These people paid close to 75 percent of the tax bill. It is this same $16,000 a year breadwinner who has been called on to provide additional unemployment benefits through Humphrey-Hawkins to pay a prevailing wage to a man on relief. He is the one who has to bear the burden of increased social security taxes. He is the one President Carter has asked to pay most of the energy costs.

Today the Government takes through taxes 44 cents out of every dollar earned.

In the past 20 years, Government spending has risen 340 percent causing inflation. Corporate profits have increased 105 percent which does not meet inflation.

The answer is less taxes by less Government, so we can give the hard-pressed taxpayer a chance to make a living.●

THE ACCOMPLISHMENTS OF ASSEMBLYMAN GUY BREWER

HON. CHARLES B. RANGEL

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Thursday, March 16, 1978

● Mr. RANGEL. Mr. Speaker, the New York State Assembly could never be the same without the clear articulate voice of Guy Brewer, the distinguished gentleman from Queens County. And certainly, Guy's record as a vigorous, hard working assemblyman speaks for itself.

Guy and his wife Marie are no strangers to rough goings and Guy once again is taking hard times to the mat.

In the following article taken from "Newsday," Dick Zander salutes the accomplishments of Assemblyman Guy Brewer. I would like to share this fine article with you:

A LAUGHING MAN RECALLED

Mention the name of Guy Brewer to anyone who knows him and the first thing that happens is a smile. What comes next is a question, "How's he doing?"

The smile is because Guy Brewer, the assemblyman from Queens' 29th district, is a wit, certainly one of the sharpest in the recent history of the Legislature. The recollection of his quips is certain to cause smiles.

And why the question? Brewer has cancer. "It's only a matter of time," he told his colleagues in the Assembly last July.

Brewer hasn't been spending much time in Albany this session. He has been hospitalized, most recently in Roosevelt Hospital. But the short, dapper lawmaker from Jamaica has not been forgotten. He was honored by the Black and Puerto Rican Caucus at its annual dinner a couple of weeks ago in Albany. The plaque spoke of his "noteworthy contributions on behalf of poor people in the State of New York."

New York City Clerk David Dinkins, the chairman of the Council of Black Elected Officials, accepted the award for Brewer. Dinkins said that everyone knew of Brewer's wit, but did they know of his courage in his fight against cancer? Dinkins said he hoped that Brewer would be present next year to thank the caucus personally for its award. Brewer has served as chairman of both the legislative caucus and the statewide council.

Even on the most serious of subjects, Brewer added humor. His announcement to the chamber that he had cancer came during a debate on a bill to legalize Laetrile. He said he supported the bill, although personally he didn't think that the controversial drug was worth a tinker's dam. "If this gives somebody a ray of hope, for God's sake let him have it," Brewer said. Then he added, "I'm not going to use it. For my curative, I'd rather use a little gin."

Brewer, who won't divulge his age but is believed to be in his 70s, didn't enter the Assembly until January, 1969. He had served as assistant to the Queens borough president and as a delegate to the 1967 Constitutional Convention. It was while he was a Con Con delegate that he broke the racial barriers of the WASPish Fort Orange Club in Albany, becoming is first black member. Later, Brewer helped State Sen. Joseph Galiber (D-Bronx) become the second nonwhite to gain admittance to the club.

Several years ago, the Assembly was debating an election bill. Brewer angrily lambasted an unnamed Queens elections official who had given him a difficult time over designating petitions, as "that bum." His Republican colleague, Al DelliBovi of Richmond Hill, called on Brewer to identify the bum.

"I don't think I better do that, Brewer said. "The gentleman no longer is on the law committee. He has since ascended to the bench."

The New York Red Book, a compendium of state officials, lists Assemblyman Brewer as "a journalist and consumer education consultant" with offices at 107-35 170th St., Jamaica. His efforts as an advocate journalist appeared for more than seven years in an interracial weekly, The Voice, published in Flushing. Brewer was as outspoken in his column as he was in debate in the Assembly. "You never had to worry about figuring out just where Guy Brewer stood," said Ken Drew, publisher of the paper.

Indeed, Brewer always has been a strong partisan. But this Democrat, this representative of the poor, has maintained a relationship—indeed, a friendship—with the likes of Perry B. Duryea Jr. of Montauk, the Assembly minority leader and GOP gubernatorial aspirant. For a number of years, Brewer maintained a summer home in East Hampton Town, and he and Duryea would kid each other over whether Brewer was Duryea's constituent.

It seems almost certain that Guy Brewer will not run for re-election next year because of his health. And that's too bad. Official Albany, for all its sham, sound and fury, is a sentimental place, and when Brewer returns, even for a brief visit, the corridors will echo with applause and cheers.●

SENATE—*Friday, March 17, 1978*

(Legislative day of Monday, February 6, 1978)

The Senate met at 11 a.m., on the expiration of the recess, in executive session, and was called to order by Hon. JAMES B. ALLEN, a Senator from the State of Alabama.

PRAYER

The Reverend Dr. Charles A. Trenthan, pastor, First Baptist Church, 1326 16th Street NW., Washington, D.C., offered the following prayer:

Eternal Father, draw near to us and grant us such communion with the heart and mind of God that we may think as You think and love as You love.

Let no barriers of prejudice, greed, or hatred hide Your face from us.

Hold before us a clear vision of those who depend upon what we say and do here.

Deliver us from the sins of pride and arrogance. Let us not be different for the sake of being different. Teach us the difference between steadfastness and stubbornness.

Keep our ears open to the voices of others, but let us not surrender our own best thoughts for the sake of being popular.

And when this day is done, let us lie down in the assurance that our world is more like the home which You want for all humankind.

In the strong and ever blessed name of Jesus. Amen.

APPOINTMENT OF ACTING PRESIDENT PRO TEMPORE

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

The legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, D.C., March 17, 1978.

To the Senate:

Under the provisions of rule I, section 3, of the Standing Rules of the Senate, I hereby appoint the Honorable JAMES B. ALLEN, a Senator from the State of Alabama, to perform the duties of the Chair.

JAMES O. EASTLAND,
President pro tempore.

Mr. ALLEN thereupon assumed the chair as Acting President pro tempore.

RECOGNITION OF LEADERSHIP

The ACTING PRESIDENT pro tempore. The Chair recognizes the distinguished Senator from West Virginia.

NOMINATIONS

Mr. ROBERT C. BYRD. Mr. President, if the minority leader has cleared on his side the nominations beginning with Department of State, on page 2 of the Executive Calendar, and going through the International Communication Agency, up to Department of Agriculture, I would then ask unanimous consent that the Senate proceed to the consideration of those nominations.

Mr. BAKER. Mr. President, I advise the majority leader that this calendar shows that the five nominations—meaning all the nominations under Department of State—and the other nominations that he identifies on pages 2 and

3 of the Executive Calendar have been cleared for consideration and disposition on this side, and we have no objection to such request.

Mr. ROBERT C. BYRD. I thank the minority leader.

Mr. President, I ask unanimous consent that the Senate proceed to the consideration of the nominations.

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

DEPARTMENT OF STATE

The assistant legislative clerk read the nomination of Alice Stone Ilchman, of Massachusetts, to be an Assistant Secretary of State.

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

The assistant legislative clerk read the nominations of David Eugene Boster, of Ohio; Lawrence S. Eagleberger, of Florida; Donald B. Easum, of Virginia; and Thomas O. Enders, of Connecticut, to be career ministers.

The ACTING PRESIDENT pro tempore. Without objection, the nominations are considered and confirmed.

INTERNATIONAL ATOMIC ENERGY AGENCY

The assistant legislative clerk read the nomination of Roger Kirk, of the District of Columbia, to be the Deputy Representative of the United States of America to the International Atomic Energy Agency, with the rank of Ambassador.

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

INTERNATIONAL COMMUNICATION AGENCY

The assistant legislative clerk read the nominations of John E. Reinhardt, of Maryland, to be Director; Charles W. Bray III, of Maryland, to be Deputy Director; and Alice Stone Ilchman, of Massachusetts, to be an Associate Director of the International Communication Agency.

The ACTING PRESIDENT pro tempore. Without objection, the nominations are considered and confirmed.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that it be in order to move to reconsider en bloc the nominations that have been confirmed.

The ACTING PRESIDENT pro tempore. Is there objection? The Chair hears none, and it is so ordered.

Mr. ROBERT C. BYRD. Mr. President, I move to reconsider en bloc the confirmation of the nominations.

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

The motion to lay on the table was agreed to.

ORDER OF BUSINESS

The ACTING PRESIDENT pro tempore. Does the distinguished minority leader desire recognition?

Mr. BAKER. I do not, Mr. President.

The ACTING PRESIDENT pro tempore. Under the previous order, the Chair recognizes the distinguished Senator from Colorado (Mr. HART) for not to exceed 15 minutes.

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

Mr. HART. I yield.

OUTER CONTINENTAL SHELF LANDS ACT AMENDMENTS OF 1977

Mr. JACKSON. Mr. President, I ask the Chair to lay before the Senate a message from the House of Representatives on S. 9.

The ACTING PRESIDENT pro tempore laid before the Senate the amendment of the House of Representatives to the bill (S. 9) to establish a policy for the management of oil and natural gas in the Outer Continental Shelf; to protect the marine and coastal environment; to amend the Outer Continental Shelf Lands Act; and for other purposes.

(The amendment of the House is printed in the RECORD of Feb. 2, 1978 beginning at p. 2094.)

Mr. JACKSON. Mr. President, I move that the Senate disagree to the amendment of the House of Representatives and request a conference with the House on the disagreeing votes of the two Houses, and that the Chair be authorized to appoint the conferees on the part of the Senate.

The motion was agreed to; and the Chair appointed Mr. JACKSON, Mr. CHURCH, Mr. JOHNSTON, Mr. ABOUREZK, Mr. BUMPERS, Mr. HANSEN, Mr. MCCLURE, and Mr. BARTLETT conferees on the part of the Senate.

VIOLENCE IN NORTHERN IRELAND

Mr. HART. Mr. President, it was with both pride and sorrow that I joined my distinguished colleagues in signing the joint statement on Northern Ireland—with pride because I am of Irish descent, and with sorrow because of the continuing violence which makes such a statement necessary.

While we go about our daily lives—distracted and concerned from time to time by outbreaks of violence in the Middle East, in the Netherlands, or Northern Ireland—the people of Northern Ireland never escape the threat of violence. It has become their way of life.

While we worry about our children being exposed to violence on television, an entire generation or two of Irish children have been immeasurably scarred by anxiety, fear, and exposure to sudden, violent death—not the death of imaginary characters on television, but of their mothers, their fathers, and their brothers and sisters.

It is intolerable that this atmosphere of violence and death should continue year in and year out. It is intolerable that another generation of Irish children be allowed to grow up in the shadow of death. It is intolerable that anyone—be he Irish, American, or British—support the insanity of extremism over the sanity of moderation.

I remind any in this country who are still providing assistance to the enemies of peace in Northern Ireland of the words of the Prime Minister of Eire, Liam Cosgrave, when he spoke before a joint session of Congress 2 years ago:

> Let me tell such people in the most categorical manner possible what they are doing, whatever their motives, that every penny, dime, or dollar they give thoughtlessly for such purposes, is helping to kill or maim Irish men and women of every religious persuasion in Ireland.

I would also reiterate the appeal made in our joint statement to the leadership and community of Northern Ireland and to the British Government for a more genuine commitment and more effective leadership to achieve a settlement fair to Protestants and Catholics alike.

We must all support and encourage the efforts of those who, with courage and dedication, are working for the day when to be Irish will once again be only a source of pride and not also of sorrow.

We will have overcome what Yeats called "the fascination of what's difficult" and will have restored peace once again to that fine land.

Mr. President, in the remaining time I have allotted, I turn to another equally important, perhaps equally immediate subject, and that is the question of the pending negotiations on strategic arms limitation.

CLARIFYING LANGUAGE TO INSURE SALT PROTOCOL EXPIRES UPON ITS TERMS

Mr. HART. Mr. President, there are few enterprises facing us as a nation that call for more persistence and self-confidence than bringing the SALT II negotiations to a successful conclusion. Recent observations by members of the administration that Soviet policy in the Horn of Africa inevitably has repercussions in other areas of United States-U.S.S.R. relations, underscores the complexity of the task. Similarly, the events of a few weeks ago, with the expression of concern in the Russian press about American positions on issues still under discussion in Geneva, remind us once again that these are bilateral discussions: That the doubt and suspicion that characterize our perceptions of the Soviets may also prevail in their view of our motives and intentions.

But the difficulty of reaching agreement only underscores the need for doing so.

In my visits to the SALT talks as a congressional adviser, I have been deeply impressed by the professionalism and tenacity of the American negotiating team. I have also become aware of the added difficulty they bear, paradoxically, because they represent a free and open society. The intensity of our public debate, even on a treaty still under negotiation that touches on the most sensitive issues of national security, is a phenomenon not easily understood by others. This debate must not be perceived as a failure of the collective national will.

(Mrs. HUMPHREY assumed the chair.)

Mr. HART. Madam President, on several occasions, I have expressed concern about those critics who have condemned

SALT II accords that are still being shaped. A piecemeal attack on a single provision, viewed in isolation, may seem telling, yet prove to be of little weight in the context of the treaty as a whole.

Certainly all of us in the Senate have learned in the course of our deliberation on the Panama Canal treaties that full knowledge and information are essential to sound judgment. This will be even more true in weighing the yet more sober and difficult issues implicit in a strategic arms agreement.

On February 24, Senator SPARKMAN, chairman of the Foreign Relations Committee, presented to the Senate and to the American people the first full and unclassified status report on agreements to date in SALT II. This is a welcome development which should make possible a more informed and open discussion of the issues still to be resolved.

Much past criticism has centered on the agreement of May 1977 to divide the SALT accord into two parts: an 8-year treaty that will embody the key numerical limits, and a protocol of 3 years' duration or less to cover some qualitative controls affecting new systems still under development.

Although the limits of the protocol are widely viewed as advantageous to the United States, critics have quickly branded the strategy as a "distinction without a difference." They argue that, once an agreement is reached, it will automatically persist, even though it expires by its own terms on a date certain. Even more distressing, they charge that this position was deliberately conceived to avoid airing the most difficult and controversial issues before the Senate and the American people.

The division of the accord into treaty and short-term protocol is a superb negotiating strategy that warrants commendation and support instead of criticism. It provided a way to segregate issues on which there was promise of early agreement from other more long-term issues. Those longer term issues involve systems still under development, which pose special problems of counting and verification, at least under today's groundrules.

The difference between treaty and protocol is not, therefore, a cosmetic one. It is a separation of issues that are inherently different in both technical and political implications. It is not a diplomatic dodge, a concession to the Soviets, or political eyewash. In a very real sense, resolution of problems treated in the protocol may point the way to SALT III.

The fact that this line of demarcation between protocol and treaty is substantive adds to the importance of maintaining the distinction. I do not accept the blanket charge of some critics that the mechanism provides a way for the administration to avoid addressing the tough issues with the Senate, with our European Allies, or with the American public. But I would not wish to see essentially tentative and temporary decisions embodied in the protocol slide, by simple fact of their existence, into permanence.

If these constraints ultimately become part of the treaty, there must be a positive decision to that effect; it must not occur by default. For this reason, I am prepared to offer, at the appropriate time in the process, clarifying language to the resolution of ratification, in form similar to the following:

Before the period at the end of the resolution of ratification, insert a comma and the following: "subject to the understanding that nothing in the Protocol shall bind either of the Parties after the date of the termination of the Protocol, unless the Parties otherwise agree and approve such agreement, in accordance with their constitutional processes.

The purpose of this clarifying language will be to confirm, in unmistakable terms, the limited nature of the protocol; and to insure that any commitment to extend or alter the protocol or any of its provisions is reached through the full, unconstrained process of negotiation and approval.

Because of the gravity and complexity of the matters at issue in the SALT protocol, I believe that such an unequivocal understanding is vital on several counts:

It is vital that the Soviet Union understand that these issues are not permanently resolved, and that serious negotiation must continue to seek mutually acceptable answers;

It is vital that our European allies be reassured that we understand their special concerns, and that we will not unilaterally foreclose options of importance to them;

It is vital that the Members of the Senate be assured that our exercise of the constitutional responsibility and prerogative will not be impeded; and

Perhaps most important, it is vital that the American people have confidence that the public process will run its full course, and that they will, accordingly, have an opportunity to take part in those deliberations.

In addition to the intrinsic value of these reassurances, I would hope that they also serve to shift the debate from its present unproductive focus on matters of form to an examination of the substance of the negotiations.

First, this treaty allows us to get on with the crucial matter of limiting systems in being, in particular, the MIRVed heavy Soviet ICBM's, which pose the most immediate threat to peace and security.

Second, this protocol allows for our continued development and testing of new systems. Clearly, this right extends to both sides, but it is particularly important to the United States—because M–X, GLCM, and SLCM are at critical points in development, but are still some years short of full operational readiness.

Third, the timing of the protocol provides a point of leverage to secure Soviet agreement to reductions or constraints on other systems, including the possibility of securing some meaningful breakthroughs on theater weapons issues in the mutual balanced force reduction talks.

Fourth, the protocol buys time—time to attempt to find ways of dealing with the counting, verification and control problems introduced by mobile systems and by small weapons such as cruise missiles.

In sum, then, the protocol offers much-needed breathing space. We can institute the absolutely fundamental numerical and other limits embodied in the SALT II treaty. We can strengthen our position in other arms control negotiations in progress. We can try to deal with problems of compliance monitoring and verification introduced by new technologies. And if we fail, we retain the right ultimately to deploy these weapons. For these reasons, I believe the protocol to be a welcome development which, on its merits, will deserve our support.

In this context, let me stress again the nature of the language I propose. It would apply first of all, to the resolution of ratification, not to the treaty itself. It would not alter the treaty in any way, or call for any action or reaction on the part of the Soviet Union. It would not interfere with the process of negotiation now underway. It would impose nothing beyond that which we will already have committed ourselves to do; namely, to limit some elements of the accord to a shorter time span than others. Its purpose is, simply, to confirm—to assure and reassure.

But it will do something else as well. It will hopefully help refocus the debate on the sober, compelling considerations inherent in a treaty between the Soviet Union and the United States dealing with a subject no less important than national security and survival. The real issues are sufficient in and of themselves. There is no need to invent them.

Much of the recent argument about the "automatic permanence" of the protocol is just such a manufactured issue. It is charged that any concession inevitably persists to condition and limit subsequent negotiations. Thus, for instance, the critics argue that the limitations on deployment of ground- and sea-launched cruise missiles for the duration of the protocol are really permanent. The Soviets, they say, implacably resist any alteration or amendment of treaties that does not materially and unilaterally enhance their own position. Implicit in this argument, though rarely stated, is the corollary charge that the United States, having made a temporary concession, inevitably lacks the will or tenacity to pursue the issue.

Any reasonable reading of recent history belies such arguments. The 1972 Treaty on the Limitation of Anti-Ballistic Missile Systems was amended just 2 years later to further reduce the number of allowable sites. Similarly, the Vladivostok Accords of 1974 posit a reduction of numerical limits from the 1972 SALT interim agreement. The accords require the Soviets to accept numerical symmetry—a concession that critics of SALT I argued would never occur. Even the decision by the United States and U.S.S.R. to continue to abide by SALT I limits after the expiration of the accord, pending the completion of SALT II, is brandished as proof of Soviet duplicity and American naivete. It ignores the fact that only the Soviets have had to make actual force reductions under SALT I, dismantling ICBM launchers as a tradeoff for submarine launchers, and that the Soviets are at a stage in weapons production which

could, at the moment, be more rapidly escalated than our own if SALT I limits were suspended.

Thus, I find this train of thought both inaccurate and superficial. More important, though, it is irrelevant. It is not possible to prove a negative. No one knows what will—or even what should—become of the terms of the temporary accord of the protocol. And a debate that is comprised of assertions that they will or would not become permanent ignores the real issues at hand.

There will be issues enough—real and vital issues—to occupy our energies when SALT II comes before us. Let us dispense with surrogates and prepare for the real debate that is ahead.

I call on my colleagues to consider the course I propose. I invite their comments and, in due time, their support.

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

THE PANAMA CANAL TREATY

The PRESIDING OFFICER. Under the previous order, the Senate will now resume consideration of the pending business, Executive N, 95th Congress, 1st session, Calendar Order No. 2, the Panama Canal Treaty, which the clerk will state.

The assistant legislative clerk read as follows:

Calendar Order No. 2, Executive N (95th Congress, 1st session), the Panama Canal Treaty.

The Senate proceeded to consider the treaty.

ROUTINE MORNING BUSINESS

Mr. ROBERT C. BYRD. Madam President, I ask unanimous consent that there be a brief period for the transaction of routine morning business, as in legislative session, not to extend beyond 10 minutes, with statements therein limited to 5 minutes each.

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

S. 2760—REGULATION GOVERNING OPERATIONS

Mr. DOLE. Madam President, about a year ago I offered a half-dozen amendments to Public Law 480—the food-for-peace legislation—designed to help prevent program abuse such as is now being revealed to have occurred in past years as the Korean influence scandal investigations proceed. My amendments were accepted by my congressional colleagues and became a part of the Food and Agriculture Act of 1977.

PUBLIC LAW 480 PROGRAM ABUSES REGRETTABLE

Public Law 480 has functioned since its inception in 1954 with strong bipartisan support. Over $30 billion worth of food assistance has been provided hungry and malnourished people through this worthwhile program. It is regrettable that there have been efforts by a few to limit competition and to obtain contracts under the program through the use of political influence rather than on the basis of the merit of their services or products supplied.

As the investigations of the Korean influence scandals reveal more and more evidence of wrongdoing, it appears that Public Law 480 rice money was passed and certain political favors were rendered.

MY ADOPTED AMENDMENTS WILL HELP

My amendments, which became law, eliminated Public Law 480 sales agents. According to allegations, it is through this means that much of the influence buying money was generated. Another of my amendments, which is now law, requires that Public Law 480 regulations be rewritten to require the removal of conflict of interest situations between participating countries, their shipping agents, commodity exporters and suppliers of transportation. The USDA is now completing the revision of new regulations. However, the Public Law 480 regulations need further tightening.

FURTHER TIGHTENING NEEDED

Among the allegations under current investigation by the Department of Justice and appropriate congressional committees is one that there was political intervention to get top officials of some Public Law 480 countries to contract with specific shipping agents who arrange for ocean transportation for the commodities supplied under the program to destination countries.

The bill that I am introducing today would require each Public Law 480 program country that uses the services of a shipping agent to certify that political influence was not a factor in the selection of the agent and that the agent's capability to perform a service was the criterion used for his selection. My bill includes a penalty for false certification.

This requirement is needed not only because of longstanding allegations of abuse in this area but new allegations have recently been made that some shipping agents, in seeking conrtacts with Public Law 480 program countries, are claiming that they "have the most political influence." We must strengthen the competitive factors in the Public Law 480 program. Products and services must be contracted for on the basis of competition and merit—not on who has the "most political influence."

Madam President, I ask unanimous consent that my bill be printed in the RECORD at this point.

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

S. 2760

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 408 of the Agricultural Trade Development and Assistance Act of 1954, as amended, is amended by adding at the end thereof a new subsection (f) as follows:

The regulations governing the operation of Title I and III of this Act shall require each program country that uses the services of a shipping agent to nominate the agent selected to the U.S.D.A. for approval. Each nomination shall be accompanied by a certification stating that the shipping agent being nominated was selected in accordance with the following criteria:

(1) The selection for nomination was made on the basis of merit; i.e., the agent's capability to perform the required shipping agent and/or purchasing agent functions; and

(2) That political influence was not a factor in the agent's selection for nomination.

This certification shall be required when each P.L. 480, Title I program country either enters into a new contract with a shipping agent or renews their existing contract.

False certification shall result in nonpayment of ocean freight differentials to the program country during the period of service covered by the false certification.

EMERGENCY FARM LEGISLATION

(The following proceedings occurred during discussion of the Panama Canal Treaty and are printed at this point in the RECORD by unanimous consent.)

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

Mr. ALLEN. Yes, I will be glad to yield without losing my right to the floor.

Mr. MELCHER. I thank the Senator from Alabama for yielding.

As in legislative session, I note that we have agreed in the Senate by unanimous-consent agreement that there will be a time limitation of 6 hours each on two bills that have been reported out of the Senate Agriculture Committee.

Because there is a real crisis in agricultural prices, it is obvious that the Senate should act as quickly as possible upon those bills, and do it in a timely fashion so that grain farmers, cotton farmers, and other agricultural producers will know where they are, at the time of planting.

While the unanimous-consent agreement does not set a date certain for taking up the bill, and while the bills are subject, one of them, to the concurrence or at least the release by the Agriculture Committee, and both of them are subject to waivers by the Budget Committee, both committees which are meeting today, it is my understanding on consideration of these two bills that it is obvious we need to take up this legislation on Monday of this coming week.

Would the Senator from Alabama agree with me that it is absolutely vital that we set aside consideration of the Panama Canal Treaty to take up those bills and for the Senate to act on them?

Mr. ALLEN. Yes. I certainly agree with the distinguished Senator.

Mr. President, I ask unanimous consent that this colloquy, the remarks of the distinguished Senator from Montana and my own remarks, appear as in legislative session at a place other than in between my remarks.

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

Mr. SARBANES. Will the Senator from Alabama yield on that point so that the colloquy can be conducted in the appropriate place?

Mr. ALLEN. Yes.

Mr. SARBANES. I was very interested in the Senator's response. It would seem to me implicit in it was the possibility that we could arrive at an agreement on how and when we will consider the Panama Canal Treaty and bring it to a final vote, either up or down, in the Senate.

The Senator from Montana, of course, has on previous occasions made this

same point concerning the serious issues facing our Nation and I have on previous occasions risen to agree with him that there are other important matters pending before the Nation, in addition to the canal treaties, which the Senate needs to get to.

It seems to me we really ought to try very hard in view of this concern, I know it is shared by others, to arrive at a time certain for the consideration of the Panama Canal Treaty so that the Senate and the country will know that at some definite point there will be a vote, just as we were able to do with respect to the neutrality treaty on which we voted yesterday, and which, of course, was approved by a margin of 68 to 32.

So I would hope that in view of the response of the distinguished Senator from Alabama that sometime in the near future, in the next few days, we would be able to arrive at such an arrangement so that we would know, the Members of the Senate and the country would know, that the treaty that is now before us will, at a certain time, be acted upon.

We could then, of course, plan the rest of the business of the Senate which is also pressing and needs to be dealt with.

Mr. ALLEN. I thank the Senator for his suggestion.

Now, let me return to the distinguished Senator from Montana.

I say to the distinguished Senator from Montana that these are emergency measures. This Panama Canal Treaty is not an emergency measure. I am hopeful that in the 3 or 4 days we have next week prior to the recess we will be able to take up these emergency farm bills.

I am told that action must be taken on them prior to the Easter recess if they are to do any good because both of them have to do with a needed set-aside of acreage; that is, not putting in production certain acreage, portions of their holdings, to withhold certain acreage from production.

Obviously, in the next 2 to 3 weeks they must, of necessity, make a decision, in possibly 10 days they must make a decision of how much of their land they are going to plant.

So time is of the essence with respect to the emergency farm legislation. I do not see that the agreement on taking up the farm bill should be held hostage to any demand that a time limit or time for voting be set on this important issue.

We are getting more information all along that the White House will give us this exchange of correspondence. It might have a tremendous influence on the outcome of this treaty.

Mr. LUGAR. Will the Senator yield?

Mr. ALLEN. Yes, in a moment I will yield to the Senator from Indiana.

Mr. MELCHER. Will the Senator yield?

Mr. ALLEN. Yes.

Mr. MELCHER. I thank the Senator for yielding.

Time, indeed, is of the essence, because the effect of legislