude of SST particulate effluent

The General Electric Co., manufacturer of the SST engines, estimates that carbon particles from the SST engine will total five pounds per engine per hour. The total carbon emission (20 lbs./hr./plane) would be dispersed 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. In calm air 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 would be a few thousand feet across.

If all the carbon emitted is contained within these two air columns, each will contain 10 lbs. in an hour's flight. Based on a maximum diameter of 1000 feet, each column will have a volume of 7×10^{12} cu. ft. through which 19 lbs. of carbon are dispensed, or 7×10^{11} cu. ft. of air per lb. of carbon. This is not a detectable quantity. Moreover, the material is chemically inert.

The smaller the particle, the slower it will fall to the earth. As size decreases, gravitational forces become less and less important compared with convective air movements and eddy currents. Finally, particles of extreme fineness become responsive to the random movement of air molecules. The gravitational pull of the tiny particle mass is so trivial relative to the forces in the surrounding air that the particle becomes entrained, its greater density showing only as a slight downward bias in its general random movement.

Unless a stratospheric particle becomes larged[90b] for some reason a year or more could pass before its earthward bias will allow it to settle. However, the floating lifetime of the particle is shortened, perhaps ended, if it becomes a condensation nucleus.

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 ready state density of the carbon following an 18 month build-up is of interest. Based on an average residence time of 18 months, the carbon particulates would reach a peak concentration of less than 28,000 tons and stabilize at that level. (550 days times 50 tons per day equals 27,500 tons.)

The S.C.E.P. study added to this figure for particulate carbon a considerably larger figure for "particulate" combustion products of sulfur. The analysis offered in that study may be open to challenge on that account because sulfur in the exhaust is released as sulfur dioxide, a gas. To become a particle the sulfur dioxide must be either disolved into a droplet of water or chemically converted into a solid sulfur compound after being released. The S.C.E.P. study considered the case of a 100% conversion of all sulfur released into particulates.

For these and other reasons[91] the S.C.E.P. assumptions as to sulfur emission products must be considered to represent a "worst case" treatment of the problem. Thus, accepting these generous estimates and considering, as was done, all sulfur products as "particulate", and with a cycle time of 18 months (to reach the stable peak level) the peak concentration of sulfur products would reach 181,500 tons and the carbon total would reach 28,000 tons, a combined total of 209,000 tons of "particles". This sounds like quite a lot of dust to be scattered along the stratospheric airlanes. However, it is considerably less than the dust already there.

Comparison of SST particles with cosmic and volcanic dust

The dust from space, mostly particles ranging in size from a millionth of a micron to several microns, joins the earth's atmosphere in dependably steady and surprisingly high quantities. The micro size of the particles causes them to fall slowly, like the dust from volcanoes.

The infiltration of meteoric material does not occur at a constant rate but is relatively uniform if compared with volcanic insertions. It is a relatively uniform dispersion to which volcanic material must be considered an occasional, albeit huge, addition.

The quantity of dust received from space has proved difficult to measure and calculations of the total vary through several orders of magnitude. The assumption that a series of measurements taken in one part of the world during a given time period can be generalized to the entire globe is probably not a safe one. Also, some collection and detection methods seem more effective than others. Among the more complex of these are the remote sensing methods employed on satellites. Although the satellites remove all doubt that the materials detected are cosmic and not of earthly origin, interpretation of the sensor signals has introduced new uncertainties.

Estimates of the daily accumulation of cosmic dust now vary through five orders of magnitude (from 100 tons per day to 10 million tons per day).

Rosen and Ney[92] obtained results in the mid-range of this variation:

The particle flux with the photo-electric particle counter is about 4×10^{-2} cm^{-1} sec^{-1} for diameters between 0.5 and 2 u. This implies a mass flux of about 4×10^{6} meteoric tons per year over the earth.

Studies showing much heavier quantities were summarized by T. Grjebine.[93]

According to a research summary by Grjebine in which a variety of stratospheric sampling methods were correlated, the earth receives enough micron range particles (metallic) from space to show a stratospheric concentration (between 15 and 25 km altitude) of 2×10^{-4} grams per cubic meter. In other words a column of air one meter on a side and 5000 meters high would contain one gram of metallic dust. This is not a significant filter as far as solar energy is concerned. Yet, the quantity of cosmic dust is between 4000 and 5000 times as large as that suggested for an SST fleet under a "worst case" assumption.

Of course, cosmic dust is assumed (for want of better information) to be more or less evenly distributed. By contrast, SST flights would presumably be mainly in the northern hemisphere along established routes. This would mean repeated dispositions along relatively narrow bands in the stratosphere. This flight pattern could be expected to result in more localized concentrations of particles.

Such concentrations however are not likely to occur. The reason for this is as follows:

In their calculations, the SCEP considered the particulates as inserted in a stagnant rather than from high speed flight.[94] The instantaneous mixing characteristics of the SST (not considered by the SCEP) should also be taken into account. Assuming that all the SO_2 would become particulates, the total sulphate and carbon deposition is 67 kg./hr. The mixing vortices of air into which this material is placed totals $4 \times 10''$ cubic meters of air per hour. The concentration per flight is calculated to be 1.6×10^{-7} grams/m³.

For the SST effluent to achieve the particulate density suggested by the SCEP of 330 parts per billion would require two hundred flights over precisely the same flight path during which time (50 days) absolutely natural atmospheric movement along the flight path would be assumed to occur.

These conditions are quite impossible. For example, a (very reasonable) velocity of the upper air of no more than 1/6 mile per hour would prevent the residue left by one flight from mixing with that of the next. Air movement in the stratosphere varies with attitude but is almost never still. Wind movement varies from 25 m.p.h. up to several hundred m.p.h.

The SCEP, in considering the problem of particulate concentrations resulting from repeated use of regular routes, made a comparison with the band-like dispersion resulting from the volcanic eruption of Mt. Agung. The following conditions were noted:

1. Prior to the eruption, particulate sampling by Junge showed a concentration of 12 parts per billion.

2. In 1969, several years after the eruption, Cadle et al. measured 360 parts per billion (5.8×10^{-5} grams/m³ [94a].)

The point insertion of volcanic action can, of course, cause vast increases in stratospheric dust which may persist for several years Mt. Agung, for example, inserted large quantities of sulphates which diffused around the earth in a stratospheric band located in the tropical latitude. The concentration of the Agung sulphates was great enough to cause a detectable rise in stratospheric temperature along the track of the dust. The amount of energy required to heat this dust and all of the air containing it would be about 0.0005 of the solar flux for each degree rise in temperature. Such an absorption of energy was not great enought to cause measurable effects at lower levels of the atmosphere, nor on the surface, and none were noted.

In the Agung eruption, a quantity of particulate matter was ejected into the stratosphere in concentration about comparable to that given in the "worst case" analysis developed by the SCEP study. No significant climatic effects were detected. In fact, the National Center for Atmospheric Research (NCAR) cites six volcanic events in recent time which injected enough material to cause a decline in world temperature through reflection or absorption and reradiation of solar energy.

Volcanic dust has been held responsible for several more recent dips in world temperature means, such as the notable temper-

Footnotes at end of article.

ature decline in 1787, 1816 [the "year without a summer"], 1837, 1884, 1893, and 1912.[95]

But in all of these cases, the volume of materials ejected was vastly larger than that which could accrue from any conceivable SST fleet. For example, the greatest burden placed on the stratosphere in recent times occurred at Krakatoa on August 27, 1883. 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, an authority on explosives, computes the energy released by Krakatoa as equivalent to 5,000 megatons of TNT.[96] 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.[97]

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 miles radius.

The residue circled the Earth, giving the moon a green tint and turning the setting sun blue, gray or green for the better part of a year. Sunsets were noticeably more brilliant all over the world for several years.

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.

In summary, particulates in the effluents of a fleet of SST's do not approach the magnitude of routine natural insertions of particulates. Further the effects on the earth's climate, even of truly massive volcanic insertions (quantities that no conceivable number of SST's could approach) have been identified as being slight and transient.

Summary of assessment of weather modification possibilities of the SST

Man's technology has been shown to have many different possible effects on his environment. It is not possible to foresee all effects of any innovation. Moreover, as basic scientific research accumulates more knowledge and develops more sensitive measuring devices and techniques, new opportunities and dangers appear. This has been increasingly the course with all environmental questions over the past quarter-century. Skill in detection has disclosed the existence of mercury in many previously unsuspected places. It has identified the presence of pesticides in food chains. It has inspired development of a new science of environmental or ecological chemistry for the analysis of degradants. It has recognized the significance of both acute impacts and long-time, low-level impacts. These undeniable and important contributions of man's ability to preserve and restore his environment have also sensitized the scientific community and the public at large to the many ways in which the environment can be impaired. It is likely that this knowledge can do a disservice in the possession of those anxious to prove an *a priori* case or prone to emotional overreaction. The possibility that an innovation may be harmful in some specific way is not the same as the certainty. Science deals in probabilities, and in the relative significance of variables, but not with certainties.

Footnotes at end of article.

With respect to the weather modification aspects of the SST, it might serve a useful purpose to consider how difficult it has been for man to achieve any positive results when he was trying to. Weather modification is difficult, precisely because the mechanisms that determine the weather and the climate are so functionally positive and on so large a scale. They have a built-in stability that is extremely difficult to alter.

Evaluation of the possibility of unintended modification should perhaps be examined by those technologists seeking to achieve purposeful modification.

It has not yet occurred, apparently, to those assessing the environmental impacts of the SST to speculate on the possibility that the combined effects of all SST effluents discharged along the airlanes in the temperate zone could establish a permanent pattern of rainfall along these itineraries. Not that this is very probable, but it is no less so than some of the apprehensions that have been expressed.

One approach to the further assessment of the weather modification potentialities of the SST might be to select that aspect of the atmosphere that is most sensitive and at the same time most dynamic, for a searching functional analysis. This is the air-water balance. It is well established that interactions based on this balance control most of the phenomena of the weather and climate. It is also the conclusion of those engaged in the study of purposeful weather modification that the manipulation of the air-water balance offers the best hope of achieving measurable results with least expenditure of effort. The results to date of this effort may not be promising, but they are the least unhopeful. Therefore, examination of the potential SST effects on weather and climate in this context, possibly in synergistic relationship to efforts at purposeful modification, might help to put the issue into clearer perspective. But as with all such issues, this one cannot be completely disposed of. It is not possible to prove a negative—only to indicate its order of probability. The present state of the knowledge is that weather and climate effects of the SST thus far investigated turn out to be trivial.

VII. OBSERVANCE AND CONCLUSIONS

This paper has reviewed the technological evolution of the commercial airliner from the 1920s to the present day, to provide a basis for the evaluation and assessment of the technology of the proposed supersonic transport. In tracing this history, it became evident that much of the early technology of commercial aircraft leaned heavily on military-sponsored developments. There was, in fact, a dependency relationship. It was also apparent that the goals of military developments were not necessarily compatible with the requirements of competitive commercial vehicles.

The deviation in military vs. civilian requirements widened with time, resulting in a decrease of technology useful to the civil sector. Civil aeronautics began to develop at too slow a pace to satisfy rising domestic and international requirements.

The lag in civil development gave rise to an important issue: whether or not the development of commercial aeronautics should become a direct function of the Federal Government as distinct from the traditional indirect support (funding military aeronautics and waiting for the technology to diffuse into the civil sector). The long time lag in the development of power plants appropriate for commercial jet airliners was cited as a cost of the failure to do this. The long history of Federal participation in the encouragement of transportation facilities, domestic and international, suggests that this function has proved acceptable in the past and warrants consideration for the future.

Another issue is the national attitude toward technology itself. A study by the National Academy of Sciences was cited to suggest that in the future technology can neither be turned loose to proceed untrammeled, nor constrained by arbitrary measures to preserve the status quo. Defects in present-day technology are acknowledged. The importance of screening and assessing further innovations, the subject of this entire study, appears to be an intermediate, balanced compromise between these two extremes. It calls for systematic and thorough examination to maximize the benefits of a technological innovation, while detecting and correcting the undesirable, second-order consequences. Criticisms and assertions of technological imperfections can be expected to be voiced throughout the development of any such large project; they need to be dealt with forthrightly and factually as they appear.

Review of economic aspects of the supersonic transport

Attention was focused on the productivity of commercial aircraft as the primary consideration in the development of competitive transport systems. Productivity is a factor of speed and carrying capacity, while the requirements of maintenance and "downtime" are a negative factor. Historically, each major increment of innovation in design that increased the positive factors or reduced the negative factors provided impetus for growth and increased efficiency of the airlines. Up to about 1968, those innovations had been frequent enough to keep air fares about constant in the face of a general inflation of the economy.

Specifically, each generation of airliners achieved higher levels of speed, and larger payloads; downtime was reduced by the improved engineering of the reciprocating engine, and even more by the advent of the turbojet engine.

On the negative side, the trend to larger aircraft meant that the airlines needed schedule changes to improve the load factor. The problem they encountered was that competing airlines running large aircraft found their planes operating at half-capacity. The immediate alternative seemed to be to raise fares or reduce the number of flights.

The hypothesis in support of the economic benefit of the SST is essentially that size alone, with its associated problems of load factor, will not accomplish the next evolutionary step in productivity. An aircraft of intermediate size, halfway between the capacity of the 707 and the giant 747, with three times the speed of these subsonic jets, would be required.

Since the constraint of avoiding sonic booms over land has been accepted—at least unless and until this environmental effect can be shown to be negligible from an aircraft at 65,000 feet altitude—the primary gain in productivity will be for trans-oceanic flights. It is claimed that the SST retains its gains in productivity on such flights, even if they originate in Chicago or perhaps St. Louis, and fly subsonically over land.

The international financial considerations of the SST center on the comparative advantage of selling American-produced aircraft to foreign-owned airlines versus buying foreign-produced aircraft for use in American-owned airlines. Stated in simple terms, as a pure case, the advantage for the United States appears to be a plus of some $20 billion by 1990 for the successful production of the Boeing SST, if the market analyses are reasonably valid. However, there remain a number of uncertainties that cloud the picture. The recent rise of the international corporation, owned jointly by stockholders in many countries, complicates the flow of value. Another uncertainty is as to the probability of economic success of either of the foreign SST projects. This success is called into question by the fact that the foreign SSTs are smaller and slower than the Boeing version, even though they are scheduled for earlier entry into service.

One critically important variable in marketing is airport accessibility and congestion. Although the problem is general to all commercial aircraft, the congestion and surface access problems have steadily grown worse with time. The SST schedule calls for its introduction in eight years. With no change in airport accessibility trends, the SST will be introduced at a time when the number of passengers carried is no longer governed by market growth but has become fixed due to system limitations.

Through the years, plans to relieve the bottleneck of air terminals have made little progress. The nature of the problem requires that planning be national (or at least interstate), but the implementation requires State and local action. Historically, coordinate action of Federal-State-local jurisdictions has proved difficult.

The more promising plans to relieve terminal congestion propose to make use of VTOL/STOL aircraft linking large terminals with smaller and dispersed satellite terminals. This scheme provides directly for the short-haul passenger, the largest single component of air passenger service. By providing for point-to-point travel for the short-haul passenger, the proposed system would alleviate the pressure of passengers and aircraft at the large terminals serving long-haul transportation. If some arrangement of this kind is not incorporated in the U.S. air transportation system, the congestion at major airports will jeopardize the marketability not only of the SST but of all other larger airliners.

The various issues of noise from the SST

The question of noise is, of course, an environmental issue. However, it differs in character from other environmental insults in that it is of brief duration and hence localized in relation to the aircraft that generates it.

Noise from the SST is of five types: (1) the sonic boom, generated when the aircraft moves at supersonic speed at cruising altitude; (2) the engine noise while the aircraft is motionless, taxiing into position for take-off, or holding; (3) the side-line noise while the aircraft is moving down the runway and taking off (up to one mile from the end of the runway); (4) the departure noise, from one mile past the end of the runway until it gains cruising altitude and reduces power to cruise level, and (5) the approach noise made as the aircraft approaches the field to land.

The question of sonic boom has presumably been disposed of for the time being by the assurance that the SST will cruise subsonically over populated land. This issue has raised considerable controversy because of the experience of the U.S. population with military jets flying supersonically at lower altitudes.

Engine noise on the ground before take-off does not appear to be a significant factor. During this phase, engines of the SST can run as quietly as those of any other aircraft. Only enough power is required to move the aircraft slowly.

Engine noise while the aircraft is moving down the runway, and up to a mile beyond, presents the principal problem for designers of aircraft and engines of the SST. Without acoustical correction the noise generated during this phase is excessive. However, the Boeing Company has offered assurances that before the SST is certified, its noise level during this phase will be brought within limits judged acceptable for new subsonic aircraft (FAR 36). Similar assurances are offered by the makers of Concorde who say that the Concorde will comply with all pertinent noise regulations extant at the time it appears on the market.

These assurances, of course, do not completely dispose of the issue. It remains to be seen whether the companies can make good on their promise, or whether they will seek an exception or interim adjustment at a later date. On the other hand, the point is made that airports are often located in areas remote from urban centers, with much open land around them. If the land is subsequently occupied by persons seeking to take advantage of convenience, economic opportunities, or sheer rise in land values attributable to the airport, it is at least a reasonable question as to whether they should not be expected to take the bitter with the sweet.

Departure noise is another question. It extends well beyond the immediate locality of the airport. Presumably, the same assurances are offered by the aircraft and engine designers as to noise reduction in this phase. The importance of this phase is that it affects a larger area, and is not associated with any of the advantages of land ownership relative to take-off noise. Since engine efficiency is likely to be impaired by innovations to reduce noise, particularly when retrofitted, there will be an inevitable trade-off between noise comfort and engine efficiency. Determination of this point can be expected to be a source of future controversy. However, the present evidence is that the designers are taking quite seriously the public concern over noise pollution, and are making strenuous efforts to alleviate it.

The micro-environmental issues of the SST

Apart from noise, two broad categories of asserted environmental effects of the SST have come under consideration. One set involves the consequences of its operation as an added pollution-producing element in the urban/suburban air environment. Public dissatisfaction with deteriorating conditions of greasy residues, corrosive chemicals, particulate matter, smog, and other noxious gases, has been exacerbated by the prospect of effluent from the big, high-powered engines of the SST.

It is incontrovertible that turbojet aircraft, whether subsonic or supersonic, add to air pollution around airports. It is not evident that they contribute a significant fraction to the total pollution load in and around cities, with the possible exception of infrequent, unintended effects such as fuel dumping and badly adjusted engines. The economics of aircraft management dictate that these should be avoided.

The questions to be resolved in the category of micro-environmental effects relate to the local geographical, meteorological, and urbanized circumstances rather than to the specific aspect of SST effluent. It is necessary in the local environment to consider such matters as—

The nature of local air movement and its capacity to diffuse pollutants;

The local tendency toward inversion layers in the atmosphere that obstruct upward diffusion of pollutants and smog;

The traffic density at airports;

The load of pollutants from other sources;

The insulation of the airport and departure lanes from housing.

As a general proposition, it rests with the local metropolitan area to insist upon a tolerable level of pollution of the air from all sources, including aircraft. Presumably, the designers of aircraft and engineers are mindful that failure to maintain progress toward cleaner engine effluents would invite the risk of costly regulatory inhibitions at airports prone to high levels of pollution.

The marco-environmental issues of the SST

The other category of asserted environmental effects of the SST encompasses global or climatic consequences. A long list of allegations have been raised as to possible adverse second-order consequences in this area. The distinction is made that the micro-effects of the SST contribute to other effluents generated by man's technology, while the macro-effects of the SST should be related to the pollutants resulting from large scale natural phenomena.

One allegation is that the big engines of the SST will contribute disproportionately to the consumption of atmospheric oxygen. This issue is not impressive, however, in view of the fact that if all the known organic matter (coal, lignite, petroleum, and standing timber, for example) were to be oxidized to ash, the reduction in atmospheric oxygen would be something like 3 percent. Moreover, there is some reason to believe that one of the products of oxidation—the carbon dioxide—when present in the atmosphere in increased percentage stimulates the process of plant photosynthesis. The process consumes CO_2 and water (the products of combustion) and generates oxygen. How precisely this reverse process counterbalances the process of oxygen depletion from combustion is not a critical problem in terms of the oxygen supply for reasons stated above.

A related allegation is that the percentage of carbon dioxide in the atmosphere will be increased by SST effluents to such an extent that the absorption of the infra-red radiation from all sources by CO_2 would cause a rise in the temperature of the troposphere (that part of the atmosphere below about 40,000 feet altitude). However, this "greenhouse effect" has not been confirmed in recent minor changes in atmospheric CO_2 content. Moreover, there are other mechanisms at work in the atmosphere that are much stronger in their effects than is the content of CO_2 and minor changes in it.

Still another contention is that the particulate matter in the SST effluent might reach so high a density as to enable the stratosphere to absorb enough solar radiation to cause the troposphere and the ground beneath to cool. An examination of the quantity of particulate matter that might be generated by the SST (a fleet of 500 on regularly scheduled service) shows that it does indeed reach the impressive figure of 209,000 tons of particles under a "worst case" assumption before stabilizing. (At that point, losses of particles would equal gains.) However, the earth's daily intake of cosmic dust is estimated to be much larger than this. Measurements of the fall of cosmic dust, taken at different times and places, show quantities which vary through three orders of magnitude, the smallest of which is much larger than the stabilized quantity from the SST fleet under a "worst case" assumption.

Another basis of comparison is the climatic effect of the very large quantities of particulate matter injected into the stratosphere by major volcanic eruptions in recent history. Although these natural effluents are many orders of magnitude larger than any conceivable accumulation from an SST fleet, no significant climatic consequences appear to have resulted from them. It might also be noted that the power of dust to affect the solar flux (hence the climate) is minuscule as compared with the reflectance of a cloud, and clouds cover about half the earth's surface at all times.

By far the largest single component of SST effluent is water. A number of possible consequences have been conjectured for this effect. As with CO_2 the hypothesis is that the absorption of solar radiation by water vapor would warm the upper atmosphere, perhaps at the expense of the lower atmosphere so as to cool it and also the Earth's surface. An opposite effect resulting in possibly lethal heating of the troposphere and ground is also conjectured to result from this same source. Certainly it is true that the water balance in the atmosphere is the most significant element in determining temperature and climate. It is also the most variable. For this reason, much of the effort in weather modification has centered on techniques to manipulate this balance. However, as far as the SST is concerned, the issue turns on the degree of stability of the water content of the stratosphere: to what extent does the operation of an SST add significant and lasting quantities of water to it?

Analysis of all apparent factors of SST water discharge suggests that the quantity of water normally held in the stratosphere is very low: normally on the order of 2 to 3 percent relative humidity. It is for this reason that high-flying supersonic jets do not make contrails in the stratosphere except on rare occasions in the polar regions where solar radiation is least significant as a factor of climate. Moreover, the quantity of water emitted per mile by a supersonic aircraft would be so small that once it underwent the diffusing action of air turbulence caused by passage of the aircraft it would amount to only .0024 ounces of vapor per square foot column of air.

The final question is: does this water vapor remain in the stratosphere, to be added to by each successive passage of other SSTs? On the basis of the evidence of what happens to the water vapor and droplets injected into the stratosphere by thunderstorms (500 [96] of the some 5,000 storms that occur daily around the earth inject some 75 million tons of water into the stratosphere) it appears that the water content of the stratosphere stabilizes at a low level with surplus rejected downward. Over the past few years, the average water content of the stratosphere has risen by 50% (from 2 ppm to 3 ppm). This increase is from 5 to 10 times as great as the maximum possible from a fleet of SSTs. The increase from natural causes has produced no detectable effects on climate or radiation. What has caused this change in water vapor content in the stratosphere is not known. One possibility is that the content of water in the stratosphere fluctuates above and below some very low figure. Another possibility is that the observed increase can be accounted for by errors in measurement. It would be desirable that periodic measurements of this variable (if it is a variable) be made so that if any significant trend can be established, it can be properly analyzed and interpreted.

Recapitulation

Ultimately, the issues of the SST, as with all assessments of technology, depend upon political attitudes and values rather than on the technical issues of the innovation itself. How important is air transportation for the national welfare? How important is the encouragement of the export of high technology for the national economy of the United States? How significant is technological achievement in the civil sector for U.S. international influence? Is technological advance to be arrested, whatever the consequences?

There are many uncertainties: as to the verity of the competition from foreign SST developments; as to whether the Boeing SST will produce the economic gains claimed for it; as to the extent of engineering risk this vehicle represents; and as to whether it can stand alone, without other supporting elements of a complete system of air transportation. Many of the defects of present air transportation have nothing to do with air speed or vehicle productivity; the ground sector, for one example, is generally conceded to have been neglected.

The environmental aspects of the SST, and especially the global aspects, have received the bulk of attention of critics. Yet, upon analysis, most of these postulated effects are found to be trivial. Of course, some environmental uncertainties remain. As to these uncertainties, it has been pointed out several times, earlier in this study, that it is rarely if ever possible to prove a negative.

But the greater number of uncertainties appear to lie in the field of economics. It is likely that these can be resolved only by actual experience with the product in use. Much hinges on the quality of engineering management in the development of the vehicle, and the system of which it is conceived as a component. Much hinges also upon the quality of management of the airline service and its competition. Of course, these are general considerations and are therefore imponderables beyond the scope of the present study.

FOOTNOTES

[1] U.S. Congress. House. Committee on Science and Astronautics. "Technology: Processes of Assessment and Choice." Report of the Committee on Science and Public Policy, National Academy of Sciences, July 1969. (Washington, U.S. Government Printing Office, 1969), page 118.

[2] Ibid., page 118.

[3] Ibid., pages 2–3.

[4] Ibid., page 15.

[5] Numerous claims were made by World War II pilots that they had broken the sonic barrier with their propeller-driven aircraft in full power dives from high altitude. Speeds as high as 800 mph, sometimes accompanied by sonic booms, were reported. However, during World War II, methods were not available for measuring accurately the speed of diving aircraft. Although these claims seemed plausible at the time, knowledge of compressibility effects was limited, and nothing was known about the transonic regime. Subsequent analysis has established that none of the World War II propeller-driven aircraft, designed for subsonic flight, could have exceeded 550 mph, a speed well below the speed of sound.

[6] Speed is often given in multiples of, or fractions of, the speed of sound. Mach 1 is the speed of sound. The name is that of the Austrian scientist, Ernst Mach, 1838–1916. The speed of sound (m–1 or Mach 1) in air is not a constant; it varies primarily as a function of temperature and to a lesser extent as a function of pressure. With increasing altitude, the air pressure declines lineraly, but temperature reverses direction several times. As temperature declines, so does the speed of sound. The relationship is expressed by the formula:

$$\text{Mach 1 (in mph)} = 83.5 \sqrt{T \text{ (in degrees Rankine)}}$$

At cruising altitude of 60,000 feet, (the cruising altitude proposed for the SST), the normal temperature is minus 70°F. Mach 1 at this temperature is 680 mph. At an altitude of 150,000 feet, temperature has risen again, and is normally about 50°F. At this temperature, Mach 1 is about 750 mph, which is nearly what it would be at the earth's surface on a 50°F day.

[7] As of August 16, 1969, the official speed record for propeller-driven aircraft was 483 mph. The record was achieved by a modified Grumman F8F "Bearcat". Almost 7 feet of wing was removed, leaving a span of 27.5 feet; weight was reduced from a normal gross of 10,400 to 5,800 pounds, of which almost half was contributed by the oversized engine. The prior record, 469 mph, had been established 30 years earlier by the German ME 209R, which took it from the Italian Macchi Mc 72 seaplane (440 mph in 1934). Thus in 35 years the speed of propeller-driven aircraft had been raised 43 mph. The heroic measures required to accomplish this small increment of extra speed make further advances with piston-engined, propeller driven aircraft, unlikely.

[8] The Italian engineer, Campini, in 1940 tried a workable but impractical alternative in the Caproni N–1. He used a piston engine to drive a large air compressor, air from the compressor was discharged through the open tubular body of the aircraft where additional fuel was sprayed into the air blast and ignited. This was a true jet, but the system was inefficient and was abandoned.

[9] The North American F–100 was a single seat fighter powered by a Pratt & Whitney J57 turbojet. Its top speed was 925 mph at 35,000 feet altitude. Its engine could produce 10,000 pounds of static thrust in cruising, and was equipped with an "afterburner" which increased the thrust to 16,000 pounds for short periods, such as on takeoff. (An afterburner is a tubular extension or tailpipe, added to a jet engine. In its use, fuel is sprayed into it and ignited: the already hot exhaust gas is thus further heated and expanded, greatly increasing the exhaust velocity and resulting thrust of the system.)

[10] For example, the Preparedness Investigating Subcommittee of the Senate Armed Services Committee, chaired by Lyndon B. Johnson, reported at the time: "Transportation of people and cargo at three times the speed of sound and above the weather could be attained through the utilization of B–70 technology in a commercial air vehicle." (Cited in "Congress and the Nation, 1945–1964," Congressional Quarterly, page 307.)

[10] The Caravelle, built by the Sud-Aviation company, was France's first commercial jet transport airplane. Its first flight was May 27, 1955. It entered commercial service May 18, 1958, with Air France. The world's first commercial jet transport was the De Havilland Comet, DH–106, which first flew in 1949 and entered commercial service with BOAC May 2, 1952.

[12] U.S. Congress. House. Committee on Science and Astronautics. "Supersonic Air Transports", Hearings before the Special Investigating Subcommittee of the . . ., 86th Cong., 2nd sess. May 18, 1960, (Washington, U.S. Government Printing Office, 1960) page 43.

[13] Don Dwiggins. "The SST: here it comes, ready or not." (Garden City, New York, Doubleday and Company, 1968), page 117. (294 pages.)

[14] This was "Project Horizon," a report of a task force consisting of Fred. M. Glass, Stanley Gerwitz, Selig, Altschul, Leslie A. Bryan, Gerald A. Gusch, Frances T. Fox, John F. Loosbrook, and Paul Reiber. The report of Project Horizon was submitted to the President Sept. 5, 1961, and made public Sept. 10, 1961.

[15] The turbo-prop engine has a propeller attached through a gear box to the front end of the shaft that extends through a compressor stage, a fuel burning stage, and a turbine stage. The turbine provides the power to rotate the entire assembly. There is also some residual thrust from exhaust gas emitted from the turbine into the tail pipe.

[16] The turbojet, or true jet engine, derives all of its thrust from its exhaust. Air is scooped into an intake aperture, is compressed by a compressor, has fuel injected into the compressed air and ignited, and then the combustion products force their way through a turbine stage which powers the compressor stage. (Compressor and turbine are tied directly to the same central shaft.) Finally, the combustion products are expelled through the tail pipe to provide the jet thrust. Some versions attach still another stage—an "afterburner" after the turbine. The afterburner is simply an extended pipe into which more fuel is injected and burned, to augment the volume and temperature of the exhaust; thus increase the thrust. Since it is a heavy consumer of fuel, the afterburner is used only when augmented thrust is needed, such as on take-off.

[17] The turbo-fan was introduced by the British Metropolitan-Vickers Company, in 1943. This was done by modifying a turbojet engine, adding a two-stage, contra-rotating fan. This rather primitive engine increased the thrust of the basic turbojet by 66 percent, without additional fuel consumption. However, for military purposes, this concept was not attractive. The large frontal area would have too much drag for speeds approaching Mach 1. Conversely, the economy and power provided by the turbo-fan at lower speeds made it important for commercial applications. But since the development of gas turbine engines was funded almost

entirely by the military services, the turbofan was late in coming into use.

[18] U.S. President. John F. Kennedy. "Remarks at Colorado Springs to the Graduating Class of the U.S. Air Force Academy, June 5, 1963." Public Papers of the Presidents of the United States, 1963. (Washington, U.S. Government Printing Office, 1964), page 441.

[19] U.S. President. John F. Kennedy. "Letter to the President of the Senate and to the Speaker of the House on Development of a Civil Supersonic Transport. June 14, 1963." Public Papers of the Presidents of the United States, 1963. (Washington, U.S. Government Printing Office, 1964), pages 475–77.

[20] U.S. Task Force on National Aviation Goals. "Project Horizon." Report of the . . . Federal Aviation Agency. September, 1961. (Washington, U.S. Government Printing Office, 1961), 239 pages. See especially page 17.

[21] Ibid., pp. 48–49.

[22] "Policy Planning for Aeronautical Research and Development, op. cit., page 1.

[23] Ibid., page 3.

[24] U.S. Congress. House. Committee on Science and Astronautics. "Aeronautical Research." Hearings before the Subcommittee on Advanced Research and Technology of the . . . December 1, 2, 4, 8, 9, 10, and 11, 1969. 91st Congress, first session. (Washington, U.S. Government Printing Office, 1970), pages 2–3. (400 pages.)

[25] Don Dwiggins. "The SST: Here it comes ready or not." (Garden City, New York, Doubleday & Company, Inc., 1968), page 122. Members of the steering group were Najeeb Halaby, FAA Administrator; John Stack, NASA Director of Aeronautical Research; and Brockway McMillan, Assistant Secretary of the Air Force for Research and Development.

[26] "Project Horizon", op. cit., page 17.

[27] STAG was chaired by Orval R. Cook, General, U.S.A.F. (ret.), president of the Aircraft Industries Association.

[28] "The SST: Here it comes ready or not", op. cit., p. 123.

[29] The STAG report discussed an SST of Mach 6.5 as against 2.7 for the current SST version, the Boeing 2707-300. Aside from this difference, the STAG report envisioned lower estimated performance criteria. In fact, the current Boeing version under consideration at the close of the calendar year 1970 is designed to have twice the range and payload of the model judged feasible by STAG in 1963.

[30] U.S. President. Lyndon B. Johnson. "The President's News Conference of April 25, 1964." Public Papers of the President's of the United States, Lyndon B. Johnson, 1963–64. Book I. (Washington, U.S. Government Printing Office, 1965), pages 550–1.

[31] U.S. President. Lyndon B. Johnson. "Statement by the President in response to A Report on the Supersonic Transport Program." *In* Ibid., page 702.

[32] U.S. President Lyndon B. Johnson. "Remarks at the Swearing In of General McKee as Administrator, Federal Aviation Agency." July 1, 1965. Public Papers of the Presidents of the United States. Lyndon B. Johnson, Book II. 1965. (Washington, U.S. Government Printing Office, 1966), page 714.

[33] U.S. President. Lyndon B. Johnson. "Statement by the President Upon Authorizing Construction of a Prototype Supersonic Transport Aircraft. April 29, 1967". Public Papers of the President, 1967, Book I. (Washington, U.S. Government Printing Office, 1968), page 478.

[34] "Supersonic Transport Program", February 27, 1969. Weekly Compilation of Presidential Documents, (March 3, 1969), pages 329–330.

[35] "The President's News Conference of December 10, 1970." Weekly Compilation of Presidential Documents, (December 14, 1970), page 1652.

[35a] From 1967 until he joined the SST Program, Mr. Magruder was Chief Preliminary Design Engineer of Lockheed's TriJet L-1011 program. Prior to that he served as Technical Director of Lockheed's SST design in competition for the prototype contract, awarded in 1967 to Boeing Company.

[36] The SST is estimated to cost about $42 million (with spares) as compared with $22 million (with spares) for the Boeing 747 (1968 dollars).

[37-40] "1970 Air Transport Facts and Figures", op. cit., page 16.

[41] NASA research on the "Whitcombe wing" is expected to prove the feasibility of transport applications which permit operation within the transonic region. This would add from 50 to 100 mph to the cruise speed of transport aircraft.

[43] Eugene R. Black, and Stanley deJ. Osbornee, "Supersonic Transport program." (New York, 1963), 105 pages.

[44] Federal Aviation Administration. "Economic Feasibility Report, U.S. Supersonic Transport." Report of the --- (April 1967, Mimeo).

[45] Charles River Associates, Incorporated. "Review of the Economic Feasibility Report for the SST and Supporting Materials". (Cambridge, Mass., Apr. 3, 1967).

[46] Data furnished by DOT.

[47] Charles River Associates, Incorporated. "Review of the Market for the Supersonic Transport, Methodology and Sensitivity Analyses." (Cambridge, Mass., April 1969), 87 pages.

[48 49] "Positive" contributions add to the export account and "negative" one add to the import account. Neither word has a good or bad connotation. Most economists prefer whatever balance of visible and invisible imports and exports facilitates desired flows of goods, services, and capital without undue strain on prices, employment, and fiscal stability among all the nations affected. In general a high total value of reciprocal trading indicates economic health. In essence, the concept is that high productivity and high employment go with a high total in reciprocal trading.

Goods produced for domestic as well as foreign sales are produced in higher quantities than goods intended for only one of these markets. High quantity production tends to lower the cost of most items. Hence, they become available to more people and may contribute to a higher standard of living.

Conversely, the lack of an export market results in a lower production of perhaps costlier goods. If the same items are available at a lower price overseas, there is a temptation to increase imports, which could reduce domestic manufacturing even more. The nation may then seek to sharply encourage the development of exportable goods, or to limit imports. Often both are done.

[50] They were: Kenneth Arrow, Francis Bator, John Kenneth Galbraith, and Wassily Leontief of Harvard University; Richard R. Nelson, Merton J. Peck, James Tobin, and Henry C. Wallich of Yale; W. J. Baumol of Princeton; Milton Friedman of the University of Chicago; Walter W. Heller, of the University of Minnesota; Robert M. Solow, Paul Samuelson, and C. P. Kindleberger of Massachusetts Institute of Technology; and Arthur M. Okun, former chairman of the President's Council of Economic Advisers.

[51] "The SST." Remarks of the Hon. J. W. Fulbright on the floor of the Senate. Congressional Record, (September 15, 1970), pages S15398–405.

[52] "U.S. Supersonic Transport—Gray Book," op. cit., page-G-12.

[53] Idem.

[54] "Technology: Processes of Assessment and Choice," op. cit., page 1.

[55] Ibid., page 3.

[56] For example, "Sonic Boom Experiments at Edwards Air Force Base." Prepared under contract by Stanford Research Institute, For the United States Air Force through the National Sonic Boom Evaluation Office, (Arlington, Virginia, July 28, 1967).

[57] John A. Blume and Associates Research Division, "Structural Reaction Program National Sonic Boom Study Project." Report prepared for the Federal Aviation Agency, April, 1965. (Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia, 1965), pages 11–12. (Report no. AD-474-778).

[58] The dimension is in pounds per square foot and not per square inch, which is the more familiar measure of pressure. Thus sonic boom units are 1/44 of those usually encountered in air pressure reports.

[59] Under certain atmospheric conditions, the boom pressure could be amplified to double the normal 2 to 2½ psf over pressure.

[60] The problems of correlating sound energy levels with human perception are discussed in "Noise abatement: summary of the issues", by Migdon R. Segal, (Multilith Science Policy Research Division, Legislative Reference Service, Library of Congress, November 4, 1970), 44 pages (See especially "Quantifying noise: sound vs. loudness", pages 4–11.)

[61] Boeing Corporation. "The Supersonic Transport and the Environment," (Boeing Corporation, January 1971 (revised)), page 6.

[62] Letter from B.A.C. to G. Chatham, Feb. 9, 1971.

[63] The REM, or "Roentgen Equivalent, Man", is derived from the RAD, multiplied by a bio-damage constant. The RAD is equal to 100 ergs of absorbed radiation energy per gram of matter. The biodamage constant depends on the measured amount of bio-damage resulting from each specific kind of radiation. Numbers of REM indicate, directly, the extent of damage resulting from the exposure, per indicated time period, expressed as REM per year or millirem per hour .

[64] The exposure rates set by various Federal agencies are based upon guidelines prepared by the Federal Radiation Council in 1960 and subsequently approved by the President.

[65] Comparative Evaluation of the Radiation Environment in the Biosphere and in Space. Hermann J. Schaefer, Naval Aerospace Medical Institute and NASA, December, 1968, NAMI-1054, p. 2.

[66] Fundamentals of X-ray and Radium Physics, Joseph Solman, M.D., third edition, Charles C. Thomas, (date) (where) p. 329.

[67] This exposure includes "normal" solar flare activity but does not include the giant flare of 23 Feb. 1956.

[68] Table furnished by Department of Transportation.

[69-71] The figure of 500 SSTs has been accepted and used by the Department of Transportation as a conservative average of a series of independent marketing projections.

[72] Broecker, Wallace S. "Man's Oxygen Reserves," Science, (Vol. 108, No. 3939, June 20, 1970), pages 1537–1538.

[73] U.S. President's Science Advisory Committee, Environmental Pollution Panel "Restoring the Quality of Our Environment" (The White House, November 1965) pages 115–116.

[74-5] Ibid., page 126.

[76] Ibid., page 119.

[77] "Man's Impact on the Global Environment." Report of the Study of Critical Environmental Problems, op. cit., page 88.

[78] Idem.

[78a] I.e., air temperature measured by weather stations as opposed to air temperature measured by balloons or other high altitude systems.

[79] "Restoring the Quality of Our Environment," op. cit., pages 122 and 123, citing: Murray J. Mitchell, Jr., "Recent secular changes of global temperature," Annals of New York Academy of Sciences, (Vol. 95,

1963), pages 235–250, and Murray J. Mitchell, Jr., "On the world-wide pattern of secular temperature change." *In* Changes of Climate, Rome Symposium by UNESCO–WHO, Published in Arid Zone Research Volumes, (Paris, Vol. 20, 1963), pages 161–181.

[79b] In the broadest sense, all meterological phenomenon may be regarded as a reactive interface between two heat sources (the earth's internal heat and the solar flux) with the energy sink of outer space. Among these three factors, the most critical and also the most variable is the solar flux. Although short term climatic changes can be coupled to catastrophic volcanic events, longer term changes correlate closely with cyclic variations of the sun. This agreement was shown by S. J. Johnson, W. Dansgaard and H. B. Clausen, in their paper "Climatic Oscillations 1200–2000 AD," Nature, (August 1, 1970), pages 482–483.

[80] Rutgers University, Center of Transportation, "Study on pollution reduction potential of aerial commutation," FAA report, (July 1970).

[81] Data furnished by Department of Transportation.

[82] See also the section of this paper dealing with particulates and volcanic action, pages 109–120.

[83] U.S. National Academy of Sciences. "Weather and climate modification: problems and prospects; vols. 1 and 2." Final report of the Panel on Weather and Climate Modification to the Committee on Atmosphere Sciences, National Academy of Sciences, National Research Council, (Publication No. 1350. Washington, D.C. 1966), page 11.

[84] "Memo report to the Administrator of ESSA," (October 4, 1965.)

[85] Table furnished by Department of Transportation.

[86] "Man's Impact on the Global Environment." Report of Critical Environmental Problems SCEP, op. cit., page 17.

The number of thunderstorm injections per day is estimated to be between two thousand and six thousand. Seasonal variations and low altitude weather changes give a wide range to this daily insertion of water from natural causes.

The number of stratospheric penetrations within the continental United States is estimated to be 505 per year, 55 of which reach attitudes higher than 18 km. [R. F. Jones, et al. "World Meteorological Problems in the Design and Operation of Super Sonic Aircraft." *In* World Meteorological Organization, Publication No. 216. (Geneva, Switzerland, 1965).]

The water content of the stratosphere, however, remains quite stable and very low. ESSA data show 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 thunderstorms 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 (a conservative estimate) 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 that normal to its stable state.*

[87] Ibid., page 103.

[87a] The figure of 500 storms per day was selected as an arbitrary but conservative number for illustrative purposes. Estimates of the actual number of daily storms of a magnitude to penetrate into the stratosphere ranged between 5,000 and 6,000.

[88] Man's Impact on the Global Environment." op. cit., page 16.

[89] Communication from ESSA.

[90] Man's Impact on the Global Environment," op. cit., page 16.

[90a] The amount of the sun's energy actually reaching the surface of the earth is largely determined by the angle (latitude and time of day) of the earth's surface to the sun, and the clarity of the low altitude atmosphere (determined mostly by weather conditions). The absorption of solar energy by the stratosphere is minute.

[90b] Reactive particulates of sulphur (e.g. sulphurous or sulphuric acid or ammonium sulphate) may grow in size due to photochemical forces which may steadily add additional atoms to the original molecule (e.g. adding nitrogen and hydrogen to a sulphate radical to form ammonium sulphate).

[91] Among the others: fuel consumption was improperly assumed to be a constant, instead of decreasing steadily during a trip; the figure used was 66 tons/per hr./aircraft whereas a more accurate estimate would be the average consumption of 53 tons/hr. Also, an average sulfur content of .05% was used. Present-day fuels range between .09% and .004%. Sulfur is undesirable in jet engines because it produces corrosive combustion products that shorten engine life. The producers of jet fuel have been steadily reducing sulfur content and the trend is expected to continue. On the basis of past experience with this progress, a sulfur content of somewhere between .01% and .005% would be a reasonable expectation by the time the Boeing SST could become operational. The removal of sulfur from fuels of all kinds may be accelerated by the President's proposed graduated tax on sulfur bearing fuels. (Described in New York Times, (February 2, 1971), page 24).

[92] S.M. Rosen and E. P. Ney. "Vertical Distribution of Dust in the Stratosphere." *In* "Meteor Orbits and Dust." Proceedings of a symposium sponsored by the National Aeronautics and Space Administration and the Smithsonian Institution, Cambridge, Mass., August 9–13, 1965. (Washington, U.S. Government Printing Office, 1967) page 347.

[93] T. Grjebine. "Concentration of Magnetic Dust in the Stratosphere." *In* "Meteor Orbits and Dust," op. cit., pages 361–364.

[94] Personal communication with S.C.E.P. numbers.

[94a] 5.8×10^{-5} grams/^{3} based on weight of air at 60,000 feet which is 120gm/m^{3}.

[95] NCAR Quarterly (February 1969, No. 22), page 12.

[96] Melvin A. Cook. "The Science of High Explosives." (New York, Reinhold, American Chemical Society Monograph Series), 1958, page 1. (21 pages).

[97] Ernst Behrendt, "Earth's most awful blast", Nature Magazine, v. 39, No. 3, March, 1946, pp. 121–124, 160.

[98] The figure of 500 was selected as an arbitrary but conservative number for illustrative purposes. It represents about 10% of the estimated total of the daily storms capable of penetrating the stratosphere.

"THE MAN WITH THE HOE"

HON. JOHN M. ZWACH

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. ZWACH. Mr. Speaker, Dave Gallagher, writer for the Montevideo American News in our Minnesota Sixth Congressional District, wrote a very thought-provoking editorial in the March 4 issue of that newspaper.

In order to share Mr. Gallagher's thoughts with my colleagues and all of the other people who read it, I would like to insert his editorial in the CONGRESSIONAL RECORD:

"THE MAN WITH THE HOE"

It has become an unpopular thing of late to champion the cause of the underdog, the little guy, the multitudes of people who are less fortunate than most.

Washington is full of people representing labor unions, education, agriculture and a myriad of other causes, but nowhere in the lobbies can be found a true champion of the world's downtrodden masses.

"Bowed by the weight of centuries, he leans upon his hoe and gazes on the ground, the emptiness of ages in his face, and on his back the burden of the world." Edwin Markham began his poem, "The Man With The Hoe" in this way.

He goes on. "Who made him dead to rapture and despair, a thing that grieves not and that never hopes, stolid and stunned, a brother to the ox? Who loosened and let down this brutal jaw? Whose was the hand that slanted back this brow? Whose breath blew out the light within this brain?"

And then Markham makes a comment that is as valid today as it ever was. "Is this the dream He dreamed who shaped the suns and marked their ways upon the ancient deep? Down all the caverns of hell to their last gulf there is no shape more terrible than this—more tongued with censure of the world's blind greed—more filled with signs and portents for the soul—more packed with danger to the universe."

And then he speaks to us and asks us a question that no man can answer. "O masters, lords and rulers in all lands, is this the handiwork you give to God, this monstrous thing distorted and soul-quenched?

"How will you ever straighten up this shape; touch it again with immortality; give back the upward looking and the light; rebuild in it the music and the dream; make right the immemorial infamies, perfidious wrongs immedicable woes?"

How indeed? For as our society has vaulted higher and higher with each passing year, as our homes and lives reflect a standard of living men in years past would not dare dream of, how, with all that we have can we answer the cries of those we have mangled along the way?

But there is a warning issued by Markham that we would do well by considering.

"O masters, lords and rulers in all lands, how will the future reckon with this man? How answer his brute question in that hour when whirlwinds of rebellion shake all shores? How will it be with kingdoms and with kings—with those who shaped him to the thing he is—when this dumb terror shall rise to judge the world, after the silence of the centuries?"

We can close the book and put the poem away and be done with it, but the question lingers on. The whirlwinds of rebellion are ripe in our country today and we are having to contend with peoples we do not know.

What will happen when the masses of the

world's people who have been oppressed, exploited and made to live in servitude to a "better class of people" rise up to claim what is rightfully theirs?

The Indian, the black man and countless other minority groups have been improperly treated and maligned for centuries; they have been silent for centuries, but the whirlwinds of rebellion are shaking our shores.

O masters, lords and rulers in all lands, how will the future reckon with this man? And how will the future reckon with us?—Dave Gallagher.

FIFTY-THIRD ANNIVERSARY OF LITHUANIA'S DECLARATION OF INDEPENDENCE

HON. JOHN H. TERRY

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. TERRY. Mr. Speaker, it is fitting that during this month of February, the birth month of the Father of our Country, George Washington, we take note of the 53d anniversary of the Lithuanian Declaration of Independence. We Americans have not fought a war on our soil since the Civil War, nor have we suffered from the ravages of a foreign invader since the War of 1812. Lithuania on the other hand was invaded by the Soviet Union in 1940. She then was under German Nazi occupation from 1941–44. In 1944, the Soviets again occupied Lithuania.

From 1944–52, the people of Lithuania fought an incredible guerrilla war against the Soviet NKVD units, as well as regular units of the Red Army. Unfortunately, the free world allowed this struggle to go unnoticed and the weight of Soviet manpower and weapons gradually overcame these heroic people. The Lithuanian nation was forced into sullen silence as the weight of the Secret Police—NKVD—and Communist Party apparatus settled down to the grim business of rooting out ideological heresy or the slightest form of deviation. Up until recently, very few non-Soviet citizens were ever permitted to travel to these areas, so very little information on the true feelings of the Lithuanians was available to the free world. However, earlier this year, the startling and tragic attempted defection of Simas Kudirka brought this almost forgotten nation back into the headlines. This, indeed, is one of the purposes of my remarks, because all too often we only think about these people languishing behind the Iron Curtain, when some startling incident like that of Simas Kudirka puts Lithuania on the front page of our newspapers. We should all realize that the people of Lithuania are not permitted to hold noisy demonstrations filmed by television camera crews, but their opposition to Soviet tyranny exists and we support their continued yearning for freedom.

It is my view, and I intend to urge this upon the State Department, that our delegate to the United Nations should continuously remind the Soviet Union of the desires of the various peoples of that nation for self-determination.

REMARKS MADE BY JROTC CADETS BEFORE THE NATIONAL COUNCIL OF THE RESERVE OFFICERS ASSOCIATION

HON. STROM THURMOND

OF SOUTH CAROLINA

IN THE SENATE OF THE UNITED STATES

Tuesday, March 9, 1971

Mr. THURMOND. Mr. President, it is a pleasure for me to bring to the attention of my distinguished colleagues and all Americans the fine remarks made by Junior Reserve Officer Training Corps—JROTC—cadets before the National Council of the Reserve Officers Association's—ROA—midwinter meeting at the Sheraton Park Hotel in Washington, D.C., on February 19, 1971.

Several of the cadets were invited to address the council and to express their views about the JROTC program. Their remarks are most impressive. It is refreshing and reassuring to hear about their high regard for the program. I wish anti-ROTC youth in America could hear how these young men feel about patriotism, dedication to country, and how this program helps mold leaders physically, mentally, socially, and spiritually.

Mr. President, I ask unanimous consent for the remarks of these cadets and a biographical sketch of them to be printed in the Extensions of Remarks.

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

REMARKS BY CADET LT. COL. JOSEPH V. TRUHE

Mr. President and members of the National Convention: The problems confronting the military establishment in the United States are complex and varied. A generation of young people has emerged and is challenging institutions and values accepted as inalterable as recently as five or ten years ago. There is a tension in America between those who believe these challenges are just and those who reject criticism, either because it threatens to upset their long-established security or reveal to them the fundamental weaknesses in the positions they take. The military establishment, if it hopes to maintain its role in a democratic society, cannot go this same route. It cannot, nor should it, rely on its established strength to weather the storm of revolutionary feeling, since this very strength relies upon the support of these people as well as those who now defend the military establishment. It must be able to criticize its own failings with a sincerity and objectivity that will satisfy the valid criticisms of those who attack it.

To explain how the military is to do this it is necessary to look at the roots of the student unrest that has given rise to the criticism of the military. Education has played the primary role in making youth more aware, perceptive, and discerning people than their counterparts of preceding generations. The improvements in education have not resulted in merely more knowledge sooner. Rather, the change in American education has been a shift from knowledge of details to an emphasis on the ability to imaginatively analyze situations and facts, and from this analysis, the modern student is prepared and willing to make value judgments on the behaviors of past societies and apply them to today. They draw comparisons between the secret diplomacy and monumental stupidity of world leaders that resulted in World War I, and the conduct surrounding the War in Vietnam. They do not want to fall victim to manipulation by politicians and become tools in their hands for the settlement of petty quarrels that do not in any way concern the welfare of the common people, as was the case in Europe for many centuries. Students demand answers to questions like: Why are cost overruns of 100 to 200% not seriously questioned in Congress? How can top enlisted men and officers be raking in money from the exploitation of soldiers in Vietnam? What is the justification for a mammoth defense budget that dwarfs social concerns? These questions, and innumerable others like them, remain generally unanswered, and add to the major credibility loss that has affected all government, but the military establishment in particular. Students are entitled to the answers to these questions and demand a frankness and sincerity on the part of those they question that does not insult their intelligence. They cannot be satisfied or silenced with half-truths and contrived rationalizations of conduct that cannot be defended. And they will not tolerate the desperate criticism of those who vainly search faults in youth with which to justify their own closed-mindednes.

Some say that the radicals are a minority, but the vocal are only the spokesmen for the sympathetic, and I believe that the extent and potential implications of the intellectual revolt among students are rather more underestimated than otherwise. They will take the positions of leadership in the years to come, and if the military establishment believes in its own vital function in the world that these young people will live, the military must assume the burden of proof; it must prove itself by actions as well as words if it is to be allowed a place in their society, for it will not be blindly accepted and followed. This requires that the military establishment take a long hard look at itself to determine whether it will face up to a challenge more demanding than any war, a challenge of its own country to serve that country according to its true purposes.

To this end, the vast educational resources of the military system have a very clear job in the near future. In Junior ROTC especially, there exists an opportunity to gain the attention of the minds of our youth and establish a belief in the necessity and potential benefit to the country of a vital and vigorous defense establishment. Success in this endeavor will be an accomplishment at least equal to the maintenance of world peace, for it will mean success in the defense of the democratic system in America, one of the primary goals of the defense establishment.

BIOGRAPHICAL SKETCH OF CADET JOSEPH V. TRUHE, JR.

Cadet Lieutenant Colonel Joseph V. Truhe, Jr., is a student in his senior year at St. Johns College High School, Washington, D.C. He ranks first in his class academically, is the Regimental Executive Officer of the Junior Reserve Officers' Training Corps unit at St. Johns, and attended a Junior ROTC camp at Fort George G. Meade in the summer of 1970. Cadet Truhe has received numerous awards for academic excellence and participation in school activities. He played a leading roll in a recent production by the Mask and Wig, the school's dramatic club. Following graduation from St. Johns he plans to continue his education at one of the leading colleges or universities. Cadet Truhe is 18 years of age and currently resides in Falls Church, Virginia.

REMARKS BY CADET CAPT. RICHARD A. BAUMAN, JR.

Mr. President and members of the National Council: It gives me much pleasure to be the spokesman for all Marine Corps Junior ROTC units. I bring to you the greetings of the 3400 Marine Corps Junior ROTC

Cadets who compose the twenty five organized units that are located in 19 states of the nation.

Pride is a simple word with many complicated meanings. The dictionary gives six different definitions for pride, but to the Marine it has but one meaning. This meaning is not often expressed in words, it is rather an idea, an idea which is common to all who wear the "eagle, globe and anchor of the corps". The *Marine Corps Junior Reserve Officer Training Corps* is attempting to instill this pride, this understanding of one's country and what it stands for, into the youth of today.

Pride and tradition are but a part of the lesson taught. The major purpose is to produce "first class" citizens, men who will be credits to their school, community and country.

The official mission of the Marine Corps Junior ROTC is: "to develop informed citizens, strengthen character by the teachings of discipline, develop an understanding of the military responsibilities of each citizen, and promote an appreciation of and motivation for careers in the U.S. Marine Corps.

Even though only in my second year of training, I have developed some specific thoughts on the program. It is my opinion that benefits far outweigh the administrative difficulties encountered.

The benefits of the Junior ROTC program are many and varied. The nation will profit from improved citizenship among its young. The armed forces of the United States will find within its ranks Junior ROTC trained personnel willing to take on responsibilities and to perform assigned duties well. Also, the school and community will be improved by the pride which the cadet shows for all in which he is concerned. Most important, the individual cadet will profit from the loyalty and self-confidence he has learned through Junior ROTC.

However, much like our nation's armed forces, recruiting is a difficult problem for the ROTC, yet this is not as large a problem as it could be.

It is interesting to note that even with the large number of anti-ROTC movements in colleges today, the high school Junior ROTC cadets enjoy a pleasant relationship with their fellow students.

Through a recent poll taken by our school newspaper, I was pleasantly surprised to find that a majority of the students favor Jr. ROTC in our school. This kind of support can only improve the individual cadet's performance and add to the pride he has in his unit.

In an effort to help you visualize a Marine Corps Jr. ROTC unit, I will now tell you something about the average JROTC cadet. He is a young male American citizen between the ages of 14 and 18. This age group covers grades from the foolish high school freshman to his learned senior counterpart. With a wide variety of talents and academic skills, he may come from the affluent society of an urban area or the hills of rural America.

One of the major objectives of the Jr. ROTC is to help the cadet find the best way to serve his country. This aid is based not upon background but upon individual ability.

It is the hope of the Jr. ROTC to encourage and assist its most talented cadets in gaining commissions as officers in the United States armed forces.

This assistance goes beyond providing information to those interested in military careers. Today the Marine Corps Jr. ROTC unit can offer to the cadet a direct nomination to the U.S. Naval Academy or a chance to compete for a full Naval ROTC scholarship.

In direct support of the attempts to obtain all volunteer armed forces, the Jr. ROTC encourages the cadets who are unwilling or unable to seek commissions, to seek the many advantages of an enlisted career. The Marine Corps JROTC cadet who enlists in the regular Marines is guaranteed an advanced rating if he has finished the full three year course. It is difficult to conceive of anyone joining another service after a three year Marine Corps indoctrination, however, should a cadet choose to do so we won't consider him a complete loss.

The cadets who do not qualify for military service as either officers or enlisted will benefit from the improved patriotism and citizenship which the Jr. ROTC program encourages.

The Reserve Officers Association is known to have a long standing interest in the ROTC programs. It is hoped that we may look forward to the ROA's continuing support.

I am sure that many of you here today received your first taste of military life in ROTC. I hope that you will continue to support the Junior ROTC in order to further this important program in our nation's high schools.

In conclusion I would like to say that I have found Jr. ROTC to be a most worthwhile program. I am sure that the students who turn to long hair and the "anti-establishment" philosophy will never find the pride and sense of accomplishment that I have found in the Marine Corps Junior ROTC.

BIOGRAPHICAL SKETCH OF CADET CAPT. RICHARD ARNOLD BAUMAN JR.

"Rickie", the son of CDR Richard A. Bauman, USCG, and Mrs. Bauman, was born 4 June 1953 in New Bedford, Massachusetts. He is a senior at Churchland High School in Portsmouth, Virginia.

When the Marine Corps Junior Reserve Officer Training Corps was instituted at Churchland High School in June 1969, Rickie became a "plankowner" in the 18th Marine JROTC unit in the country. He rose through non-commissioned and commissioned ranks to cadet captain and senior cadet officer of his unit. In June of 1970 he was awarded the American Legion Bronze Medal for Military Excellence.

Active in school, church and community activities, he is an Eagle Scout and Junior Assistant Scout Master of Troop 260, BSA, Portsmouth, Virginia. He was a member of the President's Portsmouth Council on Youth Affairs.

Cadet Captain Bauman has long been interested in following the sea as a career. He has made ocean patrols in Coast Guard cutters, including a Florida Straits patrol which resulted in the rescue of thirteen Cuban refugees. To further this interest, he has sought and received nomination for appointment to the Federal Merchant Marine Academy at Kings Point. Should he receive this appointment, Rickie intends to enter the Navy upon completion of his schooling.

In addition to the Military Excellence Medal, he holds the ROTC II Scholastic Achievement Award and the Longevity Ribbon.

Rickie has a sister who is a student at Lynchburg College, Lynchburg, Virginia and two younger brothers at home.

REMARKS BY SQUADRON COMDR. THOMAS MICHAEL FARAH

Mr. President and members of the National Council: It is a great honor for me to be here today to speak to the members of the Reserve Officers' Association, and represent the Air Force Junior R.O.T.C. program.

This is my last year in the program, and I can say, quite confidently, that there is a great deal I have learned that will be very useful to me in the future—as a citizen of this country.

I am convinced that our form of government works best when the people are knowledgeable enough about issues to question their leaders and make intelligent and independent decisions. The system fails when, due to ignorance, the people must simply follow the lead of public officials. By broadly educating nearly every American citizen, this country has created one of the most well-informed electorates in the world, and, as a by-product, one of the most opinionated.

The time in which we live, however, by its progressiveness, is threatening the quality of government and public decisions. New technological advancements are being made every day in every area, and the public, for the most part, is unable to keep up. One of the areas in which advances are being made at a fantastic rate is aerospace. Think of the major issues surrounding such projects as the ABM, the MIRV, the SST, the F-111, and the manned space effort. If Americans are to formulate intelligent opinions concerning such costly projects, they must know something about space and aeronautics in general; yet, the average high school curriculum does not even touch upon it.

Air Force JROTC is in the forefront of developing the teaching methods, the literature, and the enthusiasm for this entirely new subject area. It has been very interesting for me to be a part of this beginning in aerospace education—as interesting as it must have been to attend one of the first algebra or chemistry classes hundreds of years ago.

There is something else that JROTC has given me—the opportunity to really understand leadership and people. Anyone can read about human behavior, motivation, and abilities, but ROTC is an operating leadership laboratory involving real people and real situations. We learn to respect one another, to work together, and to be proud of the Corps of cadets. One thing leads to another, and before you know it l'esprit de corps sets in.

Last May, during the public unrest following the American incursion into Cambodia, our JROTC unit was given a chance to test its unity. Our squadron had scheduled its annual review for the latter part of May, and several rumors and threats were circulating around the school that certain students would attempt to disrupt the event. Our instructors, Lt. Col. Pavlakis and M. Sgt. Tatman, put the question to the whole squadron—to cancel the review or go ahead with it as planned. The result was a unanimous vote to proceed with the review, and the event was held without incident.

In my opinion, there were three reasons why there was no trouble. First, was the solidarity of the cadets; second, the students at Oxon Hill Senior High who oppose the war realize that our involvement in Vietnam is not to be blamed on the military but elected public officials; and third, there is a great deal of rapport between cadets and the rest of the student body.

Our nation lives through three basic institutions—political, economic, and military. All are vital to our survival. We study politics and basic economics in our Civics, history, and Problems of Democracy classes. However, we tend to ignore the military—which I feel is a cause for the many misconceptions the public has today. I think that I have gained a more complete understanding of the military's place in our society through the JROTC program, and I think the cadets have carried this understanding to much of the student body.

I am convinced that JROTC is essential—essential to all those who seek a more complete education with respect to the structure of our nation.

BIOGRAPHICAL SKETCH OF SQUADRON COMDR. THOMAS MICHAEL FARAH

At the present time Tom is a member of: President of the National Honor Society; Vice-President of the Band; Student Council Representative; President of the ROTC Club; Member of the Constitutional Revision Committee; Member of the debate team; and a Member of the Coffee House Production.

In the past he has been: Member of the chess club; Homecoming Chairman 1970; and the Junior Class Float chairman.

In the summer of 1970 he was: Elected senior senator at Boys State; and Appointed Sec of Commerce at Boys Nation.

Tom is also a major in the corps of cadets and is the squadron commander.

REMARKS BY CADET LT. COMDR. THOMAS DIGGS

Mr. President and Members of the National Council: It is indeed an honor to be addressing you on behalf of the N.J.R.O.T.C. Program. The topic I will be speaking on is, "What N.J.R.O.T.C. means to me and to my school." Before starting I would like to give you just a short word of encouragement concerning my speech. Last night I was reviewing it in the living room. My parents were interested and asked to hear it. I delivered it to them. My father was asleep before the end of my first point.

N.J.R.O.T.C. means a lot to me because it has done so very much for me. It has helped to round me out physically, mentally, socially, and spiritually. One thing that means a lot to me is what the program is doing for my friends. I believe that many of my friends who are in the program will make good career officers. Some of them who want to go to the Naval Academy faced the problem of not being able to get an appointment because they didn't know the right people. There are now appointments allotted to N.J.R.O.T.C. graduates; my friends will be able to compete for these. N.J.R.O.T.C. has also helped many of my friends to decide in favor of military careers. One of them has an appointment to the Naval Academy and one has an appointment to the Military Academy at West Point.

We have been taught to love this country. We were not just told to love this country because we should, but rather we were given reasons. The years of hardship, the monetary expenditures and, most important, the blood of our fellow countrymen which was shed in defending our country: these are some of the reasons given. Before entering the program I had no definite reasons for loving my country. Now that I have gone through most of the program, I do. Along with a love for this country comes a strong feeling of patriotism and a desire to serve it.

We are taught to respect authority on all levels, something that is important for all citizens.

Team spirit is encouraged. We have squad and platoon competition. This type of competition is helpful in producing a strong esprit de corps. Friendly competition also teaches us how to work with, get along with, and respect others in the team.

The military training has helped me, as I said earlier, in my spiritual life. It has helped me by improving my self-discipline and self-control. These are important attributes in the service of Christ or in any other type of service. When standing in ranks being told very politely how to stand or how to hold a rifle correctly by our unit drill instructor or by a friendly, fatherly Marine drill sergeant we can't help but to gain self-control.

Our instructors cultivate our self-reliance by encouraging us to think for ourselves. Self-reliance is importance but should always be preceded by a reliance upon God. This is implied in our course.

Mr. Pfaender, our Senior Class Vice Principle, said of N.J.R.O.T.C., "It has added a dignity and respect to our school, a dignity and respect that we might not have if we did not have our unit here at Northwestern."

Mr. Reed, our Principal, is a retired Naval officer; he is very happy that the N.J. R.O.T.C. program is at Northwestern and that it was one of the original Navy units in the country. The faculty is proud of the performance of the cadets inside the classrooms, as well as outside them. Several teachers have told our Naval Science Instructor, Capt. Theobald, that the cadets look better, try harder, and are more polite than most of their other students.

In closing, I would like to say that the community appreciates and stands behind our program. The families in the Northwestern area are very proud that the school and government are jointly instilling feelings of patriotism in today's young people.

Thank you very much for your time and may God bless you.

BIOGRAPHICAL SKETCH OF LT. COMDR. THOMAS DIGGS

Thomas is the younger of two children. His sister is married and is a second semester senior at the University of Maryland. She will be a special education teacher after some graduate work. Tom's father is a Vice Principal at Northwestern High School. His mother is a homemaker.

Presently, Thomas is a senior at Northwestern High School. He was in the N.J. R.O.T.C. Ceremonial Guard in his sophomore year, and the Flag Detail in his sophomore and junior years. Thomas has been a member of the School Light Crew for two years, also the chairman of the School Sound Crew for two years. Currently, he is serving his second term as president of the Bible Club at school. In the Spring of his junior year, he was inducted into the National Honor Society. His class rank is 21 out of 720.

Thomas was the Leading Petty Officer of the U.S.S. Skipjack Division of the U.S. Naval Sea Cadet Corps until it disbanded due to unavoidable circumstances.

He is very active in his church. He sings in the Senior High Choir, participates in weekly visitation, works as an audio-visual technician, and he is a photographer for the youth department.

Tom's interests and hobbies are precision and trick military drill, boating, and photography. He enjoys creative work, such as building patios and backyard fishponds.

Thomas plans to attend the Baptist Bible College in Springfield, Missouri, starting next August. He plans to take the Pastor's Course. Upon graduation Thomas plans to start a church, or become a Navy Chaplain, depending upon how the Lord leads.

ILLINOIS DAIRY FARMERS DESERVE FAIR TREATMENT

HON. ROBERT McCLORY

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. McCLORY. Mr. Speaker, during 1970 the Food and Drug Administration seized countless tons of foreign cheeses for reasons ranging from "inaccurate contents statement" to "filthy, unfit for food." Important to the people of the 12th District of Illinois is the fact that thousands of pounds were barred for the latter reason by FDA inspectors in Chicago on April 29, and another 260 pounds were barred in Chicago for the stated reason that the cheese was "decomposed, held under insanitary conditions." These frightening facts alone would compel me to support legislation which would provide a more definitive set of standards to be applied to foreign cheeses.

Last year, dairy imports amounted to almost 2 billion pounds milk equivalent—almost twice the import goals previously set by both the Nixon administration and the Johnson administration. The reason for this flood of imports is basically attributable to the fact that foreign cheeses selling at more than 47 cents per pound are presently exempt from the import program, which is designed—supposedly—to protect American cheeses. If the American dairy producer must place his superior products in competition with such inexpensive foreign products, it would seem incumbent upon the Federal Government to insure that such products are at least safe for human consumption.

Mr. Speaker, the American dairymen produce some of the most nutritious products in the world. At the present time they are not enjoying a very favorable price support level. In 1970, that level was set at 85 percent of parity, but increasing dairy costs reduced the parity ratio to 81 percent, with the result that dairy income continues to lag behind the remainder of the economy. By the act of 1949, Congress authorized the Secretary of Agriculture to provide price supports of up to 90 percent of parity. It would appear that some increase is now needed to keep these intelligent, hardworking citizens in the business of providing us with the most basic of foods.

Mr. Speaker, I would urge that the Congress promptly and seriously consider imposing a requirement that foreign cheeses, at a minimum, meet the standards currently set for domestic dairy products.

FUTURE FARMERS OF AMERICA

HON. ED JONES

OF TENNESSEE

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. JONES of Tennessee. Mr. Speaker, while I was on leave of absence, because of a death in my family, the country observed National Future Farmers of America Week in honor of a truly outstanding organization of young men.

Since its beginning in November 1928, in Kansas City, the FFA has spread to all 50 States and to Puerto Rico. Today the organization has more than 9,000 local chapters with a total active membership of over 450,000.

The theme of this year's observance was "Involved in America's Future," and I can testify from firsthand observation and experience that no group of youngsters could be more thoroughly involved in our Nation's destiny.

Through the vocational agriculture programs in their local high schools, these young men receive not only vocational instruction, but they also receive training and encouragement in leadership, citizenship, and patriotism as well. This is commendable, for in a very few years our people will be depending on these very boys to provide our Nation's supplies of food and fiber.

As a former member of the FFA and as the recipient of the organization's Alumni Service Award last year at its national convention in Kansas City, I know that FFA is indeed "involved in America's future." I salute the Future Farmers of America and commend the organization to the entire country.

SGT. GORDON R. ROBERTS OF LEBANON, OHIO, AWARDED THE MEDAL OF HONOR AT WHITE HOUSE CEREMONY

HON. WALTER E. POWELL

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. POWELL. Mr. Speaker, on March 2, 1971, I had the privilege of attending the Medal of Honor ceremonies at the White House and witnessed the awarding of this high honor to Sgt. Gordon R. Roberts of Lebanon, Ohio.

This young man demonstrated courage and dedication to his country and to his men which should make every American proud. In particular, his mother and father, Mr. and Mrs. Al Russell, his friends, relatives, and all have much to be grateful for and reason to take pride in his actions.

The heroic deeds of Sergeant Roberts are described in the citation presented to him by the President and I insert the text of that citation at this point in the RECORD:

CITATION

The President of the United States of America, authorized by Act of Congress, March 3, 1863, has awarded in the name of The Congress the Medal of Honor to Sergeant Gordon R. Roberts, United States Army, for conspicuous gallantry and intrepidity in action at the risk of his life above and beyond the call of duty.

Sergeant (then Specialist Four) Gordon R. Roberts distinguished himself on July 11, 1969 while serving as a rifleman in Company B, 1st Battalion, 506th Infantry, 101st Airborne Division, during combat operations in Thua Thien Province, Republic of Vietnam. Sergeant Roberts' platoon was maneuvering along a ridge to attack heavily fortified enemy bunker positions which had pinned down an adjoining friendly company. As the platoon approached the enemy positions, it was suddenly pinned down by heavy automatic weapons and grenade fire from camouflaged enemy fortifications atop the overlooking hill. Seeing his platoon immobilized and in danger of failing in its mission, Sergeant Roberts crawled rapidly toward the closest enemy bunker. With complete disregard for his own safety, he leaped to his feet and charged the bunker, firing as he ran. Despite the intense enemy fire directed at him, Sergeant Roberts silenced the two-man bunker. Without hesitation, Sergeant Roberts continued his one-man assault on a second bunker. As he neared the second bunker, a burst of enemy fire knocked his rifle from his hands. Sergeant Roberts picked up a rifle dropped by a comrade and continued his assault, silencing the bunker. He continued his charge against a third bunker and destroyed it with well-thrown hand grenades. Although Sergeant Roberts was now cut off from his platoon, he continued his assault against a fourth enemy emplacement. He fought through a heavy hail of fire to join elements of the adjoining company which had been pinned down by the enemy fire. Although continually exposed to hostile fire, he assisted in moving wounded personnel from exposed positions on the hilltop to an evacuation area before returning to his unit. By his gallant and selfless actions, Sergeant Roberts contributed directly to saving the lives of his comrades and served as an inspiration to his fellow soldiers in the defeat of the enemy force. Sergeant Roberts' extraordinary heroism and intrepidity in action at the risk of his life were in keeping with the highest traditions of the military service and reflect great credit upon himself, his unit and the United States Army.

ANGELO G. GEOCARIS RECEIVES ABRAHAM LINCOLN CENTRE'S HUMANITARIAN SERVICE AWARDS

HON. JOHN BRADEMAS

OF INDIANA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BRADEMAS. Mr. Speaker, on February 12, 1971, the Abraham Lincoln Centre in Chicago conferred its Humanitarian Service Award for 1971 on Angelo G. Geocaris.

Mr. Geocaris joins a distinguished list of recipients, including former Senator Paul H. Douglas, Senator CHARLES H. PERCY, Chicago Mayor Richard J. Daley, and former Illinois Governor Otto Kerner, who have been honored previously by the Abraham Lincoln Centre.

Mr. Speaker, it has been my pleasure to know Mr. Geocaris for many years. He has been an outstanding businessman and attorney in the metropolitan area of Chicago for nearly three decades, and throughout this period he has shared his time and resources to work for equal rights and opportunities for all Americans.

Indeed, the Humanitarian Service Award citation to Mr. Geocaris recognizes "his concern for and commitment to the welfare of all persons without regard to race, sex, creed, color, or economic condition." The citation goes on to state:

His contributions to better race relations have been demonstrated in his business practices and by his active participation on such boards of directors as the Abraham Lincoln Centre and the Chicago Urban League. He has given his time, effort and money to better and gladden the lives of minority groups and the underprivileged through his actions in support of agencies dedicated to such ends.

Mr. Speaker, I certainly concur with this statement and know of no one deserving of this honor.

Mr. Geocaris received the award at a Lincoln's birthday dinner in Chicago. I was very pleased to attend the dinner and to hear Mr. Geocaris' eloquent remarks regarding his commitment to equal opportunities for all citizens.

The distinguished chairman of the dinner honoring Mr. Geocaris was Newton N. Minow, lawyer and former Chairman of the Federal Communications Commission.

Among the other outstanding leaders attending the dinner were:

Robert A. Wallace, Vice-Chairman, Exchange National Bank of Chicago; Robert A. Uihlein, President and Chairman of the Board, Jos. Schlitz Brewing Co.; Hon. Paul Simon, Lt. Governor of the State of Illinois; Hon. George W. Dunne, President of Cook County Board; Edwin C. Berry, former Executive Director of the Urban League and Assistant to the President of Johnson Products; Hon. Ralph H. Metcalfe, United States Congressman; Hon. Cecil A. Partee, president Pro Tem of Illinois State Senate; Henry W. McGee, Postmaster of Chicago; Dr. Michael J. Bakalis, State Superintendent of Public Instruction; and Louis H. Martin, Executive Editor of Chicago Defender.

Mr. Speaker, I believe Mr. Geocaris' address offers many constructive thoughts and I include the text in the RECORD:

ADDRESS BY ANGELO G. GEOCARIS, THE ABRAHAM LINCOLN CENTRE HUMANITARIAN SERVICE AWARD DINNER, FEBRUARY 12, 1971, CHICAGO, ILLINOIS

I am concerned, deeply concerned, about the course of our lives in the years ahead and on toward the end of this century. The pressures for change are mounting. They are building to a point where one of two things must happen.

First, the legitimacy and moral worth of the demands causing the pressures will be recognized by those of us in control and fundamental reform will be made.

Second, the cry for change will grow and go unheeded. The fragmentation of our society will continue toward ultimate breakdown, and a government of law and order will emerge. Individual dignity and freedom will be remembered as an historical accident.

Or, as a variation of this, repressive measures will accelerate as demands for basic social change gather force and a police state will be upon us before most of us become aware of it.

DRIVE FOR EQUALITY

The course is clear. Led by blacks emerging from years of bondage and discrimination and given tremendous impetus by the best educated generation in the history of man, the press for a more equitable share of our national wealth and increased regard for the quality of life must be met by the established group with generosity and understanding.

We are the managers of the Chicago community. Do we have enough confidence in American democracy's capacity for change, or do we view our American life today as something set and sacred, to love it as it is or to leave it as it is.

The ideal we were taught and, in turn, taught our children—the ideal our black brothers and sisters learned is that America is a dynamic ever-changing system—that there is or at least should be, no such thing as vested interests or status quo—that all persons born into it have an equal chance at the starting line, and an opportunity to exercise the fullest degree of their capacities and talents.

The young look at America and say how much greater, how much more just it can be and should be. Some of us jaded, and perhaps, a bit tired of the struggle, say isn' this the best nation in the world today, or for that matter, the best in recorded history? The young evaluate against the ideal that we apply relative standards. But it is only through constant striving toward lofty ends that improvement can be realized.

SOME ARE TOO CONTENT

The goals man has always sought have not changed. Perhaps the frustrations many of us feel today in comprehending these goals—charity, freedom and knowledge—is because most of us have acquired such a substantial portion of material goods, we are afraid of charity because more for the deprived may mean less for us. We are afraid of freedom because the demands of those in need, or those of social conscience are heard too often and too loudly. We are afraid of knowledge because it shakes the shell into which we have withdrawn.

The goals and the truths are here. They have been on the bookshelves, in the Bible, in the Great Books, in the classrooms for centuries.

The first of these is *Charity*—a society where no person is permitted to fall below a certain level of subsistence, where food and shelter, medical care and legal aid are available.

The second of these is *Freedom*—where above this floor common to all, each person can rise to any levels of excellence a free, unfettered creativity may carry him. The guarantee of the first need not curtail the realization of the second.

The third of these is *Education*. We must develop, and ever maintain, a top quality system of education at all levels.

And today in America we must add a fourth—*Equal Opportunity*. Charity, freedom and education must be on an equal basis to all, without regard to race, ethnic origins, sex or the affluence of parents.

We here of the Chicago community must fervently and wholeheartedly recommit ourselves to the achievement of these goals.

WAY IS NOT EASY

Because the way ahead is unknown, anxious and greedy men will not want to risk it. One of our founding fathers has said, "Timid men prefer the calm of despotism to the turbulent seas of liberty."

We must cast aside outmoded customs and institutions; the seniority system in Congress; undemocratic means of selecting delegates to our National Conventions; archaic and unfair election requirements and procedures. In short, we must update and revise the rules of the political game so every individual and any group has an equal chance.

We must adopt a plan for funding welfare, and nationally, the guaranteed annual income—or in the alternative, government as the employer of last resort.

We must adopt new aproaches in law, in business, in education, in labor—an attitude of "compensatory justice." Too many begin life far behind the starting line, because of circumstances of birth. Government must review and revise procedures and systems at all levels—national, state, and local. Industry must apply all of its vaunted ingenuity in opening more opportunities in jobs and business, and new ideas in education must be developed and financed to meet the requirements of our bulging black, inner-city school population. Labor must look anew at its bylaws and practices justified in bygone years as reasonable to protect job security and review this to ascertain if they shield some by excluding others. There is no problem in identifying goals. There they are—four of them—Charity, Freedom, Education and Equality of Opportunity. The programs implementing these goals are available or can readily be developed by our Universities and Industry.

COMMITMENT NECESSARY

My dear friends of the Chicago Community, there is lacking but one element, just one step removed from one of the most inspiring and exciting breakthroughs in the history of man, and that is commitment—profound, overriding, unqualified, uncompromising, fervent commitment.

If we do pledge ourselves—young and old, black and white, business and labor, leaders of the public sector and leaders of the private sector, then nothing can defeat us—nothing can deter us—we shall be sustained.

If we so pledge ourselves, all else can be seen in proper prospective. The war in Indo-China becomes a costly mistake which we cannot afford to continue, either in terms of material resources or in terms of our moral integrity as a nation.

If we so pledge ourselves, the young will follow us. They will believe when we counsel countries, that we are not selling their and our ideals short, but are exercising judgment born of experience in leading and working in a democratic system. When we say we must have order to achieve progress, our black fellow citizens will see that there is heavy emphasis on progress because the program will be underway.

What are we doing today? Do we delay in order to mobilize thought and program and means, or do we delay out of fear and anxiety and lack of commitment? Are we gathering the army to do battle against bigotry and discrimination, ignorance and poverty, or are we fighting a delaying action in the hope the problems will fade away?

TIME FOR ACTION

The question is being called. America over the next 30 years will, through greed and fear and shortsightedness, develop into a police state or we shall live up to the promise set forth by Jefferson in our founding papers.

My commitment to these goals has been, I like to think, of some significance. In the days and years remaining to me, my devotion to them shall be of increasing intensity.

I want to be able to "go home again," to walk the streets of 69th and Wentworth, of 63rd and Halsted, where I was raised, where I sold newspapers and shined shoes. I want to be able to drive through the Cabrini & Green houses along Division Street and not worry lest some hate-ridden black youth has me in his rifle sight as a symbol of the white establishment who kept his great grandparents in bondage and his parents and grandparents down in the basement of our national life.

We can go home again. We can reach back to the Constitution and the Bible and once again be moved by the words, "equal opportunity" and "all men are brothers unto one another and equal in the eyes of God."

I accept this generous award of the Abraham Lincoln Centre in the hope and with the praper that God grant me the physical stamina and mental discipline, the moral courage and spiritual strength and perception to rededicate myself and be sustained in the struggle to attain these noble ends.

Thank you.

THEY ARE DOING SOMETHING IN GRANT COUNTY, IND.

HON. ELWOOD HILLIS

OF INDIANA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. HILLIS. Mr. Speaker, today, I want to spend a few moments to pay tribute to the Jaycees of Marion and Gas City, Ind.

They have started a unique program properly and simply called, Do Something.

This program is designed to provide volunteer manpower for the various agencies and organizations which are attempting to help Grant County, Ind.

There are many civic organizations with outstanding plans in Grant County, but who lack the manpower in carrying out these plans.

The Do Something program will furnish this manpower.

The Jaycees have obtained a downtown office in Marion and are at the present time conducting a manhunt for some 1,250 volunteers who will do something.

I want to personally congratulate the Jaycees for undertaking this ambitious and very worthwhile program.

And I would like to pay special tribute to Jim Pence, the chairman of Do Something and Max Garriott, the vice chairman.

HERBERT R. RAINWATER, COMMANDER IN CHIEF, VFW

HON. BOB WILSON

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BOB WILSON. Mr. Speaker, this morning the distinguished chairman of the Committee on Veterans' Affairs, the Honorable OLIN TEAGUE, very graciously gave me permission to introduce the commander in chief of the Veterans of Foreign Wars, my longtime friend and adviser, "Chief" Herbert R. Rainwater. He has done an outstanding job in working on behalf of veterans and their families. I want to tell you all about him:

HERBERT R. RAINWATER

Herbert Ray Rainwater, 5250 Mountain View Avenue, San Bernardino, California, where he served as Assistant City Administrator the past three years, was elected Commander-in-Chief of the Veterans of Foreign Wars of the United States at the organization's 71st Annual National Convention held August 14–21, 1970, in Miami Beach, Florida. He was elected Senior Vice Commander-in-Chief at the V.F.W.'s 70th Annual National Convention August 15–22, 1969, in Philadelphia, Pa., and Junior Vice Commander-in-Chief at the 69th Annual National Convention August 16–23, 1968, in Detroit, Michigan.

During the years he served as Junior and Senior Vice Commander-in-Chief, he made extended visits to Vietnam and the Far East.

Born April 15, 1919, in Morrilton, Arkansas, of Irish-German parents, Rainwater attended public schools in Arkansas and Oklahoma. After graduation from high school, he took special courses in business administration and management sponsored by the U.S. Office of Emergency Planning. During World War II he served with the U.S. Army Field Artillery in China and later in the Burma-India campaign as staff sergeant, aiding in construction of the famed Burma Road.

Returning home, he owned and operated a public relations and marketing firm from 1946 to 1958 in Southern California, Arizona and Nevada, specializing in sales, promotion, merchandising and advertising. From 1959 to 1960, he served as Regional Coordinator for the California Disaster Office and was appointed Special Consultant to the California State Legislature on finance, banking and insurance committees by Governor Brown.

Prior to moving to San Bernardino in 1967, Rainwater was Vice President of Sierra Cable Corporation and President of C.A.T.V. Television Cable Service.

The Commander-in-Chief first joined the ranks of the V.F.W. while serving with the Army overseas. He is currently a member of Ship No. 1774 in San Diego, California. He served on all levels of the V.F.W. As Department of California Commander in 1959–60 he was named an All-American Commander by the National Headquarters for his efforts in organizing 32 new Posts in his home state.

Rainwater has held many offices on the V.F.W. National level, including Inspector General and Chairman of the National Community Activities and National Voice of Democracy Committees.

He was nicknamed "Chief" by V.F.W. comrades because of Cherokee Indian blood in his ancestry. His wife, Erma, who also has Cherokee Indian blood in her ancestry, has served as State President of the V.F.W. Ladies Auxiliary in California and as National Council member from California and Oregon. They have two children, Mrs. Walter Schneider, San Diego, whose husband is a member of the Scripps Institute of Oceanography, and John Kevin 11, a student in San Bernardino. The Rainwaters have two grandchildren.

SANE NATIONAL PRIORITIES

HON. JACK BRINKLEY

OF GEORGIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BRINKLEY. Mr. Speaker, in an address to the Middle Georgia Chapter of the U.S. Air Force Association, at Warner Robins, Ga., on February 25, 1971, Mr. John B. Amos, president of American Family Life Assurance Co., delivered a well-reasoned, clear-eyed analysis of the role of the military as it relates to the well-being and safety of our country.

The message, framed in a two-fisted fashion, is properly hard hitting; it is timely with national insight and perspective; it is deserving, Mr. Speaker, of the thoughtful, alert consideration of the United States of America:

TALK BY JOHN B. AMOS TO THE U.S. AIR FORCE ASSOCIATION, WARNER ROBINS, GA., FEBRUARY 25, 1971

Tonight, I want to talk about the subject of "Sane National Priorities."

Within the framework of that title, I would like to point out that there are forces at work within, and outside, our Government that are destined to weaken our defense posture through budget restriction.

Since the founding of the Republic, the American fighting man has kept a rendezvous with destiny. In the past three decades that rendezvous has taken him from Europe and Africa through the island-hopping campaigns in the Pacific to defeat hostile forces threatening the survival of liberty and democracy. Once the hard-won victories were gained, he remained behind to guard freedom's frontier in foreign lands thousands of miles from home. He is still there on a front that has grown wider with the passing of years—a front that is at times uneasily quiet or, as today in Vietnam, erupts into actual warfare. Our fighting man, like his forefathers, is ready to fight to be free.

The overriding reason for the existence of our military forces is clearly to provide this Nation with the combat readiness that will guarantee our national security and give us the military strength to safeguard and to sustain our international commitments. The Defense Department is not primarily in the business of saving the Nation's money. The military is primarily in the business of saving the Nation's life: its security, and its ultimate survival. The cost comes high in a tense and turbulent world. No President since Hoover has really believed that the cost of maintaining our military establishments can be arbitrarily limited to any pre-planned percentage of the federal budget. The instructions to our Secretary of Defense should be to procure and support whatever forces are necessary to guarantee our security—but to do it at the lowest practical cost.

There are those who say that we cannot deal simultaneously with both our defense and domestic problems—that we cannot curb communist aggression abroad and move to cure city ills and domestic problems at home at the same time. This thinking is a defeatism unworthy of this great and powerful Nation. Our defense expenditures today are a lesser percentage of the GNP than they were a decade ago. Thus, our security requirements are clearly not preventing us from meeting our needs in our society. Our urban problems are admittedly tangled and thorny—and do require action. And, that is why Congress is working on creative and concrete proposals to meet those problems.

Our own American security is at stake. Today, the threat to world peace is militant, aggressive Communism with its headquarters in Peking and Moscow, and its tentacles extending around the world. The aggression of the Communist in Southeast Asia is but the most current and immediate Communist threat. Let us not forget the global threat that Communism poses to this Hemisphere.

Si Vis Pacem—cried the Ancient Romans—Para Belum. "If you want peace, prepare for war." It is a lesson that Ancient Rome itself came, in time, to neglect. And, Ancient Rome fell.

As I mentioned earlier, there are elements of our society that want to see our defense activities curtailed. The National Urban Coalition issued last Saturday an alternative federal budget in the hope it stirs public debate on rearranging national priorities. Although Coalition officials say they are not stressing any particular point, that they want to get the issues out for public discussion, I have read this document. This is their counterbudget for the years 1972–1976. There are 400 pages here. It boils down to this. A big cut in spending for national defense and military assistance and a big increase in funds for health, income support and education, and enforcement of civil rights and equal opportunity.

The Nixon budget is far from satisfactory to me and should not be to you. It allocates only 6.8% of our Gross National Product to Defense. It spells possible doom, but this counter budget spells certain doom to our security and our society. It spells eventual enslavement by the Reds.

Let us look at this allocation to national security over the past 20 years. In 1950 it had dropped to 4.5%, and as a result came the Korean War. It was as a result of that war raised to 12.3% in 1952 and 13.3% in 1953. Since 1955 it has hovered in the high 8 and 9 with few exceptions. A cut to 6.8% is indeed drastic and dangerous—but, if I must choose between possible death and certain death, I shall choose the former—but it's a damned poor choice. Who is responsible for this choice. You and I, Mr. Civilian, because the military has a vested interest that impeaches their creditability when urging budgets. In matters of money appropriations and attendant taxes to pay the bills—it is you and me that will be heard.

Now, let us look at evil number one—this counter budget—this certain death. What does it specifically propose to do with the dollars that are taken from National Defenses.

$90 million would be spent immediately on federal civil rights enforcement.

The budget of the Office of Equal Opportunities legal service would be doubled, doubling the number of projects it is involved in, doubling its staff . . . it now has 800 field offices and employs 2,200 lawyers.

Parole and probation for criminal offenders rather than imprisonment would be subsidized in a very peculiar fashion . . . by a federal grant of $2,500 to local probation systems for, quote, "each offender placed on probation who, because of the seriousness of the offense, could have been sent to a state prison . . . an incentive for states to rely more upon and improve probation systems . . . we estimate nearly 1.3 million offenders will be placed on probation in 1976" this proposal reads. They estimate the first subsidies as costing about $650 million. They include a $500 no questions asked grant for *any* offender granted probation in this, to make the program apparently apply to illegal duck hunters or speeders on a military reservation.

Now, let me state that I am 100% in sympathy with the goals of the minorities, the poor, and the ill and my entire personal history proves it . . . but, I do not believe there would be anything accomplished for anyone if civil rights and equal employment were accomplished at the cost of taking all Americans back to the human enslavement that existed in America before President Lincoln signed the Emancipation Proclamation. You've heard the expression of the Communists—two steps forward and one step back—well, gentlemen, this is one step forward and one hundred years back—back to slavery.

In my lifetime I have heard the terms Communist, pink and fellow traveler used. I think such terms are outmoded when used to refer to Americans. The authors, financiers and supporters of this counterbudget I would term red-blooded patriotic Americans, but useful fools who can see the forest but not the trees. Useful, yes, in that their stupidity is useful to Hanoi, Peking and Moscow because they deny the danger and destroy our will and ability to resist.

But, gentlemen—let us not take this counterbudget lightly. It could well be the platform of the Democratic Party in 1972. It is today the platform of the liberal establistment—the useful fools—who are the forerunners of official Democratic Party Policy. I am a Democrat. I shall fight within the structure of that party, but I shall also fight outside that structure, if necessary, to preserve my freedom and that of my children and my children's children.

Call this *counterbudget* what you will—but to me it is the replay of a tired and worn record—isolationism. A doctrine that has repeatedly been found wanting and unrealistic in this Country. It is a head in the sand doctrine. I see no evil, I feel no evil, I fear no evil—I need not spend the money to defend against evil.

All Americans cannot help but wonder what might have happened if there had been no Paul Revere, or the frontiersmen of Maryland and Virginia, or the Army of the Potomac under General Washington. What might the alternatives have been? One also wonders what would have happened if Hitler had been allowed to march unchecked across the face of Europe in the early 1940's and then spring with his ally, Mussolini, to the south across Africa and South America—if he had been allowed to go with his Japanese ally across the Pacific, the Far East and the Middle East. He almost was, you know.

By only a single vote in the House of Representatives on August 13, 1941, selective service and the 800,000 new men it had given the Army were retained. What a blessing that was. On December 7, 1941, the Japanese struck Pearl Harbor. Four days later, Germany and Italy declared war on us.

Do we learn nothing from history—how many times in our own lifetimes has this doctrine backed our Nation into a war for which we were not prepared. In those cases we won because time was on our side. Time to mobilize our tremendous spiritual, human and economic resources. I ask you to think clearly and ask yourself—in this day of atomic and hydrogen missiles—will time be on our side? The isolationists of the past said, we've got it made and we don't need nobody and nobody can reach our shores—these modern day isolationists to the contrary say, we're so sick, we're so poor, we're polluted, our society is so run down that we can't afford to defend ourselves against an aggressor who won't even exist if we close our eyes.

The castration of the military in this

counterbudget is primarily in the area of research and development and procurement of new hardware. There is a time lag of several years between research and development and usable hardware.

Rather than military scientists they propose that the money go to social scientists. They would add about 25% to the present research programs which we are funding, for what social results you can judge for yourself, which would add to the great army of social scientists already probing the mysteries of the urban community, family planning, public housing, public health programs, etc.

And to guarantee their program of research and development, they add 100 million dollars to the Nixon budget of 1972 for administration of the whole thing.

Our internal problems are great, but no greater than those faced by previous generations of Americans—the War of Independence from England, the Indian Wars, the conquest of the frontier, the Civil War, the great Depression—but, first and foremost, we must be sure that we survive as a free Nation of free men before we can hope to solve them.

SWEDEN: DEMISE OF THE WELFARE STATE

HON. DURWARD G. HALL

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. HALL. Mr. Speaker, going almost undetected in the American press is the labor and social unrest in Sweden. For many years the group that composes the "left of center" of American politics would have us believe that the Swedish experiment with the welfare state was the "wave of the future." This "wave" is certainly being dashed upon the rocks of economic realities, and the Swedish people are now finding out that there is no such thing as a "free lunch."

The highly respected weekly, Barron's, graphically describes the plight of the Swedish welfare state in an article that appeared in their March 1, 1971, issue. The article, entitled "Caught in the Middle," follows:

CAUGHT IN THE MIDDLE: THE WELFARE STATE IN SWEDEN IS WAGING CLASS WAR

STOCKHOLM, February 23.—The Swedish Government, facing the most severe labor conflict in the postwar years, announced tonight that 3,000 army officers would be locked out of their bases next week in a move to bring pressure on striking Government employees. The lockout, to start March 4, would bring the number of striking and locked-out Swedes—including teachers, railwaymen and civil servants—to 50,000. It was believed that this would be the first time that a government has locked out members of its own armed forces in a labor conflict.

Defense Minister Sven O. M. Andersson said that all key officers manning radar stations and holding key mobilization positions in the army, air force and navy would be exempt from the lockout to insure the nation's security. "In a crisis situation we would, of course, call off the lockout immediately," Mr. Andersson said.

Apart from occasional lapses like granting Nazi forces transit to Norway, harboring GI deserters and furnishing economic aid and comfort to Castro's Cuba and the Vietcong, Sweden has cherished its neutrality for a century and a half. While the rest of the free world might look askance at the foregoing tactics, such a peaceful sanctuary perhaps won't even miss three thousand army officers. One way or another, however, the Swedes of late indeed have been deprived. According to the Swedish Information Service, virtually all railroad traffic has come to a halt since February 5. Customs officials have abandoned their posts, thereby sharply curtailing air freight shipments from abroad. Owing to a lockout of teachers, classes have been suspended for 700,000 students in high schools and universities. Since 2,500 members of the Swedish Confederation of Professional Associations (SACO) went on strike a month ago; walkouts and lockouts have spread far and wide, encompassing meteorologists, librarians, social workers, pilots, physicians, dentists and planning engineers. Nor is an early end to the unprecendented turmoil in sight.

In the land of the enlightened middle way, where in theory nobody has too little or too much and everyone lives at peace with his neighbor, this might be called a striking turn of events. Though sadly neglected in the American press (which could not ignore the headline making military lockout), the month-old dispute—and the Swedish government's uncompromising response—suggest that in perhaps the most overtouted workers' paradise of all, something has gone wrong. So it has. As more than one collective has learned to its cost, "equality and solidarity," watchwords of the newly elected regime of radical Socialist Olof Palme, come high. In Sweden they have led to a step-up in the rate of inflation, to a barely tolerable 6%-7% per year, as well as to heavier levies on people already burdened by a back-breaking tax load. Again, in an ominous break with tradition (not to mention the homely wisdom in the fable of the goose that laid the golden eggs), Stockholm has plunged into direct ownership and control of companies and industries. Doctrinaire passions, finally, have spawned egalitarian extremes in wage negotiations and income policy, which, in turn, have triggered the bitter reaction of underpaid professionals and public servants. In the mixed economy, by a kind of Gresham's Law, the bad inevitably drives out the good. In the 20th Century, as in the 19th, no nation can exist half-slave and half-free.

Measured in terms of what people keep of their earnings after taxes, that roughly describes the state of Sweden today. One invariably reads about the Utopian aspects of Scandinavian life: low unemployment, free university education, paid vacations for weary mothers. The cost is rarely mentioned. Yet it is very high and perennially on the rise. Swedish taxation last year exceeded 41% of the gross national product (compared to 27.7% in the U.S. and 21.8% in Switzerland). Shortly after the September elections (the Social Democrats, while losing their majority, stayed in power by making common cause with the Communists), new taxes were imposed. For 1971, a steeply graduated national and municipal income tax exacts a punitive 87% at the $29,000 salary bracket, while a new net wealth tax has been piled atop it. Furthermore, the value-added tax on home appliances, passenger cars and boats went up from 11%-14% to 15%, the levy on private consumption of electric power from 7% to 10%. To worsen the pinch, prices in 1970 advanced nearly 7%, according to official statistics, which, in Sweden as elsewhere, doubtless understate the case.

On balance, the system for a long time somehow seemed to work. Over the years, with a big assist from neutrality in two world wars, Swedes acquired a standard of living ranked (despite a miserable housing shortage) fairly close to that of the U.S.; one way or another, the Social Democrats have remained in office for a generation. Perhaps emboldened by success—or, more likely, pushed by the political imperative of their credo—the Socialists lately have taken a harder line. While professing neutrality, Stockholm has furnished economic aid to both Cuba and North Vietnam; anti-Americanism, contrariwise, has been rampant. On the domestic scene, the powers-that-be, breaking with wise and time-honored practice, have refused to settle for merely sharing (lion's share, to be sure) in the fruits of industry and labor; instead, despite a virtually unbroken record of failure, bureaucracy has opted for aggrandizement of the public sector.

On this score, a Swedish correspondent recently wrote us: "A state-owned nuclear power plant, built at a cost of, I think, around $100 million, turns out not to be usable at all, no doubt the largest white elephant in Swedish history. The government claims, with some accuracy, that technology had not developed sufficiently by the time the project was started; other authorities say the government had clear warning of the risks, but chose to ignore them. In any case, the failure does not do anything to help an already poor record. Events in recent months add to the debit side. At one point, it was discovered, (much to everyone's consternation) that one part of the sprawling state-owned-industrial sector was planning to built a plant for production of disposable hospital supplies, while another part had signed a joint-venture agreement with American Hospital Supply for that very purpose. More serious has been the failure of Kalmar Verkstads AB, a company taken over by the state some years ago with the intention of re-directing it into more promising lines in order to maintain employment in that area. One of the new products developed was an automatic parking apparatus, a kind of Ferris Wheel device that would allow several cars to be parked in one parking place. Not one of the gadgets was sold, despite considerable fanfare, and that product was abandoned.

"More solid was the development of an ultra-mini car, the 'Tjorven,' intended for use as a delivery vehicle in cities. Some of these have been sold (mainly thanks to the state's aggressive sales efforts to itself in the form of the post office), but not enough—last week it was announced that 200 employees were being laid off because of insufficient Tjorven orders. Perhaps the most embarrassing failure has been the collapse of a company which was mainly intended to promote efficiency in state enterprises and elsewhere—Rationell Planerings AB, a kind of consultant operation. Results have been so bad that the company is now being liquidated. . . ." The name of the ill-fated company, by the way, means "rational planning."

Where ideology is concerned, evidently, failure doesn't count. "Equality and solidarity" lately have thrust their way into the realm of collective bargaining. In progress for some time in heavy industry, where an effort to narrow wage differentials paid skilled labor precipitated a long and bitter dispute in a state-owned iron ore mine, the movement lately has spread from mine and mill to office. Variously dubbed the College Graduate Walkout and the Luxury Strike, the mass shutdown now afoot plainly reflects the widespread, and mounting, discontent of Swedish professionals and civil servants. Owing to lagging wages and rising prices, both groups in the past two years have forfeited an estimated 7% of their purchasing power. To make up the ground already lost (and that threatened by persistent inflation) their unions are seeking a 22% raise. The government, through its agent, the Collective Bargaining Office, has offered 7%, and, in a kind of Boulwarism with a gun, refuses to budge. Last Friday an aide to Premier Palme (whom The New York Times described as "seated beside a table on which rested Charles A. Reich's book, 'The Greening of America' ") observed: "We are not an egalitarian society but the aim is to create one." Gunnar Myrdal, who has done as much as any man to further the cause, was quoted as saying: "The organized welfare state has gone mad . . . It's become a class struggle."

As the Swedes, Belgians (whose middle classes recently staged a one-day demonstration of their economic clout) and even a few Americans have begun to suspect—and as Gunnar Myrdal ought to know—it was never anything else. Stripped of philosophic camouflage and political pretense, the welfare state is a modern version of one of the oldest con games on earth, robbing Peter to pay Paul. Perhaps in Sweden, at long last, the game is up.

CBS ATTACKS MILITARY

HON. F. EDWARD HÉBERT

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. HÉBERT. Mr. Speaker, Lt. Gen. Ira C. Eaker, U.S. Air Force, retired, writes a weekly syndicated column for various publications. He is respected in military and journalistic circles.

General Eaker has written a column about the CBS program, "The Selling of the Pentagon," which I want to insert at this point in the RECORD.

It is most interesting to note what a distinguished retired military officer, who is now a member of the press corps, has to say about the program.

The article follows:

COLUMBIA BROADCASTING SYSTEM ATTACKS THE MILITARY

(By Ira C. Eaker)

Any observant citizen must be aware that there has for some time been a concerted attempt to destroy the morale of our armed services and disarm the country.

A recent example of this campaign, which has now become a left-wing crusade, was the Columbia Broadcasting System's one hour television program called "Selling the Pentagon."

It began with a disarmingly admirable preamble, "Nothing is more essential to a democracy than the free flow of information. Misinformation, distortion and propaganda all interrupt that flow." It then proceeds, in its so-called "Report," to violate every single tenet of this creed.

Included in this program were untruths, half-truths, distortions, innuendos, misleading statistics and comments and falsely constructed interviews. Highly selected editing gives only one side of most arguments. Selection of biased spokesmen and distorted camera angles and compositions are commonplace.

The entire program is a not too subtle form of biased "reporting" that cannot be viewed as anything other than propaganda. In fact, the entire tone of the program is consistent with long standing antiwar, antimilitary attacks on Pentagon public affairs programs.

It was dedicated to the charge that the military services spend $30 million or more of appropriated funds to sell the taxpayers a favorable image of the military.

The facts are that the military services spend less on public relations, as a percentage of their over-all budgets, than many other departments of government. They also spend much less on creating a favorable public image than all big corporations spend on advertising their product or public service.

Most corporations spend at least 10% of their annual budget on advertising. Some go much higher. The $30 million the Columbia Broadcasting System charges the Pentagon on spending for creating a favorable image is much less than 1% of its $75 billion annual budget.

The Pentagon and its subordinate services rightly believe that they must, especially in these times, convince our citizens and the Congress of the importance of their mission and their requirements in men and munitions if they are to accomplish their assigned tasks.

For example, unless the military career can be represented to our people as a desirable career for able young men and women, there is not the slightest chance that the Administration's plan to substitute a volunteer army for the inequitable and indefensible conscript system can succeed.

If the Army, Navy and Air Force spent less on public relations, that section of the news media which now condemns such expenditures would be the first to charge that this silence was a deliberate cover-up.

It is noteworthy that those members of Congress now most critical of the military are the most demanding for complete denouement and full explanations about every prospective operation and military plan well in advance of its execution.

The Pentagon spends much less in a whole year for promoting the popular image of its people, weapons and mission than the tobacco companies spend on cigarette advertising in a single week.

Whatever the Pentagon is spending to create a favorable image is not enough, since it is not getting the 300,000 volunteers needed annually and our defenses are steadily declining in modernization, effectiveness and credibility.

For good or ill, image building is the name of the game today. Politicians who create popular images get elected. Corporations which create favorable images for their products survive and prosper.

My hope is that CBS with this distorted, inaccurate and venomous attack on the military may have overshot its mark and have exactly the opposite effect to that intended—to destroy the confidence of our people in their defense forces.

DR. CHAPMAN H. BINFORD PRESENTED 1971 DAMIEN-DUTTON AWARD

HON. EDWARD J. PATTEN

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. PATTEN. Mr. Speaker, on February 16 I had the honor of presenting the 1971 Damien-Dutton Award to Dr. Chapman H. Binford, medical director of Leonard Wood Memorial Hospital here in Washington, D.C. This award is made for outstanding contributions in the area of leprosy research.

During the ceremonies, which took place in the Rotunda of the Capitol beside a statute of Father Damien, Dr. Binford made a very startling statement about leprosy. He said:

According to the World Health Organization there are approximately 11 million people in the world today with leprosy and there is no evidence that the disease is being checked.

Mr. Speaker, this disease affects so many people and yet we know so little about it. It was a dreaded disease back in the early history of our civilization, and it is still a dreaded disease today.

One of the finest organizations that we have today actively fighting to control and cure leprosy is the Damien-Dutton Society. The society has its national headquarters in New Brunswick, N.J., which is in my congressional district. I have the honor of serving on the board of directors where I have a wonderful opportunity to work with Mr. Howard E. Crouch, founder and present director of the society.

Much remains to be done in the fight against leprosy, but with organizations such as the Damien-Dutton Society and dedicated people like Dr. Binford and Howard Crouch we can still have hope that a cure may be found.

In closing, I would like to insert in the RECORD the full remarks of Dr. Binford at the presentation ceremony. May I urge my colleagues to hear his plea for help which is echoed by millions the world over:

FEBRUARY 16, 1971.

MR. CROUCH, CONGRESSMAN PATTEN, AND FRIENDS: I am greatly honored to be the recipient today of the Damien-Dutton Award. It is with great humility that I stand here by this memorial statue to Father Damien. Those of us who knew leprosy before the report on the sulfone drugs by Dr. Guy H. Faget and his staff at the U.S. Public Health Service Hospital, Carville, La., in 1943, can appreciate the horrible conditions of patients living in the leprosy settlement on Molokai in 1873. At that time Father Damien, a vigorous young Belgian priest, age 33, went there.

For the first 11 years there was no doctor regularly assigned to the settlement. Father Damien therefore had to minister to the physical as well as the spiritual needs of the patients. You know how well he carried out these duties. At that time the majority of the Hawaiian patients had the malignant form of the disease which we today call lepromatous leprosy. Without any medical treatment that could check leprosy, patients in the terminal stages of the disease suffered severely. Lepromatous nodules covered their skin, many were blind, masses of infected tissues prevented breathing through the nose. Many died of laryngeal obstruction. Their bodies were covered with ulcerated nodules. There were the patients with whom Father Damien worked day and night, seven days a week. And you know he later succumbed to this severe form of the disease.

It was three years before Father Damien's death that Brother Joseph Dutton, as a volunteer layman, went to work with him in caring for the people at the leprosy settlement on Molokai. For 45 years he worked efficiently and effectively carrying out in his quiet way the ministration to their physical and spiritual needs. Leprosy during Brother Dutton's years of service was still the dreadful disease that it was at the time of Father Damien.

Today in 1971, almost 100 years after Father Damien went to Molokai, we know very little more about leprosy than was known then. We do not know how to cultivate the bacillus, therefore vaccines cannot be produced. We do not know why around 5% of people like Father Damien, who are intimately exposed come down with the disease, while others, about 95%, like Brother Dutton, that are equally exposed, do not become infected. We have no way other than complete physical examination of each patient to detect the disease at an early stage. The sulfone drugs, while very useful in preventing lepromatous leprosy from advancing, must be taken for years before the disease can be considered arrested.

Sustained intensive research must be continued before the basic problems of leprosy are solved.

According to the World Health Organization there are approximately 11 million people in the world today with leprosy and there is no evidence that the disease is being checked. There is need for continuing work by organizations such as the Damien-Dutton Society to bring relief, light and help to those who are afflicted with leprosy.

I thank you.

A RESOLUTION CONCERNING THE MANNER AND TIMING OF THE WITHDRAWAL OF OUR ARMED FORCES FROM VIETNAM

HON. DAWSON MATHIS

OF GEORGIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. MATHIS of Georgia. Mr. Speaker, the Georgia House of Representatives recently adopted a resolution concerning the manner and timing of the withdrawal of our Armed Forces from Vietnam.

As a U.S. Representative from the State of Georgia, I feel it is my responsibility to bring this action to the attention of the American people.

Recognizing the fact that the war in Vietnam has affected every county, city, and citizen of Georgia, to some degree, the resolution recommends that the President of the United States:

Attempt to obtain, through negotiations, a cease-fire and exchange of prisoners of war and, if necessary, set a date certain for the withdrawal of American ground troops from Vietnam in order to bring this about.

I would like to share this resolution with my colleagues and others who read the CONGRESSIONAL RECORD. The complete text of the resolution follows:

A RESOLUTION

Expressing the opinion of the Georgia House of Representatives on the manner and timing of the withdrawal of the armed forces of the United States from Vietnam; and for other purposes.

Whereas, the war in Vietnam has affected every county, city, and citizen of Georgia, to some degree; and

Whereas, Georgia has had almost 1,500 of her citizens killed and many thousands wounded, and at least 67 families in Georgia have loved ones who are prisoners or missing as a result of the war in Vietnam; and

Whereas, the United States is beginning the second decade of the longest war in its history; and

Whereas, the war in Vietnam has been exceeded only by the two world wars and the Civil War in terms of human sacrifice; and

Whereas, it is the publicly announced policy of the United States not to seek a military victory in Vietnam, to cease the bombing, and to withdraw its armed forces, apparently without any reciprocal concession on the part of North Vietnam; and

Whereas, Georgians are still being killed, wounded and captured, and there appears to be no progress being made in the peace negotiations now taking place in Paris; and

Whereas, the Georgia House of Representatives feels that it has the right, if not the duty, to express an opinion on such a vital matter affecting the people of this State.

Now, therefore, be it resolved by the House of Representatives that this body hereby recommends that the President of the United States attempt to obtain, through negotiations, a cease-fire and exchange of prisoners of war and, if necessary, set a date certain for the withdrawal of American ground troops from Vietnam in order to bring this about; and

Whereas, the Georgia House of Representatives recognizes that the President might have already attempted this, but, because of classified information available only to him, might have decided that such action is inadvisable or impossible to accomplish.

Now, therefore, be it further resolved that if such a situation does exist, this body hereby requests that the President explain, insofar as it does not affect national security, why this cannot be accomplished.

Be it further resolved that this Resolution is in no way to be taken to support the government of North Vietnam or to reflect on military actions by members of the armed forces of the United States who are now serving, or who have served, in Vietnam.

Be it further resolved that the Clerk of the House of Representatives is hereby authorized and directed to transmit appropriate copies of this Resolution to the President of the United States and to each member of the United States Senate and House of Representatives from the State of Georgia.

BUS TRIP A TRUE LEARNING EXPERIENCE

HON. G. WILLIAM WHITEHURST

OF VIRGINIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. WHITEHURST. Mr. Speaker, at a time when so much thought is being given to the vital need for more and better day care centers, I was delighted to learn that in Norfolk, Va., there is a gentleman to whom driving a bus means more than just transporting warm bodies from one place to another.

Mr. Richard Hassell uses his bus as an extension of the concentrated employment program day-care center. He tries to make the trip a true learning experience for the children, but more than that, he fills it with love.

Mr. Speaker, I commend to the attention of my colleagues this article by Mrs. Martha Gagliardi which appeared in the March 5, 1971, Virginian-Pilot:

CALL THIS BUS A HAPPENING

(By Martha Gagliardi)

NORFOLK.—When Richard Hassell stops his yellow school bus and beeps his horn, preschoolers come running.

Those who can't run are carried by their mothers to Hassell's bus which is literally a "show and tell" on wheels.

Hassell drives children whose mothers are training in the Concentrated Employment Program to day care homes and centers. About a month ago, he decided the bus needed brightening up.

So one Sunday morning, he decorated the bus with pictures cut from magazines, children's games, and health and safety posters.

Hassel, who has been driving the bus for five months, said, "I put up anything I thought was good for the children. I really love little children."

Hassell, the father of two married daughters and the grandfather of two little girls, indicated that children and religion are the most important things in his life.

"I decorated the bus on Sunday before going to church. I always clean and maintain the bus every Sunday," Hassell said. "The decorating was something I took up on my own because I love children. When you love the Lord, you want to do nice things for children because God loves them so."

Hassell printed name cards for each child and put them over the seats.

He hung a toy on the rail behind the driver's seat, beside a car seat used by this youngest passenger, who is six months old. Three other car seats are hung nearby.

Hassell has 22 daily passengers, ranging from six months to five years.

The youngest children go to day care homes, while the older ones attend a CEP day care center in Christ and St. Luke's Church.

Hassell tries to make the daily ride to the day care centers a learning experience for the children.

His 89-mile round-trip route covers the city from Berkley to Lambert's Point. During the ride, he plays music for the children on a tape deck by his seat. Favorites include the Jackson Five, and inspirational songs.

He also leads the children in songs they've learned at school.

Every morning Hassell stops the bus for 15 minutes to read stories or talk about nutrition and safety. He has a large color chart showing the four food groups and what constitutes a well-balanced diet at the front of the bus.

Hassell said he has never had any problems with the children. "Even the little ones never cry," he said.

Hassell is always looking for new things to delight his passengers. "I put balloons up on the ceiling this week, and often roam through the five and ten cent stores looking for surprises."

Mrs. Edith R. Hammond, CEP day care supervisor, said the reaction to Hassell's bus from both children and parents has been one of delight. "We are primarily concerned with the welfare of the children in the program, and Richard takes a real human interest in them. He makes riding the school bus a happening," she said.

VOICE OF DEMOCRACY STATEMENT BY THOMAS L. LEDGERWOOD

HON. MIKE McCORMACK

OF WASHINGTON

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. McCORMACK. Mr. Speaker, tonight at the annual conference of the Veterans of Foreign Wars being held here in Washington, D.C., the national winner in the competition for the Voice of Democracy contest will be announced. Candidates from most States will be participating. These young people are outstanding citizens of whom all in this Congress and in this country can be justifiably proud.

It is my great honor this year to have as the winner from the State of Washington a young man from Clarkston, Wash., in my congressional district. His name is Thomas L. Ledgerwood. Mr. Ledgerwood is a student at Charles Francis Adams High School in Clarkston, Wash. Mr. Ledgerwood is an outstanding young man in every way. He is a member of his student government, active in debate and oratory, a cross-country and track man, a ham radio operator, a member of the yearbook staff, and a philatelist.

Mr. Ledgerwood's father, W. Troy

Ledgerwood, is a lift truck operator; his mother, Mrs. Ann M. Ledgerwood, is a student nurse. Mr. Ledgerwood is the winner of a number of contests in oratory and script writing. Last year he was a member of the American Legion Boys' State.

Sometimes the pride that a Congressman expresses in the accomplishments of his young constituents is a matter of form; but, Mr. Speaker and my fellow Members of Congress, I can tell you without reservation that Tom Ledgerwood has sincerely impressed me as an outstanding citizen whose understanding of our democratic heritage can be an inspiration to us all.

So my pride, Mr. Speaker, lies not only in the fact that I am a member of the Veterans of Foreign Wars, and not only that the Veterans of Foreign Wars sponsors such an outstanding program as the Voice of Democracy contest, but that Tom Ledgerwood's speech is one in which all other Americans can certainly take pride. It is with great pride that I insert Tom Ledgerwood's Voice of Democracy speech into the CONGRESSIONAL RECORD:

FREEDOM—OUR HERITAGE

The longest journey a man will ever take is the one he takes looking for freedom.

You could set out looking for freedom.

You could cross and recross this giant nation without ever finding it.

Because it wouldn't be there sewn into the stars and stripes waving up there in the breeze.

You couldn't find freedom chipped into Mount Rushmore.

You couldn't find freedom riveted into the Statue of Liberty.

Nor could you find freedom molded in the Liberty Bell.

No,—if you really wanted to find freedom all you'd have to do is to stop that wandering around and take a good look at yourself.

Because that's where freedom is.

It's in *you*—and in the minds and hearts of human beings everywhere, where it can't be ripped, cracked, torn, rusted or melted away.

Freedom is an *idea*, a belief, a way of life—something you can't touch or grasp or hold onto. And for some people, freedom will remain only in the mind.

But our forefathers had a dream.

Their dream was to take freedom out of the mind and incorporate it into a government. And one and three-quarter centuries ago, a lot of people gave everything they had, including their lives, to establish that way of life.

They never dreamed that the nation, they were trying to create would prosper and grow into a giant, space-age nuclear power.

They didn't know whether it would last for ten years or ten thousand years.

They didn't know you, and they didn't know me, and they didn't know what we'd do with this thing they were trying to create.

All they knew was that here was something they believed in, something that meant so much to them that they were willing to offer and even give their lives for it.

But the most important thing was that when our forefathers took freedom out of the mind and established it into a government, a way of life, they found that *freedom ceased to be free*. That in order to live freedom, you had to pay a price, and that freedom is the most priceless thing on earth . . . so priceless, in fact, that we'll always be paying for it.

We'll never hold a deed to freedom, say that it's ours, that we own it.

We'll never be guaranteed it from one moment to the next.

We'll just keep paying.

And yet, men feel a supreme satisfaction when they pay a tremendous price for freedom. For the defense of freedom is the ultimate sacrifice. The laying down of one's life for one's country is the most priceless privilege that we could ever have.

In Arlington National Cemetery, near Washington, D.C., there is a beautiful tomb. The inscription on it reads, "HERE RESTS, IN HONORED GLORY, AN AMERICAN SOLDIER KNOWN BUT TO GOD." It's there as a testimonial to him and to 385,000 other Americans who died in the defense of freedom—many of them on foreign soil—so that we, their descendants, can feel the liberty breathing in us that they felt in themselves.

And so, as I live a free and prosperous life in this great nation, and live my day-to-day existence in freedom, I can't help but wonder if my country will some day call upon me to make that supreme sacrifice.

God willing, I'll be able to realize that what Charles Dickens said in his book, "Tale of Two Cities", is true, when he talks about men giving up their lives, making the supreme sacrifice for something they believe in. He says:

"It is a far, far better thing that I do, than I have ever done; it is a far, far better rest that I go to, than I have ever known."

DRAFT REFORM

HON. ABNER J. MIKVA

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. MIKVA. Mr. Speaker, great amounts of energy have been expended over the past few years by citizens and elected officials around the country in a continuing effort to bring the Vietnam war and the Army under control. Everyone now agrees that we must terminate this incredible executive adventure, and must see that never again can a President, along with a handful of advisers and military brass, commit half a million American troops to an undeclared land war.

To that end, various proposals have been put forward, including a number of proposals to reform the entire structure of military procurement. There is an intimate relationship between the number of men in the Army and the extent to which the military feels free to overextend themselves around the world. Obviously, there is an equally direct relationship between the manner in which the Army recruits troops and the number of men in the military. There is little doubt in my mind that extensive American involvement in the Vietnam war could not have occurred had there not been a system of compulsory conscription by which sufficient numbers of young men could be drafted to carry out that adventure. Some therefore look upon the draft as the culprit and call for complete abolition. This is to misplace the blame. It was the availability of an unrestricted peacetime conscription system, which could be utilized to fight an undeclared war, that caused the tragedy. For that reason, I am introducing today a bill to prohibit the military from sending draftees into combat zones, except when Congress has declared war.

One alternative to the present draft system which has been suggested by some of my colleagues is a system of compulsory national service. Upon reaching a certain age, each individual would be required to spend a certain number of years serving his or her country, either in the military or in some nonmilitary volunteer capacity such as the alternative service work presently done by conscientious objectors. I firmly believe that every citizen ought to serve his country to the extent he is able and in the manner which he finds appropriate. But I firmly oppose the idea that the Government should require every individual to perform "national service" as the Government defines and approves it. The entire concept of conscription, whether for military or nonmilitary purposes, is antithetical to the fundamental principles of a free society.

Another suggestion has been the abolition of the military draft, and its replacement with a volunteer army. Quite frankly, the thought of a standing army of 3 million professional volunteers scares the hell out of me. Once freed from its reliance on millions of unwilling conscripts, who knows what the limits would be of the endeavors the army would undertake at home and abroad. The only volunteer standing army I could support would be one which is drastically smaller in size than our present force levels—so much smaller that it could not, as a practical matter, entertain any notions of large scale military intervention either at home or abroad. Conventional actions, which are still the principal means of international violence today in spite of nuclear capabilities, would be out of the question unless Congress declared war, at which point the President would be empowered to invoke involuntary conscription. In summary, a volunteer army would be acceptable only if it were accompanied by first, a drastic reduction in authorized manpower levels, and second, contingent draft powers in the event of a declaration for war. Without the former, it would threaten our free society; without the latter it would be unworkable.

In the meantime, while the national debate continues as to the type of military structure we wish for the future, my proposal would prohibit the military from sending any draftees into a combat zone unless Congress has declared war. The intention of this interim measure is twofold: first, it provides some measure of protection to those men caught up in the present system which everyone agrees is unfair; second, it forces the army to reduce its self-proclaimed warmaking adventures to a level which can be supported by volunteers.

One way or another, Mr. Speaker, the people of America will wind down the war-happy proclivities of the executive branch, and the concept of compulsory conscription on which it has relied.

MIKE ROYKO

HON. WILLIAM L. HUNGATE

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. HUNGATE. Mr. Speaker, one of my constituents sent me the following article which he seemed to think had some relationship to Vietnam. I insert it in support of the proposition that we need to increase our expenditures for mental health:

MIKE ROYKO: HERE'S HIS PLAN TO GET IN . . . OUT

I was visiting a sanitarium the other day when a man strolled up to me, moved both his hands in a chopping motion and said:

"I would like to make one thing perfectly clear."

Startled, I said: "What?"

"I would like to make one thing perfectly clear," he repeated.

A doctor whispered: "Just humor him. You know who he thinks he is, don't you?"

"But I thought they always think they are Napoleon," I said.

"Times change," the doctor said. "You can chat with him. He's harmless."

So I did.

What do you want to make perfectly clear? I asked.

"Let me make this point perfectly clear," he said. "I am trying to get out of here. I have a plan." He patted his robe.

Don't you belong here?

"Of course I belong here," he snapped. "I wouldn't be here if I didn't belong here. I belong anywhere I am."

Then why do you want to get out?

"Because if I don't get out, I'll never get back in."

Have you asked them to let you leave?

"Oh, they want me to leave."

But I thought you said they were keeping you here?

"They are."

How?

"They keep me here by trying to make me leave."

I don't understand.

"Then let me make it perfectly clear: Every time I decide to get out of here, they try to make me get out of here. That is why I stay."

Oh, I see. You really want to stay here.

"Of course not. I want to get out of here, and I will get out of here, I promise you that."

But if you want to get out of here and they want you to get out of here, why don't you go?

"The answer to that is perfectly clear: I will stay here until they stop trying to get me out of here."

Then you must like it here.

"No. I don't like it here."

Then why did you come here?

"I came here because I belong here."

I see. But you don't belong here any more?

"Let me make that clear: I belong anywhere I am, and anywhere I am is where I belong."

Then you do belong here.

"Yes, but I do not want to stay here."

Oh, you want to go somewhere else?

"I have already gone somewhere else. I went there to get out of here."

Then why did you come back?

"I never left."

How can that be?

"Let me make that perfectly clear. The only way for me to get out of here is to go somewhere else. So I went."

Then you were gone from here?

"No, I was still here, because I can't leave here until they stop trying to make me leave. I thought I made that perfectly clear."

I'm sorry, I forgot. So you went somewhere else while you were still here and then you came back here from somewhere else.

While you are here?

"Of course. I went there to get out of here, and I'm still there."

How do you like it there?

"I've got to get out of there."

How do you like it there?

"The same way I got out of here. By going somewhere else."

Where will you go?

"Maybe I will come here."

But you are already here.

"Yes, but I'm going to get out of here. You see, I have a plan. Let me make that perfectly clear."

On the way out, I asked the doctor how long the poor fellow has been a patient.

"Patient?" the doctor said. "Why, he's the superintendent."

ONE EARTH

HON. THOMAS M. REES

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. REES. Mr. Speaker, hardly a day passes without another grim fact appearing about environmental damage. The tragedy of the oil slicks on our beaches, the thunder of jet planes over our homes, the pall of smoke over our cities, and the degraded state of our rivers and our seashores shows the necessity for urgent national action against pollution.

One way to increase public knowledge of these problems has been to set aside a special time for the Nation to study, to discuss, and to observe the environment. To this end I have cosponsored a resolution in Congress to designate an "Earth Week."

Last year more than 3,000 universities and more than 10,000 high schools participated in "Earth Week" and "Earth Day" discussions covering the entire range of problems regarding the environment, and suggesting new solutions and policies.

Similar efforts are being planned this year and one such event, to be held the first day of spring, March 21, has been scheduled by the National Council for Survival Research and Education which encourages worthwhile environmental projects and inventions and serves as a clearinghouse for environmental information.

The national council contacted a very talented writer from west Los Angeles, Mrs. Shirley Solmon of Pacific Palisades, a member of ASCAP and the Dramatists Guild, and asked her to write a strong lyric for "Earth Day" festivities, calling for national and international action to assure that the earth remains livable.

She wrote "One Earth," and Scott Seely, an ASCAP composer and arranger, wrote the music. Arrangements are now being completed by the national council for the song to be introduced at other national "Earth Day" ceremonies.

Mrs. Solomon has long been concerned about environmental problems and the preservation of the California coastline. She recently completed the book and lyrics of a musical play, "Heads Up," for which Mr. Seely wrote the score, and she is now working on the libretto of a political musical, "The Senator's Shadow."

The following lyrics to her song, "One Earth," may be of interest to my colleagues:

ONE EARTH

One Earth . . . to have and hold.
You can't buy it with gold,
So cherish it and love it
And take care of it.

One Earth . . . one world to share.
We all breathe the same air,
So honor and respect it
And let's protect it!

Our lakes and rivers are grimy.
Bulldozers level hills and trees.
Noises grow harsher and more booming
Our wild life and fish
Will soon be absentees!

It's our last chance . . . no time to lose.
It's up to us to choose.
There is no substitution,
No place to run—
One Earth, one chance—
One earth, just one!

Lyric by Shirley Solomon, A.S.C.A.P.
Music by Scott Seely, A.S.C.A.P. Copyright, 1971.

DISCRIMINATION AGAINST WOMEN

HON. SHIRLEY CHISHOLM

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mrs. CHISHOLM. Mr. Speaker, because of the personal feelings I have on discrimination against women and the national and international impact felt by all women, I feel it a grave importance to include in the RECORD the highly significant statement expressed by Mrs. Daisy K. Shaw before the Special Subcommittee on Education of the Committee on Education and Labor.

It is as follows:

STATEMENT OF MRS. DAISY K. SHAW, DIRECTOR OF EDUCATIONAL AND VOCATIONAL GUIDANCE OF NEW YORK CITY, AND PAST PRESIDENT, DIRECTORS OF GUIDANCE OF LARGE CITY SCHOOL SYSTEMS OF THE AMERICAN PERSONNEL AND GUIDANCE ASSOCIATION

Mrs. SHAW. Representative Green, distinguished members of the committee:

It is a great privilege for me to testify before you today with regard to section 805 (prohibition of discrimination) of H.R. 16098, the Omnibus Postsecondary Education Act of 1970.

Although women represent a majority of 51 percent of our population, they suffer from many of the same barriers to economic and social progress as do the minority groups in our society. They are paid less than men for comparable work, are often consigned to menial or routine jobs, are passed over for promotion, have a higher unemployment rate than men, and are grossly underrepresented in decisionmaking posts in politics, business, and the professions. These facts are well documented in numerous reports published by the Department of Labor, the Department of Commerce, the Women's Bureau, and various commissions and task forces.

Now, as never before, discrimination against women calls for strong new legislative action as well as vigorous enforcement of existing statutes. However, legislative remedies alone are not enough. What is needed is a thoroughgoing reappraisal of the education and guidance of our youth to determine what factors in our own methods of child rearing and schooling are contributing to this tragic and senseless underutilization of American women. For, as long as women perceive themselves as inferior, and as long as men cast them in subservient roles, legislation alone, though helpful, will not produce any substantive change in the status of American women. Fifty years after women's suffrage was won in the United States, we find only one woman in the Senate and 10 women in the House of Representatives. At the risk of being accused of female chauvinism, may I add that their quality is very high.

How do perceptions of sex roles develop? There is an old popular song of the forties that starts: "You have to be taught before it's too late, before you are six or seven or eight * * *." From their earliest years, children are introduced to picture books which practically condition them to accept males as the commanding, dominant figures in their lives. In a fascinating article published recently in the children's section of the *New York Times* book review, Elizabeth Fisher found that there were five times as many males in the titles of picture books as females, and that even animals in books are male for the most part. Furthermore, says Miss Fisher, even when females are depicted, their activities are quite limited—

They do not drive cars. Though children see their mothers driving all the time, not a single description or picture of a woman driver could I find. In the world today, women are executives, stockbrokers, taxidrivers, steelworkers; in picture books these are nonexistent—Though there have been women doctors in this country for over a hundred years, and pediatrics is one of their preferred specialties, there is not a single woman doctor to be found. Women are nurses, librarians, teachers—but the principal is always male....

Let us move from the preschool years to the kindergarten. Here little girls are still encouraged to "play house" in the homemaking corner, while little boys are building, firefighting, or policing. If one examines the primers used in the first three grades of elementary school, one searches in vain for a woman depicted as a worker (except for the omnipresent teacher and an occasional nurse, waitress, or secretary). Even the most up-to-date basal readers, issued in endless series by the leading publishers, are still presenting Dick and Jane types having endless fun, while mommy waits innocuously at the garden gate or in the apartment to welcome daddy home from a hard day at the office. (By contrast, the wicked queens of the old fairy tales at least displayed some executive talent.) It is true that there has been an effort during the past few years on the part of some publishers to update reading material used in the elementary schools. However, these changes have been largely confined to presenting a more balanced view of ethnic diversity in the urban environment. With a few outstanding exceptions, as in the Bank Street readers, women are still being portrayed in the same old stereotyped roles.

I have brought with me copies of three popular basal readers. If one looks through them, one searches in vain for an illustration of a woman who is engaged in some meaningful occupation. If you will examine these and any others of dozens of similar books, you will find the same pattern.

Rarely do we find a story about a working mother, although 35.3 percent of all mothers with children under 18 were in the labor force—as of 1967. Children who read stories depicting idyllic family scenes must feel somewhat deprived if their own mommies are out working rather than baking a cake at home. Thus, we continue to nurture the "feminine mystique," the image of women developed during the Victorian era, which limited the culturally approved role to that of wife and mother.

These subtle concepts, imprinted on children's minds in the early school years, are reinforced during adolescence by the communications media. Girls are constantly reminded of the need to be attractive, so that they can acquire a mate who will provide them with all the material comforts. Labor-saving devices are advertised as easing the lot of the housewife, rather than that of the working woman—or man, for that matter. Plenty of men use laundromats, but you never see one proclaiming that his wash is "brighter than bright." With the constant and prolonged emphasis on the need to please rather than the need to be someone, it is small wonder that many girls choose easier or less time-consuming courses of study than boys, and frequently give more attention to the social rather than the intellectual aspects of college life. (There has been some deviation from this trend in the recent past, it should be noted.)

Women themselves sometimes help to perpetuate sex-related career stereotypes. For example, note this recent release from a Woman's Program Newsletter:

ATTENTION, ALL BOSSES!

"If you've been looking for a way to express special appreciation to your secretary, here's a suggestion from the State Commerce Department Woman's Program—how about saluting her during Secretaries Week, April 21–26, with the State flower to brighten her desk?"

How can it escape even a woman executive that the "boss" is "he" and the "secretary" is "she"?

American girls who are now in school will constitute 40 percent of the future labor force in our economy. Whatever their reasons for working—whether to support themselves or their dependents, to supplement family earnings, to achieve wealth or status, or to seek self-fulfillment—they will need special help from counselors in career planning. For most girls, work will be supplemental to their major responsibilities of wife and mother during a significant portion of their lives. Their career patterns will include various combinations of work, school, and marriage. Their ability to carry out their dual role successfully will be complicated by two factors: the discontinuity of their attachment to the labor force and the occupational concentration of "women's" jobs.

The sex label would seem to be a cultural rather than a biological factor in the labor market. The concentration of women in clerical occupations, teaching, nursing, sales, and service occupations is based on cultural factors and societal expectations rather than on sex-linked characteristics or aptitudes.

The broadening career opportunities which should be opened to women place upon counselors a special responsibility to raise the aspirations of girls, to assist them in achieving a satisfactory identity both as women and as workers, and to help replace past occupational stereotypes. Counselors must be continually alert to the changing values of the society for which young people are being prepared. While training for a career continues to play a central role in the education of boys, the importance of career planning for girls is less clearly understood. As the role expectations of American women continue to change in this era of technological progress and automation, counselors are faced with an important question: "Should counseling be different for girls than for boys?"

Thirty years ago, before we had counselors in most cases at all, it would not have been uncommon for a well-meaning teacher to say to a girl: "Your work in physics is excellent, but you may as well be practical. In a few years you'll be married and raising a family. Why go into a field which requires so many years of preparation." To another he might have said: "Your grades are high enough to get you into a premedical course, but you know what chance a girl has of getting into medical school. Besides, it would take you 9 or 10 years before you would be ready for private practice. Why not go into nursing instead? It's a wonderful profession now, and when you are married, you'll be able to give the best of care to your family." And to a third: "Why don't you take a business course? You'll only be working a few years anyway before you have a home and family."

The "self-image" of the individual girl is strongly influenced by society's expectation of her role. Although labor market analysts estimate that 9 out of every 10 girls in school today become workers at some time in their lives, many are still indoctrinated with the idea that work will be an optional, incidental part of their lives, if indeed they will ever work at all. Some still believe a Prince Charming will carry them off and they will live happily forever after.

Your action to assure equal opportunity for women through section 805 of the Omnibus Postsecondary Education Act of 1970 will encourage the full utilization of our human resources. May I respectfully offer for your consideration several other recommendations directed toward the same objective:

1. The formation of a commission to study the educational needs of girls with special reference to current practices in preschool and early childhood education, the adequacy and relevance of the curriculum in the light of expanded opportunities for women, and the provision of guidance and counseling for both girls and boys in elementary and secondary schools.

2. Authorization of grants to establish guidance institutes (on the NDEA model) for the in-service training of school counselors in the special guidance needs of girls.

3. Support for increased appropriations for guidance and counseling so that both girls and boys will receive adequate educational and career guidance from qualified, professionally trained counselors.

A few weeks ago, I represented our association before Senator Magnuson's Appropriations Subcommittee to request an additional appropriation of $217,500,000 under title III for guidance and counseling. At the present time, the House figure for guidance is $17 million: the Senate figure is $24,500,000. While even the latter figure falls far short of the actual need, it is our fervent hope that you and your colleagues on the House Appropriations Committee will support the higher figure.

There is great interest in the development of innovative programs in education. The greatest innovation of all would be to provide enough counselors to enable us to reach our young people, so that we could help them cope with the multiple problems which they encounter today. The pupil who comes from a disadvantaged environment plagued by discrimination, marginal subsistence, and disruption of normal family relationships, is least prepared to take advantage of cultural and educational opportunities.

In a recently completed survey conducted by our association, we found the following average counselor-pupil ratios:

City population:	Average C-P ratio
100,000–250,000	1–751
250,000–500,000	1–857
500,000–1,000,000	1–815
1,000,000 and over	1–750

However, in many cities the average was substantially higher (up to 1–2,600). The professionally trained counselor is uniquely qualified to work with the individual student, to encourage educational achievement and career development and to maximize human potential. To accomplish this, the counselor must have a realistic caseload. Ten years ago, accepted professional standards called for a counselor-pupil ratio of 1 to 250 in the secondary schools. An even lower ratio is required for students with special needs.

Today we recognize that girls must be prepared for their dual role as homemakers and as workers. The new life pattern of the modern women will include school, work and/or marriage, home, and a career. The two periods when women are most likely to work are during their early twenties and again starting in their early midforties until the age of retirement. Career exploration and planning for girls has equal importance with career exploration and planning for boys. Girls must be encouraged to select careers which will challenge their abilities and bring them self-fulfillment. At the same time, neither boys nor girls should be restricted to stereotyped choices based on traditional male or female role models.

We are not advocating special counselors for girls but, rather, are underscoring the need for adequate guidance for girls and boys. The lack of expert counseling can have devastating results for both, but girls are at a special disadvantage because they are so often frozen into stereotyped roles by social expectations. (Boys are also confronted by subtle psychological barriers when they seek to enter fields which are traditionally feminine, for example, nursing, early childhood education, dancing, secretarial work.) What we seek is an open society, one which offers equal opportunity and freedom of choice to all. If many, or even most, women should eventually select careers as homemakers, nurses, or office workers, it should be as a result of personal decisions, reached after careful consideration of all options, not because they feel restricted to "women's jobs." In the same spirit, those girls who opt for business, politics, or the professions should meet with no obstacles to self-realization. In summary, we plead for good guidance for all, with special attention to the disadvantaged in our society—both the disadvantaged minorities and the disadvantaged majority—our girls.

Mrs. GREEN. Thank you very much, Mrs. Shaw.

On page 3 you give some statistics about the number of women working with children under 18. I have been looking for the source. I came across it recently and forgot to write it down. I wonder if anyone in the room today has it. The figure was that 60 percent of all children in families where the mother is the head of the household are living in poverty.

Mrs. SHAW. This is the reference. It is from the manpower report of the President, January 1969.

Mrs. GREEN. I have that.

Mrs. SHAW. That is the labor force status of married women with children under 18 and the number of children involved as of March 1967.

Mrs. GREEN. I do not think that figure is in there.

Mrs. SHAW. Which particular figure?

Mrs. GREEN. Not too long ago I read—and it seems to me if this is true, that it has tremendous implications in terms of congressional legislation—that 60 percent of all children who are living in families headed by a woman are living in poverty as defined by the Government. The median income for women, of course, is much less than the median income for men.

It seems to me if this is fact it has tremendous social implications as well as implications for title I of the ESEA and some of the other programs. If any of you have that information or can provide it for me, I would like to have it.

Mrs. SHAW. There is an article in *U.S. News & World Report* published in April which offers statistics. I am surprised that the figure is as low as 60 percent. I thought it was even higher.

Mrs. GREEN. I thought 60 percent was pretty startling.

Mr. ERLENBORN. I would join with the witness in saying I would think that figure is rather low, particularly with the type of welfare program we have, which puts a premium on the family without the father. Sixty percent sounds to me as though it might be low.

Mrs. SHAW. Here is a reference from the U.S. Women's Bureau. "Nearly all of the 5.8 million women workers who were divorced, widowed or separated from their husbands were found to be working for compelling economic reasons. In addition, the 4.8 million married women whose husbands earn less than $5,000 per year were presumed to be working in order to provide their families with a better standard of living."

Mrs. GREEN. Let me ask you two or three things in terms of what the schools can do.

Has any attention ever been given in the New York City schools by the guidance and counseling people to the questionnaires that the children bring home from school to be filled out? They are almost always phrased in terms that I think do psychological damage to a child if the mother is in fact working and the father perhaps is unemployed or AWOL. I think it makes the child feel that somehow his family has a social stigma or they are not quite satisfying or conforming to the social norm. It always asks first, "What is your father's occupation?" Very seldom—in fact, I do not think I have ever seen one that puts on an equal basis "What is your mother's occupation?" There may be no reference to the mother—or written in a rather slighting way to the mother—as "Has your mother any other occupation than housewife?"

I have known of instances where small boys especially see this as somehow destroying the father image or giving the impression their family is looked down upon because the mother is the real breadwinner?

It seems to me guidance and counseling should pay some attention to these questions.

Mrs. SHAW. Yes; you are quite right, Representative Green. I would further comment that in most role books, which are printed official documents, they always call for the father's name first, if they call for the mother's name at all.

Mrs. GREEN. Many times the mother is not even to be listed.

Mrs. SHAW. It is generally understood that when the parent's name is called for, unless the father is listed, the family is deemed to be without a father. If a mother is listed as the parent, then this must be a broken home. That is the general assumption.

In our guidance bureau, of course, we constantly alert counselors to the importance of career planning for girls. We issue endless mimeographed brochures, statements, pamphlets, about careers for women.

Mrs. GREEN. We cannot legislate on this, but guidance and counseling people could do a study of questionnaires that are sent out which give the child the definite impression that the only person who is working is the father and that the mother is unimportant—as if the father is unemployed—somehow he is worthless. I also agree with your statement that girls are counseled right out of positions. They are told "You must not take these courses, because a woman couldn't get a job in this area anyhow." This has happened through the years.

One other question which, again, it seems to me the schools can do something about. I ran across a figure not too long ago that of the 278,000 registered apprentices under the Bureau of Apprenticeship Training, less than 1 percent are girls. It seems to me that an effort should be made to rectify this. It seems inexcusable. The highest unemployment rate of any group in the Nation is among nonwhite girls between 16 and 21.

Mrs. SHAW. I would say the unions are quite resistant. Many unions, especially in the construction area, have been 100 percent male.

Mrs. GREEN. And too frequently 100 percent white-Anglosaxon male.

Mrs. SHAW. Yes. It probably would create a furor if a girl wished to be an apprentice plumber, for example, although there is a rather amusing television commercial currently being shown where a little girl asks Jane Withers, the perpetual detergent advertiser, "Can I be a plumber when I grow up?" That struck me as a rather interesting question. In reply to her, I think the adult said, "Why, certainly. You can also help remove all the stains from your sink by using this marvelous detergent," whatever it is. As I watched that, it occurred to me that there are practically no women plumbers.

Mrs. GREEN. It seems to me it is important that every person have the opportunity to be whatever he or she wants to be, rather than to force him into a particular area. Many women do and will continue to choose to be in the home. Many will not; they are asking for the same options that men have.

Aside from the apprenticeship program, I was shocked 2 or 3 years ago when we had visiting school superintendents testifying. They spoke of special classes that were available to boys who were potential dropouts and how successful they had been. In fact they had been so successful they were doubling the number of classes for boys, and were "even starting ONE for girls." I thought this unequal treatment in public schools was a violation of civil rights and I wrote to the Equal Employment Opportunity Commission and the Office of Education. The high unemployment and dropout rate among girls is ample evidence of the need for similar classes—but schools are exempt under title VI.

There was absolutely nothing I could do about such discrimination at that time—since it was and is legal. I hope to correct this in the current bill which is pending before the committee.

I would also think people in the schools as well as the administration could do a better job of bringing girls in the Job Corps up to 50 percent. Legislatively, the highest I have ever been able to get it as far as the law is concerned is 30 percent, over the violent opposition of some of my colleagues. It seems to me 50 percent of the places should be filled by girls if they want in. At times, the waiting list for approved girls has been long.

In the new Conservation Corps there is no quota written in for girls, and I will be amazed if they have any program for them. I repeat these matters that, I've discussed in previous hearings because I believe guidance personnel should be aware of them.

Let me ask you one other question, if I may. Last night I watched a program called "The Advocates."

Mrs. SHAW. I saw the last part of it.

Mrs. GREEN. What is your reaction to that proposal? Let me ask it in two parts: (1) if it were optional, if it were encouraged; and (2) if it became mandatory. Did you see it?

Mr. ERLENBORN. No.

Mrs. GREEN. In the program the suggestion was made to make half-time work available so the man is at work half-time and the woman is at work half-time, and each would spend half of the time at home. They would still have the same income as they had before when the wife was not working.

Mrs. SHAW. I think in theory it is a very good proposal, but practically it would be ineffective for the following reason: As we find the hours of work being decreased in any given occupation, whether it be professional or blue collar, we find people taking second and third and fourth jobs in order to increase their income. Such an option seems quite reasonable and, in fact, it is an ongoing practice, because many firms have part-time workers, but the effect of this would not be to equalize the homemaking responsibilities of men and women, which I gather is the rationale for the proposal. At least, so I gathered from the discussion which followed.

Wasn't it your feeling that there was a sort of hidden agenda that men should participate in child-rearing to the same extent as women and should contribute to the running of the home, and that this would be possible if men and women both worked half-time and gave half their time to the home? If it worked that way, it would be fine. But, again, I can only speak from experience in the field of education where I see a great many people having more than one job.

People who are ambitious and mobile seem to want to do all that they can do.

Mrs. GREEN. I thought one of the main objectives was that with greater flexibility, more women would be able to work half-time or part-time and still fulfill their obligations at home. In so doing they would attain greater personal fulfillment. I thought that was the second major objective. It would also make it possible for fathers to spend more time with their growing children.

Mrs. SHAW. I agree. There is one very important aspect. While there is a good deal of part-time work available today, it does not carry with it the benefits of full-time work. It does not carry pensions, sick pay, health care, and other fringe benefits that the full-time worker enjoys. If half-time work involves those additional benefits, then I think such a practice might be more effective.

Mrs. GREEN. It would seem to me that our schools, which in past years have had a shortage of personnel, could have recruited a great many highly qualified women who would be willing to come back for half a day. Today, when we still have a terrible shortage of health personnel, I do not know why hospital schedules have to be so inflexible. I do not know why nurses and social workers cannot work half-time.

Mrs. SHAW. I think in many instances the practice is in effect. I recall something of the type even in New York City a few years ago, although I have not heard about it recently. I think they have had such a flock of applicants for teaching positions that they did not find it necessary to extend this practice. I believe that this was proposed.

Mrs. GREEN. Mr. Erlenborn?

Mr. ERLENBORN. Might I ask you, Mrs. Shaw, just one question.

On page 6, you say "Thirty years ago it would not have been uncommon for a well-meaning teacher to say to a girl," and you give several examples girls were, in essence, discouraged from entering certain professions. Do you mean to indicate by that that it is uncommon today?

Mrs. SHAW. That is a good question. There are many teachers who are still speaking in those terms. Let me amplify.

A few decades ago, most teachers and whatever few counselors there were counseled in terms they considered realistic. They were deeply devoted to the children's interest. They did not want to see children hurt. So, it would not have been unusual, for example, to hear someone say to a young Jewish boy "Look, you have a great deal of talent for engineering, but why break your heart? You know perfectly well that there is so much antisemitism in that field that you will never get very far. Go into something else where you can succeed."

In the same way some counselors spoke to black students in this vein. William Booth, who is now a judge in New York, was a high school student probably 30 years ago and he frequently tells the story of how 30 or so years ago in high school he told his teacher or counselor that he wanted to become a radio announcer, and this person said to him "Why prepare to be a radio announcer? There are no black radio announcers. Go into something else. Go into law." He offers that as an example of the discriminatory attitude through the counseling of students, and of course to a degree that may have been true 30 years ago, teachers and counselors did do that sort of thing 30 years ago but they weren't doing it from malice. They were doing this in an effort to spare their students from future hardships. Today there is an entirely different attitude.

Never, for example, would a qualified counselor say to a girl "Don't go on to a Ph. D. because in a university such as Columbia only 2 percent of the tenure professors are women." As a matter of fact, the percentage of Ph. D.'s among women has dropped from about 20 percent in the 1940's to about 10 percent in the 1960's.

I am making a distinction between counselors who have special training in a study of occupations in the changing labor market who are able to reach girls and point out opportunities to them, whereas teachers reflect more or less the same attitudes as parents and other members of society. They advise girls to do what seems practical, and what may seem practical at the moment may result in a tragic underutilization of women's talent eventually. That is why I attach so much importance to the provision of adequate counseling in the schools.

In a central New York City high school a counselor will be responsible for over a thousand students. Under those circumstances the counselor cannot reach them, neither the boys nor the girls. It is only where we have these special programs, such as the college discovery program, the college-bound program, where we have counselors in a ratio of 1 to 100 that both the girls and boys succeed. They do not drop out. We have demonstrated over and over again through these special Federal projects under titles I, III, and V, and other titles that through a program of counseling the students do well, but having demonstrated that we cannot replicate it because of the lack of funds.

Right now there are 15,000 high school students in New York City who are getting superb counseling at a ratio of about 1 counselor to about 100 students but the remaining 267,000 are getting it in the ratio of about 1 to 1,200. If you lumped them together you get an overall average of about 1 to 800, but this average is meaningless. Ninety-five percent of our students are getting inadequate counseling and while boys suffer from this also there are adequate outside forces which help project boys into career planning. A boy knows that he will have a career some day; girls are not really made acquainted with all the opportunities that there are for them.

That is why we would strongly urge that a special commission or task force be appointed not so much from the civil rights aspect of looking into discrimination against women but looking into the educational practices starting with Headstart and kindergarten to see what practices we engage in that brainwash girls from an early age to see themselves in a subservient role. Why, for example, is there a homemaking corner in preschool and the nursery school, for girls, while there are building blocks and fire trucks for boys?

Mrs. GREEN. While I am in agreement with what you are saying and I feel very strongly on this, my judgment would be that it would be a small percentage of the American people that would agree with the two of us and that therefore such a commission is impossible. I would like to have your comments in terms of the Congress. I don't think it would be receptive. I think the majority of our colleagues see this as the woman's role and why have a commission to study it. I suspect, from public opinion polls, that that sentiment is shared by the American people.

Mrs. SHAW. The American people are disturbed that such a small percentage of lawyers happen to be women——

Mrs. GREEN. Not at all.

Mrs. SHAW (continuing). And that a small percentage of doctors happen to be women. They aren't?

Mrs. GREEN. No.

Mrs. SHAW. I am disturbed by it.

Mrs. GREEN. A small minority of women also are Members of Congress, if the public were really concerned they would vote differently. I think the answer is no in all of the cases you cite—though not to use women's full potential in education, law, medicine is a loss to the Nation.

Mrs. SHAW. You see, women themselves are their own worst enemies, because they are brainwashed from this very early age to see themselves in this role.

Mrs. GREEN. I want to go off the record—as I've seen some studies that dispute this.

(Discussion off the record.)

Mr. ERLENBORN. I have no further questions.

Mrs. SHAW. I agree with you as far as saying that women do like women, but I question the interpretation of that survey. It may be that women did not see themselves as favoring someone because of sex and that men didn't see themselves as favoring or not favoring someone because of sex. It is a question of identification. When people think of a leader they more generally tend to think of a man in that position because of a long process of conditioning. I see this in school systems all over the country. The majority of teachers in any given school are usually women and the principal is usually a man.

Mrs. GREEN. More recently this has been the case. At one time women were predominantly the principals in elementary schools but now they are in the minority.

Mrs. SHAW. I noted, for example, in our own Board of Education that male superintendents usually select male executive assistants. Now, surely there are just as many capable women executives. Even though these superintendents are all for women's rights, when it comes to selecting assistants they feel more comfortable working with men.

Mrs. GREEN. I think this is true.

Mrs. SHAW. And you have heard the expression from both men and women at times that they dislike working for a woman.

Mrs. GREEN. This is the same statement as against the minority—it's been repeated through the years: "How would you like to work under a Negro boss?"

Mrs. SHAW. Yes.

Mrs. GREEN. I thank you very much, Mrs. Shaw. You have been extremely helpful to our committee.

Mrs. SHAW. Thank you very much for hearing me.

(The following letter was submitted for the record.)

BOARD OF EDUCATION
OF THE CITY OF NEW YORK,
Brooklyn, N.Y., July 13, 1970.

Representative EDITH GREEN,
U.S. House of Representatives, Committee on Education and Labor, Special Subcommittee on Education, Washington, D.C.

DEAR MRS. GREEN: This is in response to an inquiry about the counselor-pupil ratio in our public schools, which was transmitted to me through the office of your counsel, Mr. Harry Hogan. In speaking before your Committee, I alluded to the fact that the counselor-pupil ratio in special Title I programs, such as College Bound, College Discovery and Development and similar programs, was excellent, averaging one counselor to 100 pupils, whereas the counselor-pupil ratio for the general population of high school students was totally inadequate. Following are the statistics showing the ratio of full-time guidance counselors to pupils in Title I programs as compared with the regular programs in the New York City high schools:

RATIO OF FULL-TIME COUNSELORS TO PUPILS

	Regular program	Special programs [1]	Total
Number of counselors	220	124	344
Number of pupils	267,224	15,528	282,752
Ratio	1 to 1,215	1 to 125	1 to 822

[1] See the following table:

	Number of counselors	Number of pupils	Ratio
College bound	85	9,000	
College discovery	10	1,166	
Correlated curriculum	13	1,612	
Aspiration search	16	3,750	
Totals	124	15,528	1 to 125.

The Title I programs referred to above have been cited as "exemplary." Indeed, they have produced the most encouraging results. For example, in the College Discovery and Development program, which provided one counselor to every 100 students as well as other educational services, 95% of the class graduating in June 1968 and 93% of the class graduating in June 1969 were admitted to degree-granting institutions. These disadvantaged students, most of whom would have become high school dropouts without this special help, were able to overcome their academic lacks because of the individual attention which they received in this program.

The problem is that special programs of this type reach only about 5% of our high school population, the remaining 95% among whom a majority need the same kind of help, do not have access to the services of full-time, professionally trained counselors. Let me cite an example in a typical high school with such a program. In Brandeis High School which has a population of 5,264, there are three counselors serving 300 pupils in the College Bound program, while the remainder of the school population, 4,964 students are served by only three other counselors, in a ratio of 1 to 1,600. The fact is, however, that the 4,900 students are just as disadvantaged as the 300 in the special program and yet do not receive the help they need. Over and over again, we hear the same plea from students: "There is no one whom we can talk to. The counselors do not have enough time for us." The counselor-pupil ratio in our elementary and junior high schools varies from about 1 to 850 to 1 to 1,600. In a recent survey completed by the school authorities in Milwaukee, the following data regarding the counselor-pupil ratios for 20 large cities were shown:

	Counselor-Pupil ratio
Portland	1–250
Detroit	328
Dade County (Miami)	350
Minneapolis	350
St. Louis	369
Baltimore City	371
Chicago	375
Buffalo	377
Boston	400
Seattle	400
Cincinnati	410
New Orleans	428
Cleveland	430
Pittsburgh	446
Broward County (Fort Lauderdale)	466
Milwaukee	488
Indianapolis	500
Los Angeles	513
Houston	600
New York	794

Except for the affluent suburbs, the lack of guidance and counseling in most of our large cities is woefully apparent.

As you know, although guidance and counseling had its origins in the first decade of the century, its real growth took place in the 1950's and 1960's, largely as a result of the impetus provided by "seed money" through NDEA and similar programs. Today, a good many counseling programs are funded under Title I and other Titles, but the "seed money" concept no longer works for the simple reason that cities and municipalities lack the funds to replicate these exemplary programs. What is most urgently needed, if we are to provide every American boy and girl with adequate counseling, is general support for counseling services rather than funds for pilot projects. It has been demonstrated over and over again, in every part of the country, that when intensive counseling services are provided, pupils make dramatic advances.

I would therefore urge your support of full funding for guidance and counseling services for all pupils in elementary and secondary schools. We know that you are a staunch friend of the guidance profession and we appreciate your continuing efforts in behalf of educational improvements.

Very sincerely yours,

DAISY K. SHAW, *Director.*

FREEDOM—OUR HERITAGE

HON. JAMES A. McCLURE

OF IDAHO

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. McCLURE. Mr. Speaker, Tim Coughlin, a senior at Bishop Kelly High School in Boise, was the State winner in the Idaho Voice of Democracy contest this year.

This is the week when all of the State champions in the annual contest sponsored by the Veterans of Foreign Wars gather in the Nation's Capital. I would urge my colleagues in the House to take a look at these youngsters. Those who have given up on the next generation would be surprised at what they both see and hear.

I am especially proud of Tim Coughlin. His speech demonstrates so vividly that he truly understands the meaning of democracy and the type of man who has kept us free for two centuries—men with integrity and courage, with a sense of responsibility and an awareness of his era. I comment to you Tim's speech:

FREEDOM—OUR HERITAGE

(By Tim Coughlin)

Webster's dictionary defines freedom as the absence of necessity, coercion, or restraint in choice of action.

That same dictionary defines heritage as something transmitted or acquired from a predecessor.

In these two words is summarized the better part of American history. In nearly everything that can be read of our past, you can tie these words in and apply them.

Over the years, you might say, a pattern has emerged, almost a basic blueprint for a free man. Every person that we admire in history had the following qualities:

First, he had the integrity and courage to follow what he knew was right, to defend his decisions when necessary, and the plain ordinary guts that took all the hard knocks that came his way.

Second, he had a responsibility. He placed his beliefs and ideals first, and himself a poor second. He was self-reliant enough to do it alone if need be, to cross a continent to farm or to cross the senate floor to vote with the opposition. We could see freedom as liberty, not license.

Finally, he needed an awareness of the era in which he was living, of what was going on around him, which could tell him when it was time to sit and when it was time to stand.

And so indeed we have a heritage, but a bit different from what we often picture. To many of us, heritage is something down in the park, that we take the kids to see on Saturday afternoon.

All the old forts, ships, planes, and so on are to remind us that in each of these old relics was a man or men who was free. Free, not by being told that he was born into a democracy, but free by thinking, being, doing, and sometimes suffering for what he believed in.

To these men, freedom was not something of the past but of the present. Not something passive, but something active and real.

Because they fought and won and remained free, we honor the men and the place. One word describes these battles that made and kept us free—dissent.

"The Congressman from Illinois voted for the resolution of the Congressman from Massachusetts, declaring that the war had been unnecessarily and unconstitutionally begun by the President."

Shades of the Cooper-Church amendment to end the war? Hardly. The date was December 22, 1847, the war was in Mexico, and the congressman's name: Abraham Lincoln.

In the continent of Europe in the fifteen and sixteen hundreds, the religious beliefs of the people were determined by the rulers of the state. Those who believed differently could either face persecution or leave.

Those who left became our pilgrims and puritans. They dissented, they had the integrity, the responsibility, and the awareness to act, and they began our nation.

The last example is that of Edmund G. Ross, a Republican Senator from Kansas. Ross cast the not guilty vote that acquitted President Andrew Johnson at impeachment trial in 1868. By courage and adherence to his beliefs, Ross dug his political grave and saved our form of government.

Each of these people demonstrated the qualities I mentioned. Each, in his actions, was not only greater but also more free in his position than those around him.

Dissent then, whether it be on campus mall or senate floor is the heartbeat of freedom.

Violent dissent though, is a sad mistake.

It changes an open ear and mind to a closed, clenched fist.

The Boston Massacre and Kent State both look interesting in the history books, but they are complete dead ends.

Perhaps the heritage of those before us is like a ship's log: It reminds us of where the ship has gone and how the men who sailed the ship before us got her through other storms and shoals and kept the ship free.

Like any ship, she is not steered by the hand at the wheel alone. A single lonely man, free in his courage and defiance, pulling a sheetline, can alter the course of the ship, and of history. His actions can be called mutiny and treason, but he is in his own right and he is free.

In his freedom, that one man can guide the ship on to clearer waters.

EDITORIAL COMMENT ON REVENUE SHARING

HON. DAVID R. OBEY

OF WISCONSIN

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. OBEY. Mr. Speaker, the Milwaukee Journal took a recent editorial look at some revenue sharing proposals and found merit in the one proposed by Congressman HENRY REUSS and Senator HUBERT HUMPHREY.

Their proposal differs from others by requiring Governors in the second year of revenue sharing to come forward with plans for modernizing State and local governments.

How to improve the financial prospects of State and local governments is of more than passing interest to residents of Wisconsin, which supplies 1.98 percent of Federal tax revenues—excluding social security and other trust fund receipts—while receiving only 1.58 percent of categorical Federal grants paid to States.

The text of the editorial of February 25 follows:

REVENUE SHARING ON THE MOVE

The way appears to be opening for a compromise on President Nixon's far reaching revenue sharing proposals, with the administration backing down on its "no strings attached" grants to state and local governments. In Congress, too, there seems to be recognition that in the face of the need for revenue sharing of some sort it would be fatal to have a knock down, drag out battle over how to get the job done.

Secretary of the Treasury John Connally, in the first interview he has granted, told David Broder of the Washington Post that the president's goals could be accomplished by broadening present federal grant in aid programs should Congress reject the controversial $5 billion no strings attached plan.

Murray L. Weidenbaum, an assistant secretary of the Treasury, indicated to the Joint Economic Committee of Congress that the administration might accept a revenue sharing program of a different size than it has proposed and with some new restrictions. Asked about an alternative plan proposed by two Democrats, Sen. Hubert Humphrey of Minnesota and Rep. Henry Reuss of Wisconsin, he said: "They have introduced a good bill, and I will not attack it." However, Weidenbaum said later that he hoped the administration bill would be adopted and that if there were any compromise it would have to come from the White House.

Reuss and Humphrey have indicated that they want to find accommodation with the administration on the matter of revenue sharing.

The Reuss-Humphrey measure would not place any more restrictions than the administration would on how state and local governments spend any new money. But it would impose significant new requirements and restrictions in other ways. They would require governors, in the second year of revenue sharing, to come forward with plans for modernizing state and local governments. They recommend such reforms as annual legislative sessions, eased restrictions on borrowing and taxing powers of local governments, elimination of small units of government, formation of regional governmental bodies.

Reuss and Humphrey would also offer incentives for states to enact more "progressive" tax systems under which wealthy people would carry a higher share of the burden. This would entail instituting income tax systems in states that do not have them and raising such taxes in states that do. And, ultimately, the Reuss-Humphrey plan contemplates a federal takeover of welfare costs.

Revenue sharing on an increased basis seems inevitable. The administration and Congress seem to be moving toward a system mutually agreeable. No system that does not carry some restrictions or does not give incentives for better local management is desirable. It is here that compromise must come.

CONGRESS SHOULD VETO THE SST

HON. JAMES V. STANTON

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. JAMES V. STANTON. Mr. Speaker, the following editorial, which appeared in the Cleveland Plain Dealer on March 7, raises questions about the proposed SST project that its supporters have never completely answered. I believe this editorial will be of considerable interest to my colleagues in the House who also question the priority of the SST:

CONGRESS SHOULD VETO THE SST

The SST debate is on again in Congress. Supporters of the supersonic transport, including President Nixon, are back for more federal funds to continue development of two prototypes.

We think Congress should say "no."

The arguments for continuing the development of this plane now, when so many questions remain unanswered, are not strong.

The proponents say the work must go on to preserve jobs in the aviation industry. Cutting off federal support would cost 150,000 jobs, they say.

We agree it is important to maintain employment, but we think the capital, the design talent, the engineering genius and the work skills involved in the SST program would be better directed at other goals than production of an aircraft that could cut the trans-Atlantic flight time in half for the benefit of a relatively few jet-setters and businessmen.

Would it not serve a far greater public interest to put aviation experts at work designing short take-off aircraft that could help solve urban flight problems? Couldn't some of the managerial talent in the aviation industry be used to solve mass transportation problems on the ground? Couldn't engine designers make a far more valuable contribution to society by fashioning a pollution-free auto engine?

We are sure America would earn the world's gratitude for halting the SST if it turns out, as some scientists suspect, that flights in the stratosphere could alter the world's climate or disturb the ozone layer that screens out harmful radiation from outer space.

No country should permit large-scale flights at SST altitudes until these environmental questions are answered. And it does not take two SST prototypes to find the answers. Existing supersonic military aircraft could be used for research.

A third argument advanced, weakest of the lot, is that the nation has already sunk more than $90 million into the SST, and should continue funding the plane to protect the investment.

Many a poker player has lost a bundle following that philosophy. Sticking with a bad hand is not a good investment, but just the opposite. And the SST is a bad hand, a plane that very likely cannot be flown at a profit. British and French airline experts have the same doubts about their SST, the Concorde.

The Senate last year asked 16 leading economists—such men as Paul Samuelson, Walter Heller and Milton Friedman—what should be done about the SST. Fifteen of them said the U.S. should cut its losses and get out.

We think W. J. Baumol, one of the economists, put it well. "Neither the government nor private enterprise should be tempted to throw in good money after bad," he said. "Everything necessary should be done to facilitate the transfer of the capital and labor tied up in the development of the SST to other activities that do serve the public interest."

IN MEMORIAM TO NEW JERSEY STATE SENATOR, THE HONORABLE EDWARD M. SISCO

HON. ROBERT A. ROE

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. ROE. Mr. Speaker, during this past weekend the residents of my congressional district and the State of New Jersey were shocked and saddened by the sudden untimely death of one of our outstanding and distinguished statesmen and my dear personal friend, the Honorable Edward M. Sisco of Wayne, N.J. Our condolences are extended to his wife Evelyn; his daughters, Nancy and Lori; and his son Mark.

Senator Sisco suffered a stroke on February 26, 1971, and passed away on March 6, 1971, at the height of his public service career at the young age of 47 years. Let the history of his service to his fellow man, his dedication, devotion, and sincerity of purpose be forever remembered through this historical journal of the House of Representatives of the U.S. Congress.

He was born in Paterson, N.J., and was a resident of my hometown, Wayne, for almost 19 years. He was a graduate of the Paterson public school system—Paterson School 5 and Central High

School—and elected to the New Jersey State Senate from our Passaic County district in 1967 and concurrently continued to serve out his term as mayor of Wayne to which he had been elected in 1964. He was named delegate to the State Constitutional Convention in 1966 and was nearing the end of his initial term as State senator at the time of his demise.

A stanch Republican, Senator Sisco joined the Wayne organization in 1958 and was party leader before being elected Wayne's Sixth Ward Councilman in 1962. He also became the first council president that year under a new form of government, and served two terms.

A member of the Wayne Planning Board and the Wayne Library Board, he was also past president of the Lions Club and past public relations director of District 16A Lions International. He was an active member of the Elks, the Wayne Post of the American Legion, Passaic County Republican Organization, Black Oak Ridge Homeowners Association, Pica Club, Wayne Township PTA, and the Wayne Musical Theatre group. He served as Passaic County special deputy sheriff, and treasurer of the Quad-City Incinerator Solid Waste Disposal Committee.

Senator Sisco was a former employee of the Erie Railroad Co. and served 5 years as a labor representative of the Order of Railroad Telegraphers. He was a representative with the Maryland Glass Co. and president of the Lor Mark Packaging Co. and T-Bowl International. He was director and member of the executive committee of the Ramapo Bank.

The Wayne Elks Lodge, of which Senator Sisco was a member, conducted services at the Moore's Home for Funerals, Wayne Chapel, and with State policemen as honorary pallbearers and Reverend Robert Grant of Embury United Methodist Church of Paterson, where Senator Sisco had served on the board of trustees, officiating, the Senator was laid to rest this morning in Laurel Grove Cemetery, Totowa, N.J.

I ask my colleagues to join with me in a moment of silent prayer to the memory of a distinguished American, Senator Edward M. Sisco from the Township of Wayne, County of Passaic, State of New Jersey. May his wife and children soon find abiding comfort in the faith that God has given them and the knowledge that Ed is now under His eternal care.

MAN'S INHUMANITY TO MAN—HOW LONG?

HON. WILLIAM J. SCHERLE

OF IOWA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. SCHERLE. Mr. Speaker, a child asks: "Where is daddy?" A mother asks: "How is my son?" A wife asks: "Is my husband alive or dead?"

Communist North Vietnam is sadistically practicing spiritual and mental genocide on over 1,600 American prisoners of war and their families.

How long?

INVASION OF LAOS

HON. ROBERT F. DRINAN

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. DRINAN. Mr. Speaker, I attach herewith an excellent document prepared by the Lawyers Committee on American Policy Toward Vietnam. This committee of which Mr. William L. Standard and Joseph H. Crown are cochairman has an advisory council made up of distinguished scholars such as Professor Stanley Hoffman of Harvard University, Professor Hans J. Morgenthau of the University of Chicago, and Professor Richard A. Falk, Milbank Professor of International Law at Princeton University.

The statement below is a clear, cogent and compelling statement on the errors and evils of the invasion of Laos by the Nixon administration.

I include the statement as follows:

LAWYERS COMMITTEE ON AMERICAN POLICY TOWARD VIETNAM

The Administration's argument that Congressional restrictions on the use of American ground combat troops in Laos and Cambodia authorize, by implication, the air war in those countries is sheer sophistry. War, under our Constitution, cannot be authorized by implication; military operations are valid only by affirmative action by Congress. In the present constitutional crisis, members of Congress have seemingly overlooked the National Commitments Resolution overwhelmingly adopted (70 to 16) by the Senate on June 25, 1969. This Resolution states (so far as here pertinent):

"Resolved, That (1) a national commitment for the purpose of this resolution means the use of the armed forces of the United States on foreign territory, * * * and (2) it is the sense of the Senate that a national commitment by the United States results only from affirmative action taken by the executive and legislative branches of the United States Government by means of a treaty, statute, or concurrent resolution of both houses of Congress specifically providing for such commitment."

It is indisputable that the President's use of American armed forces (warplanes, helicopter gunships, etc.) in Laos and Cambodia has not been authorized by any treaty, statute or concurrent resolution (specifically providing for such use). Indeed, our Government has solemnly signed the 1962 Geneva Accords, agreeing to respect the neutrality and territorial integrity of the Kingdom of Laos. The President's actions in ordering American armed forces into Laos and Cambodia flagrantly contravenes the National Commitments Resolution which was adopted to preclude such Presidential unilateral action.

In the absence of affirmative action taken by Congress specifically authorizing military measures, the President's constitutional powers under the commander-in-chief clause do not authorize him to wage war. The Founding Fathers vested in Congress alone the sole power to commit our armed forces to hostilities abroad—to safeguard our nation against unchecked executive decisions to commit our country to a trial of force. The commander-in-chief clause merely placed the President at the top of the pyramid of military command—making him, in Alexander Hamilton's words, "first general and admiral of the Confederacy."

President Nixon cannot even rely on the Tonkin Gulf Resolution on which President Johnson relied as a legal basis for waging war in Vietnam for that Resolution has been repealed and indeed the repealer was signed by President Nixon himself. There is therefore not a vestige of Congressional authorization for committing American forces to hostilities on foreign territory (Laos, Cambodia).

The national commitments resolution reflected an accurate description of the constitutional responsibilities of the President and Congress, adopted toward the end of restoring the proper constitutional balance. We believe the Foreign Relations Committee should take all measures necessary to assure compliance with the national commitments resolution and to bring to a halt the violation thereof.

Since Congress has not authorized military hostilities in Southeast Asia, President Nixon, in continuing to wage war in Indochina, has been violating the Constitution. President Nixon's constitutional powers, as Commander-in-chief, to protect the lives of American troops do not authorize him to wage war, but are limited and restricted to measures necessary to the safe and expeditious withdrawal of these troops. Two years are far too long a period within which to have fulfilled that constitutional responsibility. The best way to protect the lives of American troops is to remove them from Vietnam—not to retain them to continue military operations.

Madame Binh, Foreign Minister of the Provisional Revolutionary Government of South Vietnam, has officially proposed at the Paris Conference that if President Nixon will establish and abide by a date for the complete withdrawal of all U.S. troops, the P.R.G. will assure the safe withdrawal of our troops as well as immediate discussion for the release of prisoners of war. President Nixon has failed to explain why he rejects this offer and prefers instead a policy that jeopardizes the lives of our troops and postpones indefinitely the release of American prisoners of war. President Nixon's refusal to establish a timetable for complete U.S. withdrawal makes continuation of the war inevitable—as does his persistent support for Thieu and Ky, who have emphatically stated their opposition to the withdrawal of American military support. They wish to retain their present position as heads of a narrowly constituted military regime maintained by a massive foreign presence. But as Ambassador Harriman has so pointedly said, "Why should we give Thieu the right to dictate American policy? I can't conceive why anybody should give a veto to a foreign potentate no matter who he is." (*Look*, November 17, p. 39.)

Congress, in enacting the Cooper-Church amendments, made clear that, whatever the asserted powers of the President as Commander-in-chief, no ground troops or advisers were to be sent into Laos or Cambodia. The Cooper-Church amendments were intended to restrict American involvement in Indo-China not to exacerbate it. The air war being waged in Laos and Cambodia is contrary to the intent and spirit of Congressional restrictions as pointed out by Senator Mansfield in the T.V.-Radio program, "Face the Nation" (Jan. 4)

Since President Nixon lacks any constitutional power to wage war in IndoChina, Congress should act to halt such unconstitutional activities. If the President persists in violating the Constitution, it is Congress' responsibility to institute impeachment proceedings. Andrew Jonson was impeached for acts much less iniquitous.

We have been told that we are defending American honor; but many Americans and most of the world's nations feel that the spectacle of the enormously destructive U.S. military arsenal, especially in the case of the U.S. Air Force, arrayed against peasant soldiers, has defiled American honor as never before in our history.

We urge the Foreign Relations Committee

to forthwith endorse legislation prohibiting all offensive military action in Southeast Asia and setting an early deadline in 1971 for the withdrawal of all American forces.

We believe it would be a mistake to adopt the Javits bill designed to "regulate undeclared war" for under the guise of "protecting American lives" it could be construed to place a stamp of approval upon the military operations in Laos and Cambodia. In our view, it detracts from the force of the national commitments resolution.

Lamentably, too many members of Congress have accepted as valid the insidious false notion projected by the Administration that the President is authorized under the Commander-in-chief clause to do "anything, anywhere" merely by pronouncing the magic words—"for the protection of our troops". In *Youngstown Sheet & Tube Co.* v. *Sawyer*, 343 U.S. 579, 641–42 (1952), the Supreme Court rejected similar claims made by the Executive as to the scope of power conferred by the Commander-in-chief clause. The Administration's claims would confer upon the President unlimited executive power to wage war—an evil which the Founding Fathers decided to exorcise when they vested the war making power in the Congress—in the body most broadly representative of the people. The tragedy in Southeast Asia bespeaks the calamitous price we have paid for the Presidential transgression of our Constitution. We urge this Committee to take the action we have proposed.

Respectfully,

WILLIAM L. STANDARD,
Cochairmen.

PROFESSOR ROBERT LEKACHMAN'S INCOMES POLICY RECOMMENDATIONS

HON. WILLIAM F. RYAN

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. RYAN. Mr. Speaker, fashioning a sound economic policy which would control inflation without increasing unemployment constitutes one of our most critical problems. Robert Lekachman, professor of economics, State University of New York at Stony Brook, in testimony before the Joint Economic Committee on February 25, 1971, and the House Committee on Banking and Currency on February 26, 1971, showed his usual perspicacity and incisive analytical powers in examining this issue.

In outlining his proposed incomes policy, Professor Lekachman commented:

Wherever private economic power threatens public policy, Congress and the President must take pains to regulate the people and the organizations which exert the power. The more concentrated the power is, the greater is the menace to public purpose and the more immediate is the necessity of public intervention.

I include in the CONGRESSIONAL RECORD the full text of Professor Lekachman's testimonies, which I commend to my colleagues:

TESTIMONY BEFORE THE JOINT ECONOMIC COMMITTEE OF ROBERT LEKACHMAN, PROFESSOR OF ECONOMICS, STATE UNIVERSITY OF NEW YORK AT STONY BROOK, FEBRUARY 25, 1971

There is no need here to reiterate the failures of the initial Administration game plan. Mr. Nixon's original promise to control inflation without significantly increasing unemployment has been translated in real life into 6 per cent unemployment and consumer price inflation of approximately the same figure. The tale is as familiar as it is dispiriting.

I intend today to identify the reasons why Nixon economic policy Mark II is only marginally superior to its discredited predecessor. Here the President's cerebrated remark, "I am now a Keynesian in economics", ought to be evaluated within the context of the present adequacy of Keynesian policy. Keynes himself had an opinion worth recalling about the durability of economic ideas and the relationship between such ideas and political action. In the closing paragraph of "The General Theory of Employment, Interest and Money," published in England at the end of 1935, he had this to say:

". . . the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from all intellectual influences, are usually the slaves of some defunct economist."

It would not have shocked Keynes, the owner of one of the century's most agile minds, to observe that after a third of a century his theories of economic behavior and economic policy required drastic revision. Were he still alive, he would no doubt be leading the revisionists.

Certainly this Administration's Keynesianism is timid at least even by the criteria of 1935. The Administration now estimates a budget deficit of $18.6 billion in fiscal 1971. Obviously this substantial sum was too small to overcome the forces of recession, as the unemployment and output statistics demonstrate. Hence it is not intuitively obvious why a substantially smaller deficit of $11.6 billion for fiscal 1972 should be the salvation of the economy. The difficulties in the path of aspiring true believers are accentuated by the refusal of both the Council of Economic Advisers and the Office of Budget and Management to make the detailed sectoral forecasts upon which administration economists have in the past relied.

One explanation of the omission might be the presence in the White House of a powerful surrogate for Dr. Milton Friedman, the puissant Dr. George Schultz. An alternative explanation is the pessimism which such detailed inquiry is highly likely to instill. The respected University of Michigan continuing survey of consumer attitudes and intentions identifies few signs that ordinary Americans, afflicted by uncertainties about prices and jobs, are about to turn cheerful, run to the stores, and happily increase their burden of debt. Indeed wistful expectations that consumers will save less and spend more appear to be based on little more than the historical observation that in most years consumers have saved smaller percentages of their disposable income than lately they have been doing.

Will business investment be the answer? According to recent surveys, business spending on capital goods, a key element in any sustained expansion, will increase only moderately during the rest of 1971. If, as is now anticipated, dollar expenditures on capital goods rise by under 2 per cent, real investment will of course shrink, possibly by as much as 3–4 per cent. Nor are the revised depreciation rules a panacea. At Harvard, Professor Dale Jorgenson's econometric inquiries lead to the conclusion that in the short run the new rules will have little impact. I might observe parenthetically that this new $2.5 billion boon to corporations deserves inclusion in the next compilation of tax expenditures made by the Treasury. Although the tax expenditure notion was a parting Democratic gift by Stanley Surrey to the incoming Administration, its usefulness transcends partisan considerations.

The insufficiency of budgetary stimulus and the implausibility of consumer and investment revival, compel me to share the widespread skepticism in my trade about the ability of the economy to travel within hailing distance of the President's three 1971 targets, GNP of $1,065 billion, inflation tapering to 3 per cent by year's end, and unemployment obediently declining by the same date to below 5 per cent. Unless Congress, as I believe and hope it will do, supplies the additional budgetary stimulus, there is nowhere visible the expansionary forces upon which the Administration rather mysteriously is counting.

Here I come to the major signs of decrepitude in the Administration brand of simple-minded Keynesianism. If by some chance the rate of economic expansion picks up speed, in dutiful accord with the projections of the magical new monetarist model in high favor in the Office of Budget and Management, the White House will collide with a major uncertainty, the willingness of Dr. Arthur F. Burns and his Federal Reserve Board colleagues to underwrite a new inflationary impetus by expanding the money supply at the minimum 6 per cent rate favored by Dr. McCracken and his colleagues at the Council of Economic Advisers. What is unhappily quite possible is a scenario of the following variety: an acceleration of price inflation, a reduction by the Federal Reserve in the rate at which it creates new money, and finally either a replay of the Treasury-Federal Reserve confrontations of the Truman era or a retreat by the White House from fiscal expansion. Either outcome is guaranteed to nip an emerging recovery long before it flowers. Once faith and hope are excluded, there is no special reason to anticipate a noninflationary expansion of the character predicted by the Administration.

II

The contours of workable economic policy are not very difficult to sketch. Sensible economists and politicians accept the death of laissez-faire and do not flinch from the facts of economic power. Prices, incomes, and employment are heavily influenced by the decisions of the giant oligopolies which dominate manufacturing, the major unions which face them across collective bargaining tables, and the AMA-teaching hospital complex which determines the structure of medical costs. The potentates who run these organizations are of course influenced by market forces.

Nevertheless, typically they exercise considerable discretion in their responses to market exigencies. Thus it was that Bethlehem Steel, in the middle of a spell of flagging sales and fierce competition from foreign steelmakers, could propose to raise many of its prices over 12 per cent. It was securely protected from any unseemly price competition from its rivals in the American industry and certain that these rivals would speedily follow Bethlehem's price lead. Although Presidential intervention halved the projected price escalation, there remains something odd about increasing prices in the face of declining sales. Equally odd from the standpoint of competitive theory has been the ability of construction unions to bargain for wage increases as large as 25 per cent despite 11 per cent unemployment among building trades workers.

Both cases are almost random illustrations of the realities of market power. The concentration of this power enabled Bethlehem to choose higher prices and smaller sales in preference to lower prices and larger sales. The same circumstances permitted the construction unions tacitly to bargain for fewer jobs at higher pay rather than more jobs at lower wage rates. As Adam Smith wrote in 1776, what renders the greed of businessmen harmless and even socially beneficial is the pressure of competitive markets upon costs and prices. Where this pressure is absent for want of competitive markets, the argument is compelling either for militant anti-trust enforcement and consequently fragmenting of large corporations or for vigorous incomes policy. Since I take public support for radical anti-trust to be imperceptible but public approval of wage and price control to be substantial, I find economic logic and political feasibility in harmony.

Effective incomes policy in 1971 implies a good deal more than a revival of jawboning or even a combination of jawboning with the resurrection of the wage-price guideposts. Although there is growing evidence that the guideposts did have a perceptible anti-inflationary impact, they operated at their best in an era different from ours, a period which trailed after eight years of slow economic growth, three recessions, and high average rates of unemployment. Although the social costs of Eisenhower economic policy were too high to encourage repetition of the experience, it must be conceded that eight years of frugality certainly did rid Americans of inflationary expectations.

However, inflationary expectations remain a fact of life in the present. The need arises, therefore, for stronger medicine, in the shape of mandatory controls. My own preference combines a dash of Robert Roosa with a dram of J. K. Galbraith. Which is to say that to me it makes sense to freeze wages and prices for six months and employ the time to design a set of selective wage and price controls a la Galbraith. I share Galbraith's view that the place to impose the controls is where the markets are least free. This is of course administratively convenient: it is far easier to regulate *Fortune's* elite list of the top 500 industrial corporations and the unions with which they deal than it is to supervise myriads of small businessmen and merchants.

If the economy in 1971 is to move into a vigorous recovery, monetary and fiscal policy must march in step. It is almost certain that the prerequisite for such disciplined harmony of movement is administrative restraint of the key wage and price decisions. Such restraint will allay the inflationary fears of the central bankers and encourage the White House to persevere in its promise of budgetary stimulation.

The final component of successful post-Keynesian economic policy focuses upon employment. My co-panelist Dr. George Perry has recently conducted an important inquiry into recent changes in the Phillips curve trade-off between unemployment and inflation. The labor force is now composed of a growing percentage of female and young workers. Both groups suffer from higher than average unemployment rates. An implication of this demographic shift is the tendency of prices to stir menacingly at overall rates of unemployment which are unacceptably high, on the order of 5 per cent. A decade or so ago, the danger point was 1 or even 1½ per cent lower.

What follows is not the counsel of despair that we should give up on either employment or inflation. The moral is different. Sophisticated policy which successfully reconciles low rates of unemployment with successful price strategy requires attention to manpower as well as to incomes. Unfortunately the President vetoed a promising Congressional initiative, last session's attempt to authorize a modest number of public service jobs in hospitals, parks, museums, law enforcement agencies, and schools. Only a few years ago, President Johnson's automation commission estimated that there were over 5 million unfilled jobs in the public sector at existing levels of staffing and administration. In 1971 the number is unlikely to be smaller. A good public employment program would serve two desirable ends. It would alleviate the chronic manpower shortages to which public agencies are prey and it would cope with a component of unemployment peculiarly intractable to monetary and fiscal policies.

III

Briefly to recapitulate my four recommendations, I begin with the identification of a need for substantially more fiscal stimulus from the federal budget than the President contemplates. At a guess, a full-employment budget deficit of $10 billion would make a proper target. After Congress has done its work, I hope that Paul Samuelson will be moved to repeat the praise of your body which he expressed last year in the wake of Congressional additions to White House budget requests.

The rate of monetary expansion should rise to something over 6 per cent, possibly as high as 8 per cent.

An incomes policy fully equipped with sharp teeth is essential partly to mollify the monetary authorities, but still more to mitigate the inequities which attend continued inflation.

Finally, the assault upon unemployment must contain structural as well as aggregative elements, notably manpower training and public sector employment. As a Democrat I recall with a certain pleasure that the 1968 platform of my party incorporated a pledge to move toward a condition in which the federal government would become the employer of last resort. Even though the 1968 presidential race turned out badly, the voters were prudent enough to retain Democratic majorities in both houses.

It is something, I suppose, that that practical man, Mr. Nixon, has attached himself to an economic policy which was quite up-to-date two or three decades ago. This is not enough. The post-Keynesian universe demands attention to the facts of economic power and the circumstances of groups unable to protect themselves in markets partly free and partly privately dominated.

TESTIMONY OF ROBERT LEKACHMAN, PROFESSOR OF ECONOMICS, STATE UNIVERSITY OF NEW YORK AT STONY BROOK BEFORE THE HOUSE COMMITTEE ON BANKING AND CURRENCY, FEBRUARY 26, 1971

In preparation for my appearance before this Committee, I took the sensible precaution of examining the record of your Hearings on June and July of last year. As I suspected, I discovered that I was in the slightly embarrassing situation for an academic economist of finding myself in substantial agreement with two of your earlier witnesses, Dr. Robert Roosa and Professor J. K. Galbraith. I am consoled by the reflection that they are two of the wisest and most ingenious members of my profession.

Like them I judge that the best feasible incomes policy commences with a freeze of wages, prices, and, I would add, dividends. While the freeze is in force, the President, in consultation with leaders of the major private interests involved, should design a workable scheme of wage, price, and dividend regulation. The President shall be required to present his proposed plan of operation to Congress for approval. After such approval is registered, the President will be empowered to release from the freeze the vast majority of enterprises which operate in competitive markets. Remaining under control will be prices, wages, and dividends in industries dominated by large corporations engaged in bargaining with national trade unions.

Although I bring no new wisdom in support of these conclusions, old arguments remain persuasive. It is a hobby of conservative politicians and a majority of my professional brethren to exaggerate the extent to which the American economy is directed by free market forces. Although there is admittedly a sphere in which competition organizes economic activity and generates wages and prices, it is equally certain that the public utilities and much of manufacturing are organized as monopolies or oligopolies. And there are services, notably medicine, whose cost and fee structure has been decisively shaped by the professions capacity to regulate the training and inflow of new entrants, influence the running of hospitals, and determine the character of the medical marketplace.

Free markets produce socially tolerable results not because businessmen are particularly astute or exceptionally altruistic but because the pressure of rivalry curbs avarice and promotes efficiency. Such was the wisdom of Adam Smith. Such is much political and economic wisdom in 1971. A logical corollary is not always emphasized: in the many instances where markets are not competitive, the checks to avarice and the stimuli to efficiency operate with varying degrees of imperfection. It follows also that the price and wage policies which private market power allow are not necessarily in the public interest. The Nixon Administration's almost theological reverence for free markets leads its members to overlook the scarcity of such markets and the determination of many wages and prices by a comparatively short list of quite identifiable corporations, trade unions, and professional societies such as the American Medical Association.

Although the men of power who manage the affairs of such entities are less than totally insulated from demand and supply conditions in the markets where they hawk their wares, it is simple common sense to note that the price setters and the wage negotiators enjoy considerable discretion in the ways they choose to respond to their economic environment. Two illustrations underline the generalization. Bethlehem could rationally propose to raise structural steel prices over 12 per cent because it was protected by the knowledge that, faithful to ancient practice, the remainder of the industry would follow the price leader. Although the White House in what some suspect to have been a charade talked the increase down to 6 per cent or so, there remains something odd about any increase at all for an industry whose sales have been flagging and whose domestic markets have been invaded by agile foreigners, from whom the industry's leaders cry for protection. On the wage side, there are as usual the construction unions which, undeterred by 11 per cent unemployment among their members, have negotiated wage settlements in the 25 per cent range. Such behavior is not wicked. Market power enables the steel industry to choose a combination of higher prices and lower tonnage rather than a package of lower prices and larger tonnage. The construction unions exert similar power to select fewer jobs at higher wage rates in preference to more jobs at lower wages. One could very readily argue—indeed I do so, that neither steel nor construction supports a public interest which is much better promoted by lower prices, larger output, higher employment, and greater economic activity.

I draw a simple moral. Wherever private economic power threatens public policy, Congress and the President must take pains to regulate the people and the organizations which exert the power. The more concentrated the power is, the greater is the menace to public purpose and the more immediate is the necessity of public intervention.

II

For the reasons that immediately follow, I believe 1971 economic policy to be threatened by the probable exercise of private economic power.

Let us consider the character of 1971 needs and the responses to them by the Administration. In one of the more remarkable conversions of our day, Mr. Nixon has declared himself a Keynesian in economics. With the usual triumphant rhetoric, the President has promised the conutry many good things—notably GNP of $1,065 billion, less than 5 per cent unemployment by year's end, and 3 per cent inflation by the same date. As far as the outsider can judge, the success of these forecasts is premised upon a revival of consumer spending, the stimulus of an $11.6 billion federal deficit, and the cooperation of the Federal Reserve in the greening of America with new money and credit.

These forecasts are perilously close to wishful thinking or faith healing. The signs of a consumer boom are faint. The fact that Americans are squirreling away savings at historically high rates does not logically nominate 1971 as the year when they will resume their free spending habits. Apart from housing, the marks of an impending investment boom are equally difficult to decipher. And if an $18 billion deficit in fiscal 1971 failed to spark recovery, why should a smaller deficit in fiscal 1972 constitute economic salvation?

The most substantial hope of early recovery is in Congressional action to appropriate funds for such essential public purposes as education, housing, health, manpower training, and, almost most important of all, public service employment, substantially in excess of the President's request. Recovery and social priorities will both be promoted by such Congressional action. An appropriate target, I suggest, might be a full employment budget deficit of $10 billion.

The Administration's timid venture into fiscal expansion and still more Congressional action of this magnitude require for their success the cooperation of the monetary authorities. Yet it is implausible to expect Dr. Burns and his colleagues to enlarge the money supply at the 6–8 per cent rates that this much fiscal stimulus might require, if at the same time inflation fails to slow, or, as is highly probable, once more accelerates, as unions and corporations continue to wield in inflationary ways their discretionary powers.

The case for effective incomes policy does not rest solely upon the need to complement fiscal and monetary initiatives. In general private power cries for guidance and control by public authority. Moreover, inflation's inequities press hardest upon the elderly and the beneficiaries of public services. Within the context of immediate economic policy, I would flatly assert that rapid expansion of economic activity and speedy reduction of intolerably high levels of unemployment are equally unlikely events in the absence of the kind of wage-price regulation which soothes central bankers and encourages responsible legislators to enact the programs and appropriate the sums which serve the needs of recovery and the starved public sector.

III

Your Committee, I understand, is currently contemplating the extension of the stand-by powers over wages and prices which Congress last year granted the President. Notoriously Mr. Nixon has failed to exercise his right "to issue such orders and regulations as he may deem appropriate to stabilize prices, rents, wages, and salaries at levels not less than those prevailing on May 25, 1970." Of course, not having done so, he has been spared the pains of "making such adjustments as may be necessary to prevent gross inequities."

If Edwin Dale's summary of Administration attitudes in the February 14 New York Times is as accurate as it appears to be, neither persistent inflation nor the smoke signals sent up by Dr. Burns in his December Pepperdine College address has weakened the devotion of the White House to noninterference in private economic decisions. Apparently guidelines are out. In their absence jawboning will be confined to instances where the government can have direct influence through variation in tariffs and quotas, shifts in regulatory policies, or purchasing sanctions. Mr. Dale concluded his story with this depressing paragraph:

"In short, Washington is not going to bother the generality of Americans in their daily economic decisions. The Government is a little more 'active' than it was, but there is less there than meets the eye. Mr. McCracken is honest: 'Anything along this line,' he said last week, 'will be only a marginal contribution.'"

By my lights this is utter folly, the result of the attachment of economic fundamentalists to a vision of a society uncannily different from our own United States in 1971.

I am, therefore, led to wonder whether in the light of the President's aversion to price regulation simple extension of these stand-by provisions will serve anything other than the political purpose of attaching the blame of continued inflation to Mr. Nixon. As a partisan Democrat, I cannot find it in my heart utterly to denounce such a motive. Error deserves electoral punishment and as soon as possible.

Under the circumstances, it is apparent that if Congress wishes this year to take concrete action against inflation, its members will need to direct the President into a course of action which he detests—presumably not the first occasion that a Congress has imposed its will upon a President. As a Roosian and a Galbraithian, I am pleased to find the prescription for legislative action all but written for me. I quote with approval a portion of Dr. Roosa's testimony before this Committee on June 17, 1970:

"My own proposal is for a three-phase approach. And I would suggest that all three proceed simultaneously.

"The first is temporary freeze of prices, wages, rents, and dividends.

"The second, the initiation of an incomes policy.

"And the third, establishment—and this is a newer approach, something I at least have not suggested earlier—the establishment of what I am calling a 1970 version of the landmark of the late 1930's the Temporary National Economic Committee."

Dr. Roosa proceeded to suggest that the first phase, the freeze, last only a few months, that the second phase, incomes policy, endure 2–3 years, and the third mechanism, the TNEC-like inquiry, produce its fruits, "a fuller basis for improving the long-run functioning of the economy," by 1972 or 1973.

Taking into account the fuller record of Administration intransigence on this issue, I should adapt Dr. Roosa's program in the following fashion:

(1) Congress shall direct the President to freeze prices, wages, dividends, and possibly rents at the levels which obtained on February 1, 1971 or on such subsequent date as Congress prefers.

(2) The freeze will continue in effect until:

(a) The President after consultation with business, financial, and labor leaders promulgates a workable plan for the regulation of key private decisions which affect wages and prices;

(b) Congress approves the President's regulatory scheme;

(c) Congress appropriates the funds needed to administer incomes regulation.

(3) As long as the freeze lasts, the President will be empowered, as under the current legislation, to make "such adjustments as may be necessary to prevent gross inequities."

(4) The President shall promptly report to Congress the adjustments he makes pursuant to this authorization and the criteria which guided his decisions.

(5) Congress should authorize a new TNEC charged like its predecessor with sketching the map of private economic power, as well as with an additional mandate to design a long-run framework for the guidance of those who exercise private economic power. The Commission's membership should be drawn from Congress, the executive branch, and the public.

I do not offer this sketch of a policy so much as a panacea as a mode of experiment with a difficult problem.

No advanced industrial society has satisfactorily resolved the price-employment dilemma. It is worth noting, however, that for varying periods of time the Scandinavian countries, the Netherlands, and West Germany, have been able, following diverse strategies, to enjoy high levels of employment and reasonable approximations to price stability. It is tempting and possibly not entirely fruitless to wonder what our own experience would have been, save for the monstrous distortions of resources and activity imposed upon our land by a monstrous war. During the brief moment when the New Economics enjoyed its flirtation with public acclaim, circa 1961 to mid-1965, the American economy did expand steadily, prices barely stirred, and, as recent investigations suggest, the wage-price guideposts moderated the decisions of the powerful.

No one can know whether a continuation of those policies, possibly reinforced by statutory legitimization of the productivity guideposts, would have pointed the way to the reconciliation of price and employment objectives. Since no democratic society can calmly accept either high unemployment or serious inflation for any but a brief period, the search for better policy must continue. The collapse of Nixon Game Plan Mark I is a convincing demonstration of the imperfections of monetarist doctrine. The probable failure of Nixon Game Plan Mark II will pass a similar verdict upon the inadequacies of simple-minded Keynesian fiscal stimulus, unaccompanied by structural interventions into the places where private market power distorts national economic policy.

Since it is more important to rescue the pensioners, the unemployed, the schools, and other public services than it is to increase the prospects for the President's early surrender of his White House lease, I fervently hope that this Committee will report to the House of Representatives a strong legislative mandate for an effective incomes policy.

I thank the Committee for the opportunity to present these views.

NATIONAL PUBLIC EMPLOYEE RELATIONS ACT OF 1971

HON. ABNER J. MIKVA

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. MIKVA. Mr. Speaker, today I reintroduce the National Public Employee Relations Act, to provide basic collective bargaining rights for more than 10 million Federal, State, county, and municipal workers who have to date been denied rights we have come to consider as fundamental for working men and women.

Years of experience in the private sector have proven that labor, management, and the public interest, are best served when orderly, fair, and enforceable procedures are available for the peaceful resolution of employer-employee problems. This bill would do for public employees much of what the National Labor Relations Act did for workers in private industry, by guaranteeing the right to organize and to bargain collectively, and providing a framework within which those rights can be effectively exercised.

The major provisions of the bill are as follows:

The rights of public employees are defined to include the right to organize, bargain collectively, and engage in other activities for the purpose of mutual aid or protection without interference or restraint.

Employees are free to join a labor organization and any interference by an employer with the exercise of these rights is declared an unfair labor practice.

Provision is made for deduction of union dues from wages if authorized by the employee.

A 5-man National Public Employee Relations Commission is established to administer the provisions of the Act.

The Commission is empowered to oversee elections by which representation is determined.

A grievance procedure is established to resolve complaints of employers and employees alleging violations of the Act, with court review upon application of either party.

Provision is made for mediation and fact-finding by the Federal Mediation and Conciliation Service.

Once passed, the act would apply to all Federal, State, and local employees, but any State could by law establish its own procedures for public employee-employer bargaining which, if substantially simiiliar to the Federal law, would then apply.

Mr. Speaker, public employees in this country through no fault of their own have been bypassed by the rest of the fast-moving labor force. In 1935, Congress adopted the National Labor Relations Act, determining that the best guarantee of fair wages and decent working conditions was to allow employees to organize and actively represent and defend their own interests. How incongruous that these same reasons should not be applied to those who perform public services. While trade unions have provided untold benefits to millions, the public sector has been locked into an antiquated, bureaucratic freezer.

Those who oppose the idea of collective bargaining for public employees will inevitably object that the right to bargain collectively ultimately means the right to strike. Although this bill neither creates nor prohibits the right to strike, it should be noted that the present system has not avoided strikes by public employees, even though such strikes are illegal. What the existing practice has proven is that when no adequate mechanisms exist to protect the interests of employees and to speak to their grievances about wages, hours, and working conditions, even the threat of jail is ineffective to keep them at their jobs. Clearly all parties can best be served by a system which recognizes public employees as employees, with all the rights and responsibilities shared by employees in the private sector.

SCOUTING SURVEY OF THE CONGRESS

HON. CLARENCE J. BROWN

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BROWN of Ohio. Mr. Speaker, one of the most influential youth organizations in the free world and in America today is the Boy Scouts of America.

In this Nation more than 4½ million boys of Scouting age are members of Cub Scouts, Boy Scouts, and Explorers—one of every four eligible. The Cub packs, Boy Scout troops, and Explorer posts exist in every corner of the Nation, open to America's youth of every race, creed, and social and economic station. Each opens up to the young men in its area an opportunity for the leadership and character training that are the basic principles of the whole Scouting movement.

In addition to the boys involved in Scouting, the leadership opportunity involves more than a million and a half adults, dedicated to assisting America's youth to become better citizens through the programs offered in Scouting.

That Scouting can be one of the most valuable ingredients in the character and leadership training of our citizens is exemplified in outstanding fashion here in the halls of Congress. As during each of the past three Congresses, I have surveyed each new Member of the 92d Congress. The completed results show that 65 percent of all of the male Members of the current House and Senate have participated in Scouting, either as Scouts, volunteer leaders, or in both capacities. And if participation in Scouting can provide one measure of the quality of the legislative branch of Government—and I believe that it does—the quality for this Congress is higher by 1 percent than during the 91st Congress.

The results of my Scouting survey of the Congress have been turned over to the Boy Scouts of America for their use and distribution throughout the BSA organization and to others interested in the Scouting movement. As I have in the past, I also am inserting the results in the RECORD for use by my colleagues:

SURVEY OF 92D CONG., 1ST SESS., RELATIVE TO PARTICIPATION IN BOY SCOUTS OF AMERICA, CONDUCTED BY CONGRESSMAN CLARENCE J. BROWN, OHIO

	Representatives	Senators	Total
Scout (only)	156	37	193
Scout and leader	84	15	99
Leader (only)	43	6	49
No participation	139	41	180
Total eligible Members[1]	422	99	521
Women Members	12	1	13
Vacant	2	0	2
Total Members[1]	436	100	536

[1] Includes Puerto Rico Representative.

Total Members who have participated in Scouting: 341 (65% of eligibles).

Total who were Scouts: 292.

Total who were leaders: 148.

EAGLE SCOUTS

Senators Frank Moss, Utah (D), Richard Schweiker, Penn. (R), Lloyd Bentsen, Tex. (D), and Hubert Humphrey, Minn. (D).

Representatives: Bill Alexander, Ark. (D), Burt Talcott, Calif. (R), Victor Veysey, Calif. (R), Charles Bennett, Fla. (D), Roger Zion, Ind. (R), John Culver, Iowa (D), Keith J. Sebelius, Kans. (R), Larry Winn, Jr., Kans. (R), Patrick T. Caffery, La. (D), Gerald R. Ford, Mich. (R), John A. Blatnik, Minn. (D), and Durward Hall, Mo. (R).

John E. Hunt, N.J. (R), Barber B. Conable, N.Y. (R), Mark Andrews, N.D. (R), Clarence J. Brown, Ohio (R), J. William Stanton, Ohio (R), Tom Steed, Okla. (D), John R. Dellenback, Oreg. (R), Daniel J. Flood, Penn. (D), Bill Archer, Tex. (R), J. J. (Jake) Pickle, Tex. (D), John O. Marsh, Jr., Va. (D), and Henry S. Reuss, Wis. (D).

SILVER BEAVER

(Local Council Award for outstanding volunteer service)

Senators: Clinton Anderson, N.M. (D), Everett Jordan, N.C. (D), and Mark Hatfield, Oreg. (R).

Representatives: Del Clawson, Calif. (R), Larry Winn, Jr., Kans. (R), Durward Hall, Mo. (R), John McCollister, Nebr. (R), Page Belcher, Okla. (R), John N. Happy Camp, Okla. (R), and John Ware, Pa. (R).

SILVER ANTELOPE

(Regional Award for outstanding volunteer service)

Senator Mark Hatfield, Oreg. (R), Representatives Durward Hall, Mo. (R), and John Ware, Pa. (R).

CUB SCOUT DEN MOTHER

Representatives Florence P. Dwyer, N.J. (R), Louise Day Hicks, Mass. (D), and Ella T. Grasso, Conn. (D).

Scout denoted by "S"; Leader or Adult Volunteer denoted by "L"; Scout and Leader denoted by "S & L":

Alabama

Senator John Sparkman (D), S & L.
George W. Andrews (D), S.
John H. Buchanan, Jr. (R), L.
William Dickinson (R), S.
Walter W. Flowers (D), S & L.

Alaska

Senator Mike Gravel (D), S.
Senator Theodore F. Stevens (R), S, L.
Nick Begich (D), S & L.

Arizona

Senator Barry Goldwater (R), S.
Senator Paul Fannin (R), S.
John J. Rhodes (R), S.
Morris K. Udall (D), S & L.

Arkansas

Bill Alexander (D), S.
John Hammerschmidt (R), S.
Wilbur Mills (D), S & L.
David Pryor (D), S.

California

Senator Alan Cranston (D), S.
Senator John Tunney (D), L.
Alphonzo Bell (R), S.
Del Clawson (R), S & L.
James Corman (D), S.
George Danielson (D), S.
Ronald Dellums (D), S.
Don Edwards (D), S.
Barry Goldwater, Jr. (R), S.
Richard Hanna (D), S & L.
Craig Hosmer (R), S.
Harold Johnson (D), L.
Robert Leggett (D), S & L.
John McFall (D), L.
William Mailliard (R), S.
Bob Mathias (R), S.
Paul McCloskey (R), L.
John E. Moss (D), S.
Ed Reinecke (R), S & L.
John Rousselot (R), S.
Edward Roybal (D), S.
H. Allen Smith (R), S & L.
Burt Talcott (R), S & L.
Charles Teague (R), S.
Lionel Van Deerlin (D), S.
Victor Veysey (R), S & L.
Jerome Waldie (D), S.
Bob Wilson (R).

Colorado

Wayne Aspinall (D), S.
Donald Brotzman (R), S.
Frank Evans (D), S & L.
James McKevitt (R), S.

Connecticut

Senator Lowell Weicker (R), S.
Senator Abraham Ribicoff (D), S.

William Cotter (D), S.
Robert Giaimo (D), S.
Stewart McKinney (R), S.
Robert Steele (R), S.

Delaware

Senator J. Caleb Boggs (R), S, L.
Senator William Roth, Jr. (R), L.

Florida

Senator Edward Gurney (R), S.
Senator Lawton Chiles (D), S & L.
Charles Bennett (D), S.
J. Herbert Burke (R), S.
Dante B. Fascell (D), S.
Louis Frey (R), S.
Don Fuqua (D), S & L.
Sam Gibbons (D), S.
James Haley (D), L.
Paul Rogers (D), S.
Claude Pepper (D), S & L.
Robert Sikes (D), S.
C. W. Young (R), S & L.

Georgia

Benjamin Blackburn (R), S & L.
Jack Brinkley (D), L.
John Flynt, Jr. (D), S & L.
G. Elliott Hagan (D), L.
Phil Landrum (D), S.
Dawson Mathis (D), S & L.
Robert Stephens, Jr. (D), S & L.
W. S. (Bill) Stuckey, Jr. (D), S & L.
Fletcher Thompson (R), L.

Hawaii

Senator Hiram Fong (R), S & L.
Spark Matsunaga (D), S.

Idaho

Senator Frank Church (D), S.
Orval H. Hansen (R), S & L.
James McClure (R), S.

Illinois

Senator Charles Percy (R), S & L.
Frank Annunzio (D), L.
Leslie Arends (R), S.
Harold Collier (R), S.
Philip Crane (R), S.
Edward Derwinski (R), S.
John Erlenborn (R), L.
Robert McClory (D), S.
Ralph Metcalfe (D), S.
Morgan Murphy (D), S.
Roman Pucinski (D), S.
Dan Rostenkowski (D), S & L.
William Springer (R), S.
Sidney Yates (D), S.

Indiana

John Brademas (D), S & L.
William G. Bray (R), S.
David Dennis (R), S.
Lee Hamilton (D), S.
Elwood Hillis (R), S.
Andrew Jacobs, Jr. (D), S.
Roger Zion (R), S & L.

Iowa

Senator Harold E. Hughes (D), S.
Senator Jack Miller (R), S.
John C. Culver (D), S.
John Kyl (R), L.
Fred Schwengel (R), L.
Wiley Mayne (R), S.
Neal Smith (D), L.

Kansas

Senator Bob Dole (R), S.
Senator James Pearson (R), S.
Keith Sebelius (R), S.
Garner Shriver (R), S & L.
Joe Skubitz (R), L.
Larry Winn, Jr. (R), S & L.
William R. Roy (D), S.

Kentucky

Senator John S. Cooper (R), S.
Senator Marlow Cook (R), S.
William Natcher (D), S.
Gene Snyder (R), S.
Frank Stubblefield (D), S.
John C. Watts (D), S.

Louisiana

Hale Boggs (D), S.
Patrick Caffery (D), S.
Speedy O. Long (D), S.
Otto E. Passman (D), S.
Joe D. Waggonner (D), S.

Maine

Senator Edmund Muskie (D), S.
William Hathaway (D), S.
Peter Kyros (D), S.

Maryland

Senator Charles McC. Mathias (R), S.
Senator Glenn Beall (R), S.
Goodloe Byron (D), S & L.
Samuel Friedel (D), S.
Lawrence Hogan (R), L.
Gilbert Gude (R), S & L.
Clarence Long (D), S.
Paul Sarbanes (D), S.

Massachusetts

Senator Edward Brooke (R), S.
Michael Harrington (D), S.
Thomas O'Neill, Jr., (D), L.

Michigan

Senator Robert Griffin (R), S & L.
William Broomfield (R), S & L.
Garry Brown (R), S.
Elford Cederberg (R), S.
John D. Dingell (D), S & L.
Gerald R. Ford (R), S.
Edward Hutchinson (R), S.
Lucien N. Nedzi (D, L.
Philip Ruppe (R), S.

Minnesota

Senator Hubert Humphrey (D, S L.
Senator Walter Mondale (D), S.
Bob Bergland (D), S.
John Blatnik (D), S.
Donald Fraser (D), S.
Bill Frenzel (R), S.
Joseph Karth (D), S & L.

Mississippi

Thomas G. Abernethy (D), S & L.
G. V. Montgomery (D), S.

Missouri

Bill D. Burlison (D), S & L.
William Clay (D), S.
Durward Hall (R), S & L.
W. R. Hull, Jr. (D), L.
William L. Hungate (D), S.
William J. Randall (D), S.

Montana

Senator Lee Metcalf (D), S & L.
Richard Shoup (R), S.

Nebraska

Dave Martin (R), S & L.
John McCollister (R), S & L.

Nevada

Senator Howard W. Cannon (D), S.
Walter S. Baring (D), S.

New Hampshire

Senator Norris Cotton (R), S.
Senator Thomas McIntyre (D), L.
Louis C. Wyman (R), S.

New Jersey

Senator Clifford Case (R), S.
Senator Harrison Williams, Jr. (D), L.
Cornelius Gallagher (D), S.
James J. Howard (D), S.
John E. Hunt (R), S & L.
Joseph Minish (D), S.
Charles Sandman (R), S.
William Widnall (R), S & L.

New Mexico

Senator Clinton Anderson (D), L.
Manuel Lujan (R), S & L.
Harold Runnels (D), S & L.

New York

Herman Badillo (D), S.
Hugh L. Carey (D), L.
Barber Conable, Jr. (R), S & L.
John G. Dow (D), S & L.
Thaddeus Dulski (D), S & L.
Hamilton Fish (R), L.
James Grover, Jr. (R), S.
Seymour Halpern (R), S & L.
James F. Hastings (R), S.
Frank Horton (R), S & L.
Jack Kemp (R), S.
Carleton King (R), L.
Robert McEwen (R), S.
Otis Pike (D), S & L.
Bertram Podell (D), S & L.
Ogden Reid (R), S.
Howard Robinson (R), S & L.
John Rooney (D), S.
Henry Smith III (R), S & L.
Samuel S. Stratton (D), S & L.
John Terry (R), S.
John Wydler (R), S.

North Carolina

Senator B. Everett Jordan (D), L.
James Broyhill (R), S.
L. H. Fountain (D), S.
Nick Galifianakis (D), S.
David Henderson (D), S.
Walter Jones (D), S.
Charles Jonas (R), S.
Alton Lennon (D), S&L.
L. Richardson Preyer (D), S&L.
Earl Ruth (R), S.
Roy Taylor (D), S&L.

North Dakota

Mark Andrews (R), S.

Ohio

Senator William Saxbe (R), S.
Senator Robert Taft, Jr. (R), S, L.
John Ashbrook (R), L.
Jackson Betts (R), S&L.
Clarence J. Brown (R), S&L.
Samuel Devine (R), S.
William Harsha (R), S.
Wayne Hays (D), S&L.
Delbert Latta (R), S.
Clarence Miller (R), S.
William Minshall (R), S.
Charles Mosher (R), L.
Walter Powell (R), S.
J. William Stanton (R), S.
Louis Stokes (D), S&L.
Chalmers Wylie (R), S&L.

Oklahoma

Senator Fred Harris (D), S.
Carl Albert (D), S&L.
Page Belcher (R), L.
John N. Happy Camp (R), S&L.
Ed Edmondson (D), S.
John Jarman (D), L.
Tom Steed (D), S&L.

Oregon

Senator Mark Hatfield (R), S&L.
Senator Robert Packwood (R), S.
John R. Dellenback (R), S.
Al Ullman (D), L.

Pennsylvania

Senator Richard Schweiker (R), S&L.
Senator Hugh Scott (R), S.
Edward Biester (R), S.
Frank Clark (D), S&L.
Robert Corbett (R), S.
R. Lawrence Coughlin (R), S.
Joshua Eilberg (D), S&L.
Daniel Flood (D), S.
James Fulton (R), S.
Albert Johnson (R), L.
Joseph McDade (R), S.
Thomas Morgan (D), S.
Fred Rooney (D), S.
John Saylor (R), S&L.
Herman Schneebeli (R), S.
John Ware (R), S&L.
J. Irvin Whalley (R), S&L.
L. G. Williams (R), S.
Gus Yatron (D), S.

Rhode Island

Senator Claiborne Pell (D), S.
Robert Tiernan (D), S.

South Carolina

Senator Ernest Hollings (D), S.
Senator Strom Thurmond (R), S&L.
John McMillan (D), L.
Floyd Spence (R), S&L.

South Dakota

Senator Karl Mundt (R), SL.
Frank Denholm (D), S.

Tennessee

Senator William Brock III (R), S.

William Anderson (D), S.
Ray Blanton (D), S&L.
John Duncan (R), S&L.
Richard Fulton (D), S&L.
Ed Jones (D), S.
Dan Kuykendall (R), L.

Texas

Senator Lloyd Bentson (D), S&L.
Bill Archer (R), S.
Omar Burleson (D), S.
Earle Cabell (D), L.
Bob Casey (D), S&L.
James Collins (R), S.
John Dowdy (D), S&L.
O. C. Fisher (D), L.
Eligio de la Garza (D), S&L.
Henry Gonzalez (D), S&L.
Abraham Kazen, Jr. (D), S.
Wright Patman (D), L.
J. J. (Jake) Pickle (D), S.
W. R. Poage (D), L.
Robert Price (D), L.
Graham Purcell (D), L.
Ray Roberts (D), S&L.
Olin Teague (D), S.
Richard White (D), S&L.
James Wright, Jr. (D), S&L.

Utah

Senator Wallace Bennett (R), S.
Senator Frank Moss (D), S.
Sherman Lloyd (R), S&L.
K. Gunn McKay (D), S&L.

Vermont

Robert T. Stafford (R), S.

Virginia

Senator William B. Spong, Jr. (D), S, L.
W. C. Daniel (D), L.
Thomas Downing (D), S&L.
J. Kenneth Robinson (R), S&L.
David Satterfield III (D), S.
William Scott (R), L.
William Wampler (R), S.

Washington

Senator Henry Jackson (D), S.
Brock Adams (D), S.
Thomas Foley (D), S.
Lloyd Meeds (D), S&L.
Thomas Pelly (R), S.

West Virginia

Senator Robert Byrd (D), S.
Senator Jennings Randolph (D), S.
Ken Hechler (D), S.
James Kee (D), S.
Robert Mollohan (D), S.
John M. Slack, Jr. (D), S.
Harley O. Staggers (D), L.

Wisconsin

Senator William Proxmire (D), S.
Glenn R. Davis (R), L.
Robert W. Kastenmeier (D), S.
Henry S. Reuss (D), S. & L.
William A. Steiger (R), S.
Vernon W. Thomson (R), S.

Wyoming

Senator Gale W. McGee (D), S.

Puerto Rico

Jorge L. Córdova (New Progressive), S.

NIXON'S HEALTH CARE PLAN GLOSSES OVER PROBLEMS

HON. JOHN D. DINGELL

OF MICHIGAN

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. DINGELL. Mr. Speaker, pursuant to permission granted, I insert in the RECORD an excellent editorial appearing in the Saturday, February 20, 1971, Detroit, Mich., Free Press entitled "Nixon's Health Care Plan Glosses Over Problems." This excellent editorial on a clearly inadequate program to meet the Nation's health needs merits careful consideration:

NIXON'S HEALTH CARE PLAN GLOSSES OVER PROBLEMS

President Nixon's health care proposals would undoubtedly plug some holes in the present system of medical care, but they seem to offer relatively little that is new and constructive, and they raise some basic problems.

The goals of any change in the system of paying for medical care should be, it seems to us:

To provide more nearly equal access to good medical care.

To improve cost control.

To reorganize methods of delivering medical care to make them more efficient and effective.

To cover those kinds of services that now, even for persons with medical insurance, pose a major burden.

To finance the cost of medical care in the most equitable and tolerable method.

Mr. Nixon's plan has at its heart a government-mandated program paid for mostly by employers, partly by employes. A portion of the cost would be recoverable through income tax deductions, but the cost would pose a substantial added problem for small companies that do not now provide medical insurance programs. The plan would broaden coverage for many of those people who do now have medical insurance to include such things as preventive child-care medicine, plus a catastrophic illness feature.

In addition, Mr. Nixon would provide a government-financed program of protection for the poor, which would supplement the medicaid program now in effect. Its benefits would be slightly less generous than those for workers.

There are other features of the plan: The Medicare supplement (Part B) would no longer be charged to the elderly, but would become a part of basic Medicare costs, financed by an increase in the Social Security wage base. More generous government financing of medical education would be provided. There would be more money for cancer and sickle cell anemia research, and there would be a government effort to promote the use of health maintenance organizations that have been tried on a limited scale in this country.

These last programs are relatively noncontroversial, although the President is probably mistaken in his hope that preventive medicine can, at least for the short run, cut the cost of medical care.

But the main thrust of the program seems to us to be an ineffective answer to those who say we should push on to a comprehensive national health insurance program, and not a particularly attractive embellishment of the present system. Moreover, we suspect it would, by itself, add to, not diminish, the problems of cost control, efficiency and effectiveness.

Mr. Nixon's plan would seem to be subject to all the objections that would greet a national health insurance program without the same strengths.

The problems of cost control and efficiency would assuredly be present in a comprehensive national health insurance program. But Americans are paying more than some other countries and getting less impressive results (as measured by mortality rates, for instance). Britain and Sweden are both spending a significantly smaller percentage of their gross national product on health care and have better mortality records. Greater efficiency is possible.

The debate over what changes Congress can or should make in medical care financing will be long and technical this year. Mr. Nixon's approach will be considered with the others. But if we are indeed ready and/or able to act on a more comprehensive answer to health care financing than we have now, then it is likely that the President's program's weaknesses will be found to outweigh its strengths. Mr. Nixon has not provided a definitive answer by a long shot.

WHEN JOBS RUN OUT

HON. ROBERT N. C. NIX

OF PENNSYLVANIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. NIX. Mr. Speaker, Congress last year approved a public service bill tied to a comprehensive manpower training act which was vetoed by the President. A principal objection stated by the President at the time was that the legislaticn was inflationary. Just recently, the President offered a $2 billion a year manpower training program tied to revenue sharing which includes funds for public service employment for the unemployed.

Apparently what was inflationary last year has become more palatable this year in light of a soaring unemployment rate which is being felt most severely in the cities. I hope that the President's submission of a manpower training plan tied to revenue sharing will not cloud the fact that what the cities need now is immediate emergency employment relief—relief this Congress can grant without further delay.

The lack of employment for thousands of persons who want to work in Philadelphia should clearly illustrate why we must have such emergency legislation. I attempted to translate for the Select Subcommittee on Labor just what a cold unemployment rate statistic means to the lives of people in a statement submitted last Thursday, March 4. I insert the statement in the RECORD at this point:

REMARKS OF ROBERT N. C. NIX, PREPARED FOR THE SELECT SUBCOMMITTEE ON LABOR ON THE EMERGENCY EMPLOYMENT ACT OF 1971

Honorable Chairman and Members of the Subcommittee, today we are well along the road to a crisis in unemployment not unlike that which greeted President Roosevelt nearly four decades ago.

Time has elapsed, technology has improved immensely and the social structure of our society has changed, though somewhat slower than most of us would like to see. Yet the basic situation is the same: serious unemployment problems exist and especially in the large cities.

I am deeply disturbed by the January figures which show an unemployment rate of 6 percent nationally and 5.4 percent in my City of Philadelphia. Of course statistics, in cold isolation, must be translated into human terms to fully realize the seriousness of the present crisis. To state one city's problem more dramatically: there are 114,400 people in the City of Philadelphia who are seeking work and for whom no jobs are available.

It should be of little comfort to the distinguished Members of this Subcommittee to know that Philadelphia's rate of unemployment was slightly less than the national seasonally adjusted average for January, 1971. It is still high, Mr. Chairman, much too high.

It is under this set of serious circumstances that I appeal to you today for Federally sponsorsed emergency employment to provide work for those who want to work. We have a responsibility to see that they can.

At the same time, I agree with the statement of the Chairman that we must review existing manpower training programs and initiate what new measures may be necessary. But we must also, as the Chairman pointed out, provide temporary emergency employment until new programs can take effect.

Although I realize that it is speculative at this time to estimate what impact the Emergency Employment Act of 1971 would have on the City of Philadelphia, I have attempted to work out some rough figures.

Assuming that the funds would be apportioned equably and that state and local governments would bear 20 percent of the cost, Philadelphia would receive as much as \$17.2 million for public service jobs the first year should unemployment continue at a national seasonally adjusted rate of 5¾ percent or greater. In terms of numbers of jobs, this could go as high as 4,290 at an earnings rate of \$5,000 per person.

And what kind of employment would this be? As the Chairman pointed out last month, the National Commission on Technology, Automation and Economic Progress reports that there are 5.3 million potential public service jobs in such fields as education, beautification, welfare and home care, public protection, medical and health services, urban renewal and sanitation. Faced as we are with decay and deterioration of nearly all of our major cities, what type of employment could be of better use to communities across the country?

Last year we approved a public service bill tied to a comprehensive manpower training act after careful research by both Houses of Congress. Then, without warning, the Administration vetoed the bill, criticizing it on several points, all of which have been answered in this session's newly proposed legislation.

Let me briefly re-examine the rationale for the veto:

First, the Administration criticized the public service employment provisions as being permanent rather than temporary, and considered the conference bill unacceptable because it contained no provisions for cutting off Federal funding once the unemployment crisis has passed.

In answer to that criticism, members of this body, and the Senate as well, introduced new bills with trigger mechanisms to cut off funding when the unemployment rate recedes below a particular level for three consecutive months.

Secondly, the Administration objected to the conference bill on the grounds that the public service employment program was not linked with training or with the prospect of other employment opportunities outside of public service employment.

In answer to this criticism, bills in both houses now contain requirements that applications for financial assistance must contain assurances of efforts to provide linkages with continued or improved employment situations or training programs.

In addition the bills state that the Secretary of Labor shall not provide financial assistance for any program or activity unless he determines that the program will, to the maximum extent feasible, contribute to the occupational development or upward mobility of individual participants. This provision, above all others, gives the administration full range to approve only those applications which meet the administration's requirement of linkage of the program with other training programs or with the prospect of other employment opportunities outside of public service employment.

Having met these administration objections to proposed public service employment legislation, both Houses of Congress again invited the Secretary of Labor to testify, feeling confident, this time, of administration support. However, Secretary Hodgson testified in the Senate that he could again not support the legislation. But his reasons were just the opposite of his objections before.

Specifically, he said:

"We believe that the [emergency employment legislation] will detract from the effort to achieve lasting reforms. Rather than temporary legislation, I would hope we could join together to support permanent reforms which provide State and local governments with sustained resources to meet their communities' employment and job training needs—and in so doing better meet the needs of the nation."

But at the same time, he criticized this proposed legislation for being temporary, he also accused it of being permanent. He said, and I quote:

"Given political realities, one must question whether a program of such magnitude could be ended by either falling unemployment or impending statutory expiration."

In making this second statement, contradicting the first, Secretary Hodgson is in effect doubting two tautologies. On one hand, he doubts whether the program would be ended by falling unemployment when the trigger mechanisms specifically insure such an eventuality.

On the other hand, he doubts whether the arrival of the expiration date would indeed terminate the program. Obviously, the only way the program would continue is for it to be renewed or extended. If there is, at the time of the proposed expiration of the program, still high unemployment in this country, and no other legislation has been passed dealing with the problem, Congress might conceivably extend the program. However, there is no reason why Congress shouldn't, in the next few years, have ample time to draw up more permanent legislation to reorganize the entire Federal manpower program.

In addition to voicing rather groundless objections to the bill, and in addition to vacillating inconsistency and indecision as to what position they really want to take, there is reason to believe the Administration did not do their homework adequately before sending the Secretary of Labor to testify.

For, Secretary Hodgson said last week at the Senate hearings, and I again quote:

"It is questionable that \$750 million could be effectively utilized in what remains of this fiscal year."

In actual fact, no bill submitted by members of either house authorize for expenditure the amount of \$750 million between now and July 1, 1971. The Senate bill and the House bill similar to it provide for a maximum of \$750 million *in the first twelve month period after the enactment of this bill.* This maximum would be authorized only if the seasonally adjusted rate of national unemployment reached 5¾%. The Perkins bill, while it authorizes funds specifically for the period between now and July 1, limits the amount authorized to \$200 million.

With all due respect, I think that in view of the Administration's inconsistency, misinterpretation, and apparent indecision about the type of legislation they are willing to support, the only solution is for Congress to assume onto its own shoulders the responsibility for passing the legislation so vitally needed by loyal citizens at this crucial point in the economic history of this great country.

For I am committed to as low an unemployment rate as is feasible. Public service employment will be a means of helping to bring down our flying unemployment rate. It will provide a means of employing persons otherwise unemployed and keeping them in work until the economy regains enough strength so that they can find other jobs. At the same time, that they will be temporarily employed, they will be learning new skills or keeping old ones in tune. In addition, they will be making important contributions to the present and future of their communities in such environmental improvement areas as pollution control and conservation, housing and neighborhood improvement, rural development, and community beautification; and to the present and future well-being of the citizens of these communities in such areas as health care, public safety, recreation, education and transportation.

In short, I feel that immediate passage of this emergency legislation is mandatory if our constituents are to have faith in the ability of the Federal government to meet their urgent needs in periods of crisis. Congress is too often accused by the public of getting so bogged down in red tape and internal squabbles as to be considered ineffective and in need of circumvention in times of national emergency. This is one of those times. And I think it high time we pass this legislation and prove to the nation that we are indeed a most effective and at the same time a most consistent and concerned body whom they can rely upon to look out for and meet their urgent needs.

SUPPORT FOR VOLUNTARY MILITARY SERVICE

HON. HERMAN BADILLO

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BADILLO. Mr. Speaker, yesterday's Washington Post carried a very timely and perceptive article regarding the efficacy of implementing an all-volunteer armed force. This well-written rebuttal to earlier negative arguments was prepared by the former executive director of the President's Commission on an All-Volunteer Armed Force—the Gates Commission.

As the author, William H. Meckling, accurately notes, the Gates Commission—many of whose members originally were opposed to a volunteer army concept at the beginning—carefully examined all aspects of the problem, including those objections raised by Mr. Joseph A. Califano in his earlier article. Mr. Meckling has effectively countered the objections which have been raised on the basis of economics, national defense policy, sociology and moral aspects. I believe he has substantially contributed to belying many of the myths and fears to those who would oppose its establishment on these bases.

Mr. Speaker, I believe what Mr. Meckling has to say should be carefully considered by all of us and I am pleased to present his article herewith for inclusion in the RECORD:

THE CASE FOR AN ALL-VOLUNTEER ARMED FORCE

(By William H. Meckling)

(NOTE.—*The writer, dean of the Graduate School of Management, University of Rochester, is the former executive director of the*

President's Commission on an All-Volunteer Armed Force.)

In a recent issue of The Washington Post Mr. Joseph A. Califano has questioned the desirability of an All-Volunteer Armed Force on a number of grounds. Among other things he has alleged:

1. "It could make it too cheap and easy for national leaders to make the initial decision to wage war."

2. ". . . the draft is color blind as far as economic and social status are concerned." "It (voluntarism) is likely to produce a "poor man's army."

3. "The very concept of a highly paid volunteer army reflects the continuing erosion of the will to sacrifice particularly on the part of our affluent citizens." . . .

4. "There are other problems with the volunteer army, not the least of which are the enormous financial costs."

In its deliberations the Gates Commission considered these (to some extent contradictory) arguments as well as a number of other arguments against a voluntary force. Nevertheless the members concluded, "We unanimously believe that the nation's interests will be better served by an all-volunteer force, supported by an effective standby draft, than by a mixed force of volunteers and conscripts."

The members of the commission were neither timid nor uninformed, and they did not arrive at this unanimity easily. They developed a consensus through painstaking examination of the arguments pro and con, and they were especially conscious of the implications of facts that bear upon those arguments. If they had believed that the facts are as Mr. Califano (wrongly) believes them to be, none of them would have been willing to sign the report.

It is unlikely that any member of the commission would disagree with Mr. Califano's statement that "the decision to wage war is usually the most serious that any national leader makes during his public career. . . . There should be no cheap and easy way to decide to go to war. . . ." The problem is in deciding what method of procuring manpower provides a reasonable level of inhibition. Here past experience, but especially our recent experience in Southeast Asia seems more relevant than Mr. Califano's charges about the use of foreign aid to hire mercenaries. It is hard to imagine a war in which the initial decision was easier or cheaper for our leaders to make than it was in Vietnam. Without declaring war, the President had the power not only to commit the forces to combat, but, to expand them from 2.65 to 3.5 million men and to maintain that level—all simply by instructing Mr. Hershey to increase monthly draft calls. Would Mr. Califano seriously suggest that it would have been easier for the President to persuade Congress to appropriate the funds required to raise military pay enough to expand and maintain the forces in Vietnam on a purely voluntary basis? The Southeast Asia buildup was relatively painless and was accompanied by little debate in Congress in part because conscription conceals a fraction of the manpower costs. (It is worth noting that Mr. Califano's concern over the "enormous financial costs" of a volunteer force, and his concern that an all-volunteer force will make it easy for the President to initiate wars are contradictory.)

In discussing the standby draft, the commission report points out: "A standby system which authorizes the President to invoke the draft at his discretion would capture the worst of two worlds. On the one hand, it would make it possible for the President to become involved in military actions with a minimum of public debate and popular support. On the other hand, once the nation was involved, especially in a prolonged limited conflict, the inequities of the draft would provide a convenient rallying point for opposition to the policy being pursued." If the draft inhibits a President in any way, it inhibits his ability to prosecute a long limited war on foreign soil once he has gotten into it. The "irritant and inhibition of young men who do not want to be drafted" is not an instantaneous reaction and it did not appear in this case until long after the Gulf of Tonkin.

The thesis that "the draft is color blind as far as economic and social status is concerned" is based on a widely held misconception. Conscription has not and does not produce servicemen from all walks of life. Only 2 per cent of the enlisted force in the military in 1969 were college graduates, while 83 per cent were high school graduates. The vast majority of the enlisted personnel are high school graduates from lower-middle and middle-income families. A disproportionate share of children from affluent families can and do find ways to avoid the draft.

Moreover, these facts have not, and will not, change dramatically with the introduction of the lottery, or with elimination of the educational deferment. The affluent simply turn to other bases for avoiding service—medical deferments, conscientious objection, various legal stratagems, emigration, and ultimately outright definance of the law. The Selective Service System is now beleagured by these problems. It is naive to believe that any other outcome is possible under conscription. If only a fraction serve, the affluent will always be more effective in finding ways to be among those who do not.

What of the related allegation that an all-volunteer force is likely to be a "poor man's army," that will "be paid at a rate just high enough to attract those at the lower economic levels?" This is a question on which original views tend to shift dramatically when confronted by some basic facts. If there are already a large number of true volunteers in the services, i.e., enough to constitute 80 to 90 per cent of peacetime force levels, then converting to an all-volunteer force cannot significantly change the socio-economic character of our forces—a volunteer force cannot be predominantly drawn from the lower income strata.

It is widely believed that the military services are almost entirely staffed by conscripts and draft-induced volunteers. This is far from the truth. Our military forces will be preponderantly true volunteers even if the draft is continued. There are now in the military 1.25 million men beyond the first term of service; these men are all there as volunteers. No coercion whatever is imposed on them to remain in the service.

In addition, there are many true volunteers who are in their first term of service. The commission staff estimated that in 1968 there were another 750,000 true volunteers in this category making 2 million volunteers in all. While our figures for the number of first-term true volunteers was questioned severely when the commission report first appeared, enlistments last year among individuals with high lottery numbers, who had a high probability of not being drafted, have tended to confirm the commission's estimates.

Since we already have approximately 2 million true volunteers in the service, the socio-economic makeup of an all-volunteer force of 2.25 or 2.5 million men cannot be very different from that of a mixed force of the same size. All of whatever change takes place must occur within the group of 250,000 to 500,000 additional true volunteers, and there are good reasons for believing that the socio-economic character of that increment in a volunteer force will be much the same as in a mixed force. Draftees and draft-induced volunteers in a mixed force tend to be individuals to whom the cost of military service is relatively low. They elect to serve rather than bear the costs of avoiding conscription. Individuals to whom the cost is high have a strong inducement to avoid service in one of the ways mentioned above. Thus, many draftees and draft-induced volunteers in the mixed force are likely candidates to enlist when pay is raised to provide an all-volunteer force. In brief, it appears that the worst the volunteer army can do to the poor, is make at least some of them just a little bit less poor.

Concern that the affluent bear a fair share of the cost of defending the nation is one with which everyone can sympathize. The practical question, however, is whether such equity is more effectively achieved under the draft than with a voluntary force.

In this context, it is important to understand the real issue underlying the draft, namely, whether we will continue to impose a very large tax in the form of involuntary servitude on a small fraction of the population and thereby absolve the rest of society from contributing to a portion of the cost of defense. The Gates Commission devoted a full chapter of its report to this point. Mr. Califano, nevertheless, evidences great concern over the "financial costs" of an all-volunteer force and further states that he would prefer to spend the additional funds that a volunteer force would require on "urgent domestic needs." (It is not clear why Mr. Califano ignores the possibility of using the draft to get social workers, lawyers, educators and the like to provide the government services necessary to his urgent domestic needs programs.) As the commission pointed out, this argument confuses federal budget expenditures with costs. An all-volunteer force will provide more not less resources to satisfy urgent domestic needs. For example, the lower turnover of a volunteer force will reduce training requirements and reduce the time lost due to personnel changes. A volunteer force will also reduce the very substantial efforts now expended by individuals in trying to avoid military service. There are real cost savings; they conserve real resources which can be used to satisfy urgent domestic needs.

However, the additional budget expenditures recommended by the commission for a voluntary force—the expenditures on which Mr. Califano has designs—do not represent an increase in real resources used up in defense, therefore continuing the draft instead of moving to an all-volunteer force will not release any of them for Mr. Califano's purposes.

The increased budget for a voluntary army is simply a reflection of the tax-in-kind that the draft levies on first term servicemen. When an individual is required by law to render service for government at wages lower than those for which he would volunteer, he is paying a tax in the form of personal services, and this is true whether the service he renders is buildinf roads or fighting in Vietnam. Because the tax is paid in kind, government accounts never reflect either its collection or its expenditure. With a volunteer army, however, the accounts will reflect the full costs of military personnel, and reported government expenditures will thereby rise.

While the increased budget expenditures for a volunteer force do not reflect increased use of real resources, they do reflect a shift in tax burden. One of the important consequences of introducing a volunteer force will be to lift the conscription tax from first term servicemen and place it on the general taxpaper. It is here that Mr. Califano's concern over equity should be satisfied. Whatever its shortcomings, the general tax structure is surely more progressive than the highly discriminatory tax imposed by the draft. Thus, on average, the affluent will be forced to bear a larger share of defense costs under a volunteer force than they would with the draft.

As a final comment, we cannot resist the opportunity to recount a prerogative which one member of the commission invoked in discussion of these problems. He insisted that if discussants (a la Mr. Califano) persisted in calling volunteers "mercenaries," he had a right to refer to draftees and draft-induced volunteers as "slaves."

THE TRADE ACT OF 1971 AND THE DISC PROPOSAL

HON. JAMES C. CORMAN

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. CORMAN. Mr. Speaker, the Trade Act of 1970, as passed by the House last year, included what I consider a most objectionable provision—the Domestic International Sales Corporation—DISC—proposal—objectionable because I believe it would create a new form of tax loophole which the country can ill afford.

Recently I received a letter from Ralph Nader, in which he speaks out against the DISC proposal, especially reiterating his concern that it has been included in the 1971 version of the trade bill introduced the first day of the 92d Congress. Mr. Nader also sent me his letter of October 31, 1970, to Senator LONG, urging rejection of the DISC proposal.

I believe that Mr. Nader's views are worthy of the careful attention of every Member. They are the concerns of a highly respected man who has demonstrated his solicitude for the public interest, and I wish to include them here in the RECORD.

FEBRUARY 25, 1971.

The Honorable JAMES C. CORMAN,
203 Cannon House Office Building,
Washington, D.C.

DEAR CONGRESSMAN CORMAN: The Administration's Domestic International Sales Corporation (DISC) proposal has again been brought before the Congress. The DISC proposal represents an experiment in which the taxpayer is being asked to make a massive tax expenditure of a billion dollars and hope that this will result in increased exports.

The experiment is not worth the risk. It must be expected that, as a result of rational economic calculation, many businesses will pocket the DISC windfall benefits without engaging in new exports.

As was reported in the Wall Street Journal of December 1, 1970, page 7: "Charman [Russell B.] Long said the [Senate Finance] Committee decided that the [DISC] proposal would cost more than the Administration has estimated and 'wouldn't do nearly as much good as the Administration hopes.' "

Enclosed for your consideration is a copy of my earlier statement on that proposal.

Sincerely,

RALPH NADER.

OCTOBER 31, 1970.

Hon. RUSSELL LONG,
Chairman, Senate Finance Committee, Washington, D.C.

DEAR SENATOR LONG: The Administration's Domestic International Sales Corporation (DISC) proposal is currently under study by your Committee. That proposal is designed to promote export sales by virtually exempting U.S. exporters from income taxation. Instead, it will result in huge windfall profits for America's largest corporations, with an accompanying increase in the tax burdens borne by millions of small taxpayers. I urge your Committee to reject the DISC proposal.

The DISC plan is a typical example of the way in which a few powerful industry interests can successfully raid the United States Treasury by masking their intentions in the complicated language of a tax statute. DISC will allow tax-wise companies to set up dummy corporations to receive their foreign sales income. These shell corporations (known as DISCs) will not be subject to tax so long as they fulfill a multitude of technical requirements. A DISC's accumulated untaxed [1] profits can then be put at the disposal of the parent company through intra-company "loans" at low interest rates.

DISC IS A WASTE OF THE TAXPAYER'S MONEY

If the DISC proposal becomes law, it will cost taxpayers almost a billion dollars per year. Even the Treasury Department, an active proponent of the DISC idea, concedes that the revenue loss will be $630 million annually once the proposal is fully in operation. On the other hand, the dissenting members of the House Ways and Means Committee argue convincingly that the revenue loss will be over a billion dollars annually—especially if the U.S. exports continue to increase as they have over the last decade. DISC is a billion dollar boondoggle.

A billion dollars is over two thirds of the funds budgeted for the entire 1971 program of the Office of Economic Opportunity; over five times the budgeted amounts for the National Cancer Institute and the National Heart and Lung Institute; and 35 times as much as is budgeted for Programs for the Aging. President Nixon vetoed the 1970 education bill because, in his view, it was $453 million too high. DISC will cost twice as much.

THE AMERICAN PUBLIC WILL GET LITTLE IN RETURN FOR DISC'S HUGE TAX EXPENDITURES

The Treasury Department hopes that DISC will increase U.S. exports by from $1 to $1.5 billion dollars per year, with consequent benefits for the U.S. balance of payments. This estimate is necessarily based on guesswork and self-serving statements by those exporters who stand to gain if DISC is enacted. After considerable study, the staff of the Congressional Joint Committee on Internal Revenue Taxation found no basis for the Treasury's export gain estimates. More sober analysis sets the likely export gain at $315 to $480 million per year.[2] This is a pitifully small gain considering DISC's costs.

DISC's inherent structure makes it most unlikely that its adoption will lead to significant exports gains. The basic flaw is that DISC confers its benefits without requiring an exporter to increase his exports by even a single dollar. He will receive a huge tax benefit for simply doing what he is already doing.

In 1969, American exports totalled $36.5 billion. Even under the most optimistic Treasury estimates, these exports will not increase by more than four percent (1½ billion dollars) as a result of the DISC plan. This means that 96 percent of DISC's benefits will be squandered by paying businessmen to continue already profitable exports. Only 4 percent of DISC's benefits will relate to new export sales. This is the reason why DISC costs a lot, but yields few benefits.

Energetic corporations can be expected to squeeze ever-increasing fractions of their exports through the DISC loophole, until DISC finally shelters all export profits—on the whole $37 billion of sales—from US taxation.

DISC's inefficient incentive structure means that the American taxpayer will get little in return for the immense subsidy that will be granted to exporters through DISC. If we accept Treasury's optimistic figures regarding DISC's costs and benefits, it appears that the American taxpayer will have to pay a subsidy of 40 cents for each dollar of DISC-induced exports. And if we compare DISC's costs and benefits using a more realistic computation [3] we find that the American taxpayer will be required to subsidize DISC's by $2 for each $1 of increased exports. In either event, DISC is a bad bargain.

This inefficiency of the DISC proposal has aroused the concern of professional officials of the Treasury Department as well as the staff of your Joint Committee on Internal Revenue Taxation. They are also concerned because DISC introduces over a dozen new tax concepts, which will require considerable definition in a multitude of rulemaking and adjudicatory proceedings.

DISCS MAIN BENEFITS WILL GO TO A FEW GIANT CORPORATIONS, NOT SMALL EXPORTERS

The Administration claims that DISC will help smaller firms get into the export business. In fact, DISCs main benefits will go to giant, fully integrated corporations.

The Commerce Department estimates that about 100 of the largest U.S. firms account for over half of all U.S. exports. This means that over half of DISC's windfall benefits will automatically go to those same firms.

Moreover, under the proposed DISC pricing rules, a parent company may sell its export products to its DISC subsidiary at less than arms-length market prices. This means that profits can be shifted to a DISC and go untaxed, even though they are actually profits of the parent company. The larger the parent's profits, the more valuable DISC's benefits will be.

Fully integrated firms can shift profits into a DISC from the earliest stages of production. In contrast, firms that simply assemble parts made by others, or are otherwise unintegrated, will not be able to shift profits forward in this way. As a result, creation of a DISC will be much more valuable to large integrated corporations than to small processors that

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[1] Technically, DISC involves tax deferral rather than complete forgiveness of taxes. However, from an economic and fiscal point of view, there is no real difference between tax deferral for an indefinitely long period (as under DISC) and complete tax exemption.

[2] This calculation is based on a recent study by Hendrik S. Houthakker of the President's Council of Economic Advisors which concludes that the price elasticity of U.S. merchandise exports is about −1.5. This means that for each dollar of price reduction, only $1.50 of exports will result (which is only $.50 of actual new revenue.) Charitably, assuming that all of the tax subsidy will be passed on to overseas consumers in the form of lower prices, the Houthakker price elasticity figure means that exports will increase by a maximum of $480 million if the DISC proposal costs $955 million. If DISC were to cost $630 million as Treasury hopes, then the maximum export gains would be only $315 million. The speculation that DISC will alter the outlook of corporate executives toward export markets cannot, of course, be quantified in terms of increased export revenues. The Treasury Department has presented no proof that this psychological factor will result in increased exports, let alone an extra billion in exports.

[3] Even if we assume that all of the tax subsidy is passed on to overseas consumers as lower prices, the Houthakker price, elasticity figure indicates a return of only $.50 per dollar of tax subsidy. Indeed, that estimate is optimistic, not only because of the reluctance of corporate exporters to part with their windfall gains, but also because of the very real possibility that our overseas trading partners will retaliate against the Trade Bill. If import quotas are erected against U.S. products, the DISC incentive will be completely ineffective in increasing our exports.

have fewer manufacturing profits to shift to the tax-free DISC.

These factors add up to favoritism for large, fully integrated firms at the expense of unintegrated producers—a policy that runs directly contrary to DISC's professed goal of aid for small exporters.

DISC SHIFTS A HEAVY BURDEN FROM CORPORATE TO INDIVIDUAL TAXPAYERS

Under DISC, the ordinary taxpayer, including wage earners and retired persons, will have to pay an extra billion or more in taxes each year to make up for tax losses in the corporate sector due to DISC. Yet the Treasury Department argues that DISC is needed to increase the equity of the tax system! Treasury begins its equity argument by pointing out that overseas manufacturing subsidiaries of U.S. firms currently enjoy tax advantages that are not available to U.S. exporters. Treasury then proposed to end this tax discrimination by creating another, larger tax loophole for U.S. exporters.[4]

DISC actually involves a double inequity. First, it will open up substantial tax discrimination in reverse between U.S. exporters who choose to organize a DISC and the U.S. owners of foreign manufacturing subsidiaries. Second, and much more important, DISC will shift a tax burden amounting to $1 billion or more per year from corporations—especially large profitable corporations—to individual taxpayers. There is certainly no equity in that.

DISC'S COSTS WILL CONTINUE LONG AFTER OUR BALANCE OF PAYMENTS PROBLEMS HAVE BEEN SOLVED

Once adopted, the DISC plan is likely to become a permanent part of the tax law. Corporations will invest legal and accounting talent in restructuring their export sales to conform to DISC requirements and will adjust their financial plans in light of DISC's tax benefits. Therefore, once the DISC plan becomes firmly entrenched, it will be almost impossible to repeal it, even when our balance of payments problem has been solved.

Furthermore, as past history in this area indicates, there will be no effective public scrutiny of the DISC proposal to see whether it really results in significantly increased exports. If DISC were a direct cash subsidy instead of a concealed tax subsidy, it would be subject to periodic Congressional review. This will be impossible if DISC is permitted to become a self-perpetuating part of the tax code. At the very least, a time limit should be placed on DISC's benefits.

CONCLUSION

The alleged intent of DISC is to improve our balance of payments; however, the plan itself is extremely defective and the cost is appalling. This is especially so since the individual American taxpayer is being asked to subsidize this country's largest and richest corporations, which already account for the lion's share of the U.S. export trade. Moreover, even if the DISC proposal fails to be effective in increasing U.S. exports significantly—as seems likely—the taxpayer will nevertheless still be obliged to grant these new huge annual tax subsidies to American exporters. The present DISC proposal should be rejected decisively.

I would appreciate your comments and reaction to this analysis.

Sincerely,

RALPH NADER.

[4] Treasury estimates that foreign income taxes on U.S. owned firms are levied at a rate of about 39 percent, as contrasted with a U.S. tax rate of 48 percent. But under DISC corporate shells will pay no tax at any time in the foreseeable future on their retained profits; the result is that DISC offsets a 9 percentage point preference with a 100 percent tax exemption.

VOLUNTEER FORCE WILL RAISE MILITARY QUALITY

HON. WILLIAM A. STEIGER

OF WISCONSIN

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. STEIGER of Wisconsin. Mr. Speaker, the fear has been expressed by some that the personnel policy reforms related to the all-volunteer force will adversely affect the quality of our Armed Forces. However, Lt. Gen. George I. Forsythe, the assistant to General Westmoreland for a modern volunteer army, has stated that the all-volunteer force drive will actually raise training standards:

Getting guys off KP, grass cutting, garbage and furnace details is going to give the sergeant a full team to train for the first time in a number of years.

General Forsythe, who commanded the 1st Cavalry Division—Airmobile—in Vietnam, and also served as commanding general of the Infantry Center at Fort Benning, is acutely aware of the need for adequate training. However, on his visits to military bases he found large numbers of soldiers "up all night firing up furnaces" and others pulling KP. "These details destroy training," he added.

Of course, the only reason we have military personnel performing these chores is because the draft allows us to keep military pay so low that it seems cheaper to have military men cut the grass than to hire civilians. This false economy not only represents a serious misallocation of labor resources, but it is also an added burden on the underpaid GI. More importantly, the disruption such chores cause in the training cycle simply lowers the combat readiness of our Armed Forces.

I commend this item from the Army Times to your attention:

REMOVAL OF IRRITANTS TO UP VOLAR CALIBER

(By Larry Carney)

WASHINGTON.—Lt. Gen. George I. Forsythe says his all-volunteer Army drive is going to raise training standards—not lower them as some people have charged.

"Getting guys off KP, grass cutting, garbage and furnance details is going to give the sergeant a full team to train for the first time in a number of years," Forsythe told Army Times.

Forsythe is Chief of Staff Gen. Will Westmoreland's special assistant for the Modern Volunteer Army.

In his trips around the country, Forsythe says he generally starts his day off at 5 a.m. "to see who's up early."

At Fort Carson, Colo., Forsythe said, he found large numbers of soldiers "up all night firing up furnaces and others pulling KP." He said men on details like this are lost to a unit when it starts its training.

"These details destroy training," Forsythe said.

He said the problem is the same in summer when soldiers must cut grass.

Forsythe said these are the types of details the Army is trying to eliminate. "Soldiers join the Army to soldier, particularly in the combat arms."

He said a major goal of the volunteer Army drive is to "free the soldier of non-soldier duties. We're trying to return him to the sergeant so the sergeant will have a full team—not three-quarters or half of a team—to train," Forsythe said.

Forsythe said the Army has also been under criticism from parents about its new liberal beer drinking rules which permits the serving of 3.2 percent beer at the evening meal and in the barracks.

"Mothers charge this is permissiveness, that we're encouraging their sons to drink beer. They think that before this decision their sons weren't drinking beer," Forsythe told Army Times.

Forsythe said the new policy will encourage soldiers to drink beer in the barracks and dayrooms rather than off-post where they might get in trouble.

The general said the idea for liberalizing beer drinking rules didn't come from topside but from a command sergent major at Fort Benning, Ga.

In recalling the incident, Forsythe said the sergeant major told him that I would probably chew him out but that "one of the best things we can do to improve Army life is to permit beer drinking in the barracks and dayrooms."

"They drink in the barracks now illegally," the sergeant told the general. He added that if an NCO comes into the barracks and sees a soldier drinking beer he now has to take some punitive action against the man.

"If a man is old enough and man enough to be a soldier in his country's Army, we ought to trust him enough to have a couple of cans of 3.2 beer in the barracks. We deliver it to him on the fire base in Vietnam, why not let him drink it in the barracks back in the States?" Forsythe said.

The Army, the general says, plans to give more responsibility to the sergeant. "We're going to turn the entire team over to him. We're going to quit looking over his shoulder and stop telling him how and when to do it. We're going to give the sergeant a greater say in the promotion of his subordinates. How we're going to do it hasn't been worked out."

Around the Pentagon, Forsythe is fondly referred to as "that crazy general" for the many ideas and suggestion he's coming up with to improve the life style and training of soldiers. Forsythe says he may be a little crazy but it will take new ideas and suggestions and different ways of doing things to accomplish "our goals in an all-volunteer Army environment."

The general says his staff have gotten several thousand suggestions on how to improve Army life. Surprisingly, he said, the best ones are coming from the commanders and cost "very little money." He urges commanders to continue sending their ideas and suggestions to MVA office in the Pentagon.

Forsythe says he's not the entire volunteer Army show. "I serve General Westmoreland and he's the biggest booster of the concept," Forsythe continued.

The general took over his MVA duties last October after serving as Combat Developments Command CG for a year. In Vietnam, Forsythe commanded the 1st Cav Div (Airmobile) and later served a three-month hitch as CG of the Infantry Center at Fort Benning.

THE AWARD-WINNING SPEECH BY LARRY STROUD, MARCH 9, 1971

HON. FLOYD SPENCE

OF SOUTH CAROLINA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. SPENCE. Mr. Speaker, I have never lost faith in our young people or swerved in the least from my conviction that as a group they are the finest our country has ever produced. There are some, however, who have allowed themselves to become soured by the insane antics of a minority which often represents itself as the voice of youth.

Fortunately, there are still millions of young people like Larry Stroud, an outstanding University of South Carolina freshman who is from West Columbia, S.C., and one of my constituents.

Larry wrote and delivered a speech last year at a junior achievement banquet which has earned him the honor of being named to receive a George Washington Medal from Freedom Foundation. It will certainly be no mystery to anyone who reads Larry's work why he is being accorded this high honor.

Mr. Speaker, I am proud to represent Larry Stroud in Congress, as I am sure any Congressman would be. So that all my colleagues will have the opportunity to benefit from this very perceptive and valuable speech, I include certain excerpts which appeared in the West Columbia Journal, March 3, 1971, in the Extensions of Remarks at the conclusion of my comments:

SPEECH BY LARRY STROUD

The middle years of this century have brought forth a unique generation of men; men who have grown up in a world terrified by war; men who have toiled and labored through the lean years of the depression; men who have invested in America's greatest natural resources—its youth.

If men like Horace Moses and Theodore Vail, who had inspiration to start the Junior Achievement program nearly 50 years ago, could see their program now they would be proud to see the way their idea is working.

But let's also face the fact that only a relatively small number of young people take part in JA. What should be done about the rest of them? I would like to suggest a few ideas.

First, what is being said to the young people should be reconsidered and the person saying it should make sure he understands it himself. You know the old story about the dentist's children always having the poorest teeth, or the preacher's kids always being the worst behaved. Maybe some basic questions should be considered.

PURPOSE OF BUSINESS

For example, what would you say is the primary purpose of business? I think most of us would agree it's to make a profit. Some people say that is the only purpose of business. And there, in my opinion, is the first breakdown in communication . . .

It's not enough to say we're here just to make a profit. For one thing, it appears you're working only for the money, and anybody who works for money alone is a fool. We're also in business to serve the people of the country and of the world, to help people help themselves to a better chance in life, to provide the means whereby other people can do the creative work that brings satisfaction to their lives . . .

Second, we have to make more clear the advantages of our competitive system. Everyone agrees competition is a wonderful thing, especially if you win. But what if you lose? Some people think there should be no losers—no grades in school, no first prizes, no championships—because it may damage the ego of the loser. Others believe that too much competition in business is also a bad thing—that it's wasteful for the producer and confusing to the customer. In other words we ought to standardize and simplify. I believe they're both wrong.

They forget that under our system the man or the company that loses can come back stronger and tougher than ever before . . .

The free enterprise system has been tested and tried. Of course we don't want to make the mistake of thinking we have solved all the world's economic problems when the words "free enterprise" are pronounced. There is no magic in these words and it is not a perfect system. It's not claimed to be, but it's the best ever tried, and it works . . .

Study of world history shows that practically all of the fallen civilizations of the past—such as ancient Egypt, Rome, Babylon, Greece and Syria—began to decline and most of them actually fell during their most economically prosperous period. They declined when their armies were larger and better equipped than ever before in their nation's history. Why then, did these great civilizations decline, fall and finally disappear as such? Arnold Toynbee suggests the answer: Those great nations allowed their youth to become defiled—or they failed to pass on to their youth the high ideals, the basic values, the fundamental skills and the nobility of purpose which, in the first place, brought their nations to greatness. Thus the lesson of history is this: Our nation will begin to decline in strength and nobility of purpose, and could eventually fall, unless we take care to conserve and develop our most precious, and altogether indispensable resource—the youth of this nation.

ROCKING THE BOAT

Today's youth are rocking the boat. They are generating new ideas. They are seeking new values which have meaning for them. They have had a tremendous impact on the nation in the past few years.

But a small group of young people have gone beyond rocking the boat—they have gone overboard. They are going to the extremes in reacting to what they consider to be excessive materialism in this country, and they are aided by the vast publicity they get in the news media.

I am talking about the hippie with the bullhorn who has nothing to say but says is loudly enough to shout down even candidates for the presidency of the United States and to shut down campuses all over this nation. What a shameful abuse of the privileges of this great nation.

Somewhere this minute a revolution is taking place . . . Somewhere there lurks in the mind and heart of some man, or some nation, a hope of something better. That hope has been at the heart of many revolutions.

It is not at the heart of all the revolutions that sweep the world these days, for there are some who revolt just to be revolting . . .

Most revolutions just revolve. They throw out one set of bad guys for a set of good guys who become bad guys and who need themselves to be thrown out.

NO SCORE CARDS

The revolution that brought the American Republic into existence was not that kind. There were no score cards. You couldn't tell the good guys from the bad guys because this strange animal in the annals of history was a nation ruled by the people, by all the people. Not even ancient Greece could hold a candle to it.

It was a revolution that did more than revolve. It brought into existence something new—a new hope, a new dream, a new attitude. And as men stretched their spirits they found that freedom could take them to new heights. They found that they could do more, be more, create more. This way sprung a revolution in business. A system of free enterprise was born in which men invest their capital and themselves and compete with other men who invest themselves. This in itself became such a revolution that its effects still are being felt.

This revolution in business brought a revolution in industry and a revolution in labor and the revolution continues in its struggle to this very minute. . . .

NOT OF OUR MAKING

By now you must realize that a revolution is taking place that is not of our making. It does not build on our heritage. It seeks to destroy it. It does not see Americanism as a goal or a task of a dream. . . . It, too, is a new animal in the annals of history. It sees with eyes that are clouded with fear. This revolution hears with ears deafened by promises that cannot be kept. This revolution feels not with the emotion of love. It grabs and grasps at the world with the emotion of power and greed. . . . Clearly its proponents can be heard opposing this, condemning that, ridiculing, laughing, destroying, killing. It is a revolution that destroys without ever having a dream of what will be built on the wreckage. . . .

You are called to enter the laboratory of citizenship, where some mad scientists have created a citizenship that is explosive and destructive and dangerous. You are called on not just to enter the laboratory, but to continue the greatest experiment that was going on before these other revolutionaries came along. . . .

You are called on to create a society that will judge a man by his contribution and not by his color. You are called on to create a society that will judge itself by what it is able to condemn and control and destroy, but one that will judge itself by what it can give, by how it can govern and by how it can bless all people.

The laboratory you are in is the world.

Communism in its many disguises with revolutionaries on every continent is the mad scientist and communism will seek to weaken. Some of your own people will be deceived . . . but you, you must see with eyes that are not blinded by fear. You must see with eyes alert to danger. . . You must feel with all your being, with all your heart, that this still is a nation under God and that through you the experiment will continue, this experiment in freedom. . .

I offer a challenge to you expressed by the poet Robert Frost, entitled "The Road Not Taken".

"Two roads diverged in a yellow wood,
and sorry I could not travel both
and be one traveler, long I stood
and looked down one as far as I could
to where it bent in the undergrowth;

"Then took the other, as just as fair,
and having perhaps the better claim,
because it was grassy and wanted wear;
though as for that the passing there
had worn them really about the same,

"And both that morning equally lay
in leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

"I shall be telling this with a sigh
somewhere ages and ages hence:
Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference."

WASHINGTON REPORT

HON. WILLIAM E. MINSHALL

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. MINSHALL. Mr. Speaker, under leave to extend my remarks, I wish to insert in the RECORD my March newsletter.

WASHINGTON REPORT

Long-locked doors open—For the first time in its 106-year history the House Appropriations Committee this year is opening some sessions to the public and news media. Since the creation of this powerful committee in 1865, all meetings have been held behind locked doors. *At my suggestion Chairman Mahon (D-Tex.) has also consented to permit certain open sessions of the Defense Subcommittee of which I am top-ranking minority member. Included in these public hearings will be top-level witnesses from South Vietnam, including some field commanders.* Many times over the years I have gone on record in protest against needless, often politically-motivated, secrecy in government. All of us share an intense concern over Southeast Asia and over the direction our defense policies will take as we phase into a peacetime economy—and all Americans want and deserve to have the facts. I am glad the heretofore inflexible rule that all Defense Appropriations hearings be held in top-secret session has now been relaxed.

Eisenhower Coins: Order blanks for proof and uncirculated silver Eisenhower dollar coins will be available June 18th. Orders will be taken by the Mint starting July 1st, limited to five proof and five uncirculated coins. Each proof coin will cost $10, each uncirculated coin, $3. Order forms and instuctions will be available from commercial banks, post offices and my Washington office. Cupro-nickel dollars for general circulation through commercial banks will not be available until the end of the year.

MINSHALL BILLS

Although the first session of the new 92nd Congress has been unusually slow in organizing, I have introduced and co-sponsored a number of bills, many in areas that will be the subject of great debate and controversy. Copies may be obtained by writing to my Washington office. Among the bills are:

Consumer Protection: H.R. 922, date-labeling of all packaged perishable foods for freshness; H.R. 4716, establish an Office of Consumer Affairs, Consumer Protection Agency and other consumer protections.

Education: H.R. 1476, permit deduction of college expenses from personal income taxes; H.R. 3642, prevent forced busing of school children; H. Res. 105, create a Select Committee on Quality Education.

Health/Social Security: H.R. 925, create a Federal Medical Evaluation Board to test and regulate biological products, medical devices and drugs; H.R. 1477, restore to persons 65 or over right to deduct all medical expenses from income taxes; H.R. 1479, provide disability benefits for blind persons with at least six quarters coverage; H.R. 4960, Medicredit, health insurance coverage for all citizens; H. Res. 103, $10 billion for cancer research; H.R. 940, higher Social Security benefits for eligible married couples.

Law and Order: H.R. 920, suspend federal aid to colleges failing to quell riots as well as to teachers, instructors or lecturers who take part; H.R. 926, federal penalties for killing or assaulting firemen or non-federal law-enforcement officers when interstate laws are involved; H.R. 927, federal aid to urban police departments; H.R. 928, stronger penalties for federal crimes committed with firearms; H.R. 929, benefits for firemen and non-federal law enforcement officers killed or totally disabled in line of duty; H.R. 930, curb sales of mailing lists to pornographers; H.R. 1472, federal penalties against unlawful use of credit cards; H.R. 1473, remove U.S. Supreme Court jurisdiction over final judgments by state courts that an act or publication is obscene; H.J. Res. 430, create a Special Joint Committee on Security of the U.S. Capitol.

Pollution Control: H.R. 921, ban oil drilling in Lake Erie; H.R. 923, establish an Office of Noise Pollution Control; H.R. 931, construct spoil disposal facilities in Great Lakes; H.R. 932, establish an Environmental Financing Authority; H.R. 937, tax incentives to fight air, water and solid waste pollution; H.R. 1475 and 4360, ban dumping waste in navigable waters; H.R. 3138, ban nonreturnable soft drink and beer containers; H.R. 3139, eliminate polyphosphates from detergents; H. Res. 106, create a Committee on the Environment, plus several other measures to broaden and strengthen Federal regulatory and research endeavors.

Prisoners of War: H.R. 936, extend expiration date of power of attorney given by members of Armed Forces now missing in action or held as POWs; H.J. Res. 20, observe March 21–27 as "National Week of Concern for Prisoners of War/Missing in Action."

Taxes/National Economy: H.R. 939, raise personal income tax exemptions to $1,200; H.R. 1478, increase to age 16 child-care expense deductions; H.R. 4190, Federal revenue sharing with state and local governments.

Trade: H.R. 1474, prohibit transport of articles to or from U.S. aboard foreign vessels trading with North Vietnam; H.R. 3832, provide for orderly trade in iron and steel mill products to protect domestic industries.

Veterans: H.R. 3140, permit World War II veterans with National Service Life Insurance policies to convert to permanent policies with fixed premium rates.

Cleveland Office: 2951 New Federal Office Building 522–4382.

Washington Office: 2243 Rayburn House Office Building 202–225–5731 Zip: 20515.

STUDENT SETS EXAMPLE FOR TODAY'S GENERATION

HON. EDWIN B. FORSYTHE

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. FORSYTHE. Mr. Speaker, many Members of this House are participating in the excellent program, "A Presidential Classroom for Loving Americans."

Recently, the first group of students participating in this program from my district in New Jersey visited with me in my office.

I was impressed with their attitudes and sincere desire to learn about those who formulate government decisions—to learn as much as possible before making their own judgments.

Moreover, I was extremely proud to have received a letter from one of the young men, Jack L. Calkins, of Cherry Hill, N.J. I would like to share it with you, since I believe it reflects well upon today's generation of youth; those who will be guiding our Nation once we step aside.

The letter follows:

MARCH 1, 1971.

DEAR SIR: I wish to express my thanks for allowing me to meet you and to discuss with you your duties, views and insights into the office you hold, while I was in Washington, D.C. Your time was well spent in helping me to gain a true insight into the House and Washington in general. Also, your staff was quite helpful in everyway and perfectly candid in answering all of our questions. Comparing the responses other students received and didn't receive in A Presidential Classroom for Loving Americans, I can say I was quite fortunate to have the Opportunity that I did. This may certainly be a credit to you and your staff.

I came away from the discussion group at Cherry Hill East last October rather disappointed in both of the candidates' performances. However, in talking with you and realizing more of the true difficulties of the office (and benefits, in some cases) I was impressed, not only by your views but also by your proposals. Young people today, from impressions I received at Presidential Classroom, are very concerned with social problems—yet seem to have unrealistic views about the means by which to resolve these problems. I saw also a large amount of intolerance to conflicting opinion and an almost self-righteous indignation on the part of many. This all points to a lack of knowledge on their parts. In the area of government and the legislative body, in particular, the means and procedure of change are misunderstood. This should be the saving grace of Presidential Classroom—the intimate exposure to the machinery of change and a close inspection of its goals and products. Yet, if one does not understand this machine (or refuses to), value judgments upon its products are singularly arbitrary. Hopefully, each student should discover the goals of Americans to differ and accordingly the resulting legislation reflects this.

Elimination or alteration of the machinery will not change these goals nor, inevitably, the product. Truly, this program should serve to present the Legislative Branch as a machinery of compromise, considering all points of view and from these producing, in the final result, legislation representing the country as a whole. This is what I learned as did, I hope, many more of my fellow students.

Thank you again and please place me on your mailing list.

JACK CALKINS,
Alumnus: A Presidential Classroom for Loving Americans, 1971

GENERAL REVENUE SHARING: A RESPONSIBLE SHORT-RUN ANSWER TO THE FISCAL CRISIS

HON. FRANK HORTON

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. HORTON. Mr. Speaker, a great and heated debate is taking place in America over the best means to solve the growing revenue crisis which threatens to bankrupt many States and hundreds of cities, counties, towns, and villages.

The revenue crisis at the State and local levels has, particularly after a period of economic sluggishness, created loud and well-justified demands on the part of thousands of American families that government spending at all levels be more closely controlled, and that programs like welfare and publicly subsidized medical care, which have skyrocketing budgets, be reformed in ways which will permit them to be controlled.

Despite the fact that Federal taxes on individual citizens have been reduced twice since the start of this administration—first, by elimination of the 10-percent surcharge, and second by stepped-up increases in the personal exemption to $625 in 1970 and higher in future tax years—these reductions have all but been consumed from the taxpayers' standpoint by increasing revenue demands from State capitals and local governments.

Part of the fault for the present crisis lies with the fact that the States and localities are saddled with an unmerciful negative, and self-multiplying welfare system which has ballooned State and local budgets to a point far out of the reach of the reasonable tax resources available to these levels of government.

By adopting a totally new welfare law and structure in the 91st Congress, we could have at least provided a start toward a long-term solution to this crisis. But, regrettably, the Senate delayed and then finally killed the welfare reform proposal which we in the House adopted in 1970. Our efforts to reshape and retool welfare must continue at an accelerated pace. There can be no excuse other than neglect of the people if the 92d Congress adjourns next year without passing a comprehensive welfare reform bill, which provides for work incentives, provides for controllability of the welfare program, provides work for those who can work, and provides relief to States and localities which now are bearing tremendous administration and benefit costs in operating the current welfare octopus.

Unfortunately, the financial crisis facing States and local governments can no longer await the passage of welfare, medicaid or any other reform measures. The specter of unbearable tax burdens, and of bankruptcy of many governments is a real and an immediate one. We must take the necessary steps to lay the groundwork for a long-term solution of this fiscal crisis, preparing for the day when strict spending priority judgments exercised in a context of reasonable taxes and controllable program costs can guide every level of government and avert catastrophe. But we now are also faced with the necessity of taking some short-run steps to meet the current crisis.

One reasonable and quickly available short-run solution is general revenue sharing. The general revenue-sharing concept recognizes the fact that the Federal taxing structure is more equitable, broader-based and more productive of revenue than taxes at lower levels of government. There is no question that any revenue-sharing concept carries with it a built-in problem—the problem of allowing State and local governments to spend money which has been raised through Federal taxes, and not through taxes for which State and local legislators are responsible. Ideally, it would be better if each level of government could raise the taxes it needs to operate effectively and efficiently and to provide needed services and thus be responsible for spending only what is raised through its own taxes. But it is precisely the failure of this ideal which has brought on the present crisis. Frankly, I believe that if some States had followed more enlightened taxing policies, at least the severity of the present crisis would be lessened. However, even in States where both progressive and regressive taxes have been levied at high levels, inflation and the costs of uncontrollable public assistance programs have precipitated an extremely serious tax-cost pinch.

A general revenue-sharing program, responsibly drafted and administered would be a quick and efficient means of meeting this crisis. It is not unreasonable, considering current changes in Federal budget priorities toward domestic concerns, to share between 2 and 5 percent of Federal revenues with other levels of government. This short-run solution should not be enacted to bail out State and local officials, but in honest recognition of the fact that the costs of government at the State and local levels have almost universally outstripped both the ability and the willingness of taxpayers to pay higher proportions of their incomes in taxes. No one pretends that revenue-sharing dollars do not come from taxpayers' pockets—they do. Revenue sharing is merely an efficient way to put these tax dollars where they are needed most to avert a national crisis.

I have sponsored the administration's general revenue-sharing bill in this Congress, as I did in the last Congress, and I will work with all of my energy for its passage.

Mr. Speaker, at this point, I would like to share with our colleagues some of the statements I have made in my own congressional district to point out the wisdom and the effects of general revenue sharing. By including these in the RECORD at this point, I am hopeful that other colleagues will recognize the strong support and the strong need for this measure, which I have found in evidence in the 36th District of New York:

FEDERAL REVENUE SHARING: A TOOL TO ACHIEVE FISCAL STABILITY IN LOCAL GOVERNMENT

(By Congressman FRANK HORTON)

Setting new records is as American as baseball and apple pie. Unfortunately, our cities and towns are setting new records every year—record costs of providing essential services to their people. These costs have reached the crisis point.

The demands upon state and local governments for services are increasing at a faster rate than they can raise revenues for these needs. Government must be efficient and should cut excessive spending but we must remember that the levels of government closest to the people should also be the most responsive to the needs of their people.

Emphasis today must be placed on the costly process of rebuilding deteriorating urban areas, expanding overcrowded education facilities, providing adequate housing and health care for middle and low income families, combating crime in the streets and meeting the highway, mass transit, water and sewer needs of our suburban and rural communities. State and local governments by themselves don't have the capacity to raise the funds required to meet these demands.

Traditionally local government has depended on property taxes, and more recently sales taxes, to finance local service. The skyrocketing cost of schools, welfare, sewer and water facilities, police and fire protection makes it obvious that the local government with its limited taxing authority can no longer carry this burden alone.

During the 1960's, states across the country made over 300 increases in major taxes, either enacting new ones or raising existing rates. Despite these efforts to assist local government, the financial structure is severely strained.

Property taxes for local and school revenues have reached the breaking point. The simplest, most direct and most equitable way to provide this help is through revenue sharing by the Federal Government.

The Federal Government has long recognized the gap between public need and resources. So far, it has helped close the gap through a growing list of categorical grants in aid to state and local government. That list includes more than 500 separate and uncoordinated aid programs which fill 1,000 pages in the Catalog of Federal Domestic Assistance.

We need better systems for delivering Federal assistance programs and better methods of fiscal assistance. Since coming to Congress, I have proposed revenue sharing legislation. In October 1969, I cosponsored a bill proposed by the President to provide an annual $5 billion in Federal revenue sharing.

Governor Rockefeller, who has given strong support for revenue sharing, met recently with the New York Congressional delegation to emphasize the serious financial crisis in our own state. He has urged a $10 billion a year program.

Under the President's revenue sharing proposal, a percentage of the Federal individual income taxes would be returned to the states and each municipality. Distribution would be based on population and on the taxing efforts of the individual state and locality, thus encouraging and rewarding the most effective use of local taxing powers.

Through an innovative revenue sharing plan, the Federal Government can create a true partnership among the levels of government. This partnership can be a start toward providing localities with the resources they need to solve their own problems and to restore fiscal stability.

TEXT OF CONGRESSMAN FRANK HORTON'S STATEMENT ON CITIZEN CONCERN ABOUT THE RISING COSTS OF GOVERNMENT

I spent several days this week visiting and meeting with constituents in the 36th District. Without qualification, the overriding concern of people I talked with is the crisis in the costs of government.

Rising calls for services and increased demands on the pocketbook of each citizen have taken their toll. Even though Federal taxes have been reduced by removal of the 10 percent federal income tax surcharge and by an increase in the personal exemption to $625, the problems of State and local governments have all but erased these reductions.

Many people spoke to me about their support of Federal revenue sharing with the states. Almost everyone expressed a desire that government officials exercise the greatest kind of care in sorting out spending projects and priorities.

While revenue sharing is not a panacea that will solve overnight the revenue crisis for states and localities—it is a desperately needed measure if today's fiscal emergency is to be solved.

HORTON OUTLINES WHAT REVENUE SHARING WOULD MEAN TO MONROE AND WAYNE COUNTIES

WASHINGTON, D.C.—More than $8 million would be available to Monroe and Wayne Counties in the first year under President Nixon's proposed revenue sharing plan, Congressman Frank Horton announced.

"Allocations would amount to $7.9 million to Monroe County and its towns and cities for the first year and $282,000 to Wayne County," Horton said. "The State of New York would receive over a half billion dollars."

Horton, who sponsored the Nixon general revenue sharing bill which would make these funds available, noted that final figures will be even greater since these estimates are based on the 1960 census.

A breakdown of the figures for Monroe County shows the following: City of Rochester, $3,413,461; Towns, $852,958; County, $3,720,625.

For Wayne County the amounts are: Cities (Villages), $71,210; Towns, $87,594; County, $122,905.

"These funds would be of considerable help to localities and to the state government in meeting their increasing financial burdens," the Congressman said. "If revenue sharing is to be enacted, however, there must be a groundswell of support at the local level."

RELINQUISH TAX SOURCES, NOT FUNDS

HON. EDWARD J. DERWINSKI

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. DERWINSKI. Mr. Speaker, a very interesting and I believe accurate analysis of the basic question in Federal revenue sharing was contained in an article Thursday, March 4 in the Suburban Life by Washington columnist, Paul Sisco.

We must not lose sight of the fact that there are continuing complications when the Federal Government has a disapportionate share of taxing power in that commitments to share the funds could, from time to time, fail to meet the expectations of State and local governments.

Mr. Sisco emphasizes a very basic question involved in our present tax structure.

The article follows:

RELINQUISH TAX SOURCES, NOT FUNDS

(By Paul Sisco)

WASHINGTON.—The question of federal tax money and whether any of it will be going to the states and cities without any strings attached is building up as a major campaign issue for 1972.

Federal revenue sharing is the name generally applied to the proposal that the Congress appropriate bloc grants to states according to their populations, without much in the way of strings attached.

President Nixon, in effect, has proposed that some $5 billion be alloted at this time.

There is no question that the nation's major urban centers, and yes, smaller cities, too, are having trouble making ends meet.

Three years ago, the National Urban Coalition was formed to help the cities, then suffering riots and worse in the wake of Martin Luther King's assassination.

Recently, Sol Linowitz, the head of the Coalition, said cities, although they are not burning, are in far worse shape today than they were during those days of riots.

Gov. Richard Ogilvie pulled into the Washington area a full day before the start of a national governors conference just to attend a Coalition meeting on the problems of the cities.

"There is no question that the federal government must help bail out the cities," Ogilvie said.

The hangup is that Congress doesn't like to pass out money without getting some assurance that the money will be spent wisely. In general, the record of states and cities in handling federal sums has not been good.

In addition, the argument is made that there are plenty of federal laws on the books for enterprising local communities to gain their share of federal revenue. The difficulty often is that there are so many complex procedures involved before the local community can get federal help.

Perhaps the answer is for the federal government not to relinquish tax moneys after it has collected them but to give some of the sources of the taxation.

In other words, don't increase taxes on individuals but change the split in the pie at the source, when the taxpayer makes out his tax return.

Meanwhile, President Nixon has shoved the Democratic-controlled Congress in a corner. Congress won't pass a meaningful federal revenue sharing bill and Mr. Nixon will use that as a campaign theme next year.

FREEDOM—OUR HERITAGE

HON. JOHN J. RHODES

OF ARIZONA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. RHODES. Mr. Speaker, each year the Veterans of Foreign Wars of the United States and its Ladies Auxiliary conducts a Voice of Democracy Contest. The contest theme was "Freedom—Our Heritage." Over 400,000 students participated this year.

The winner from my State of Arizona, is a young lady from my district, Miss Shauna Levie, of Phoenix.

The content of Miss Levie's speech, I believe, deserves publication in the CONGRESSIONAL RECORD. She speaks of freedom as a share in the "most valuable corporate enterprise in the world," the United States. She speaks of the rededication of every citizen for the ideals which our Nation stands for, of the repurchase of this right to remain free and of the constant vigilance which we must maintain to preserve this heritage. These words have a special ring to each and everyone of us at this time of our history. It is indeed refreshing and heartwarming to read the contents of Miss Levie's speech which I insert at this point:

FREEDOM—OUR HERITAGE

Have you ever dreamed of owning a share in the most valuable corporate enterprise in the world? Was there a time you wished you were a wealthy shareholder, having stock in one of the greatest corporations in America? You need not dream any longer, your wish has come true! Open your eyes! Look beyond the material wealth and discover the richest possession you own. Your freedom.

Throughout the course of history, the stock market of freedom has fluctuated widely. The charter for freedom of the United States was layed, when in 1776, our forefathers signed their names to the Declaration proclaiming their independence from Great Britain. Their liberty and freedom was purchased by great sacrifice of blood. The cost of just one share in this enterprise was the utmost farthing, the price of human life.

Danger of collapse threatened and appeared imminent when the new nations was divided in a great Civil War testing, as Abraham Lincoln once said, "whether that nation or any other nation so conceived can long endure." From this great conflict unity and freedom emerged as victors over division and bondage, and the nation yet young was reunited and recovered painfully but completely.

Over a century has now passed during which countless men of courage have, in world conflicts, repurchased this right to remain free. They have invested their very lives in this great American enterprise of freedom, and have passed on to us the heritage of life, liberty, and the right to pursue happiness.

Can we afford to let our premiums lapse? We must now cherish this bounty that has been purchased and preserved as our inheritance.

We cannot safeguard this heritage of freedom as we would a precious corporate security in a safe or vault. This gem of freedom is one, as Mathew tells us in Chapter 6, Verse 19, that Moth and Rust, doth corrupt, and that thieves break through and steal.

It may be taken from us by violence, dissent or even without struggle, by those advocating anarchism or Marxist communism. It need not, however, be lost by force or by default, but we must pay the premium! The price of freedom is eternal vigilance.

The price we must invest may be small in money. The real cost is a full measure of our devotion, dedication and loyalty to law and order, justice for all, and the principals upon which freedom is founded.

What can we, as future parents do to preserve and insure this heritage of freedom for our children? First and foremost, we must provide homes where love and devotion towards America is taught. It is essential that they grow up realizing what a vast opportunity has been given to them. Loyalty to law and order must be taught and observed by all family members, in both words and actions. Young boys need to be told from their youth that they might some day be called to fight for the preservation of the liberty and freedom of America, and it is their responsibility to serve when called. So we see that our children also must pay the premiums. But it is our responsibility to help and teach them.

It is incumbent upon each generation to purchase anew this freedom in order to insure it for their posterity. Open your eyes! Look beyond the material wealth and discover the greatest possession you own! Your freedom.

COURAGE VERSUS COWARDICE

HON. EDWARD J. DERWINSKI

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. DERWINSKI. Mr. Speaker, a very timely and forceful editorial emphasizing the value of our religious beliefs and the emphasis on respect for government was carried Wednesday, March 3, in the Tri-City Advertiser of Dolton, Ill.

This editorial commentary in my opinion is a very dramatic expression of grass roots American thinking.

The editorial follows:

COURAGE VERSUS COWARDICE

In the midst of increasing turmoil in this country and the world, cf which all of you must be aware, this seems to be an appropriate time to call attention to an institution that has existed for almost a century, with a steadfast purpose and a definite goal to attain.

We refer to the World Day of Prayer. Locally, for Riverdale, Dolton and South Holland this will be celebrated Friday, March 5 at 1:30 p.m. at the Ivanhoe United Methodist church at 145th and Clark streets, Riverdale.

We are informed that this is the 84th year of this celebration and that it is sponsored by the National Ecumenical Assembly of Church Women.

A special program has been planned and priests and ministers, members of the Riverdale-Dolton Ministerial Association will participate to make this an event in which all residents of all faiths are invited to participate.

Regardless of the reader's religious beliefs, we are certain all will agree that this non-violent celebration, in a quest for some answer to the violence of the age, is useful, meritorious and worthy of our attention.

Now—look at the other side of the picture and try, if you can, to examine the purpose and goal of those who participate in anarchistic acts seeking to instill fear instead of courage, conflict instead of peace and cowardice instead of bravery to face the issues which never were unsolvable.

In a vain attempt to stop a war, never started by the men presently in charge of government, these anarchists resort to the same violence, death and punishment by destructive methods, the destruction of property belonging to all the citizens of our land, as are employed in the very war they seek to stop.

We agree with statements made by many to the effect that the war in Indo China and Asia never should have been started. We are in tune with those learned men, now dead, who said we will never understand the Asian mind. But to try to end a war by the same methods now prevalent in the present conflict seems to us to be a useless and senseless theory.

You need not be informed of the fact that the action of the anarchists is based on cowardice, deception and a distinct lack of what we call back-bone.

These acts are performed anonymously. They phone in secret, act in secret and obviously must be convinced in their own minds that they can go on forever intimidating what they must assume to be a spineless, scared-to-death, weak and timid people.

And you will note, most of them, after their purpose has been detected, flee to distant lands in the hope that the hands of lawful men will not lay hold on them.

They are mistaken theorists.

They are cowards and skunks and the sooner they carefully apprehend that our country is made up of many who understand that it takes courage to face not death—but life, unflinchingly, the sooner they will come to their inevitable end.

THE PRESIDENT, CONGRESS, AND SOUTHEAST ASIA

HON. BOB BERGLAND

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, March 9, 1971

Mr. BERGLAND. Mr. Speaker, last Thursday, during his news conference on foreign policy, President Nixon stated that "the jury is still out" on the invasion of Laotian territory by the ground forces of the Government of South Vietnam and the air forces of the United States. I was not critical of the President when the invasion was first announced. I believed that he should be given the opportunity to demonstrate whether or not his policies would shorten this disastrous war. I now submit that the jury is, in fact, in and that the joint expedition into Laos has failed in its objectives.

The primary objective of the Laotian operation was, according to the President, to save lives. Yet, more Americans lost their lives in Southeast Asia last week than during any week of the past several months, and South Vietnamese casualties are at their highest level since the Tet offensive of 1968.

The second objective was to hasten the withdrawal of American troops. Yet the President conceded, during his state of the world message 3 weeks after the invasion of Laos was well underway, that he sees no early end to our involvement.

A third objective was to reduce the flow of troops and supplies, over the Ho Chi Minh Trail, from North Vietnam into the South. It seems that travel over this trail has, in fact, been slowed. Unfortunately a new trail is being constructed well out of reach of South Vietnamese units in Laos.

The final objective of the incursion into Laos was to demonstrate that the Government of South Vietnam can conduct large-scale military operations without extensive support from U.S. forces. Despite all claims to the contrary, reports from the field do not instill confidence in the South Vietnamese Army. Further, there was extensive and massive support, in the form of air power, from the American Forces.

Because the Nixon administration has not fulfilled its responsibility to the American people—to bring this tragic war to a rapid end—it is necessary for the 92d Congress to take the initiative.

Our first task must be to enact legislation, which I am cosponsoring, that prohibits U.S. forces from participating in—or supporting—any invasion of North Vietnam. The President, by his constant refusal to rule out such an act, has made this specific legislation essential.

Second, we must work for early passage of the Vietnam Disengagement Act of 1971. This legislation, which I am also cosponsoring, would require the removal of all American forces by December 31, 1971; encourage the return of prisoners of war; and provide for those South Vietnamese who believe their lives would be endangered by our withdrawal.

Our tasks are immediate. We can no longer tolerate the further sacrifice of our young men. Nor can we allow the continued drain on our national resources and economy.

SENATE—*Wednesday, March 10, 1971*

The Senate met at 11 a.m. and was called to order by Hon. ROBERT C. BYRD, a Senator from the State of West Virginia.

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

O Thou Infinite Spirit, we bow before Thee with humble hearts. In Thy presence we would rekindle the fire of faith that we may better be prepared for the duties of life, to endure its trials, to bear its crosses, and to achieve its lasting joy and satisfaction. Give us strength for our daily duty, patience in unexpected crises, and in time of trial give us the hope that sustains and the faith that wins the victory of Thy kingdom.

While we work for the welfare of others may we in our personal lives enlarge the area of friendship and good will.

Grant a full measure of Thy grace and wisdom to the President and to the Congress that together they may concert their best efforts for the making of a new and better Nation, and for a world at peace.

Through Jesus Christ our Lord. Amen.

DESIGNATION OF THE ACTING PRESIDENT PRO TEMPORE

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

The assistant legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, D.C., March 10, 1971.

To the Senate:

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

ALLEN J. ELLENDER,
President pro tempore.

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

THE JOURNAL

Mr. MANSFIELD. Mr. President, I ask unanimous consent that the reading of the Journal of the proceedings of Tuesday, March 9, 1971, be dispensed with.

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

ORDER FOR TRANSACTION OF ROUTINE MORNING BUSINESS

Mr. MANSFIELD. Mr. President, I ask unanimous consent that following the speech by the distinguished Senator from Indiana (Mr. HARTKE) today, there be a period for the transaction of routine morning business not to extend beyond 12 o'clock, with statements therein limited to 3 minutes.

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.

ORDER FOR RECOGNITION TOMORROW OF SENATORS McGOVERN AND MATHIAS

Mr. MANSFIELD. Mr. President, I ask unanimous consent on tomorrow, follow-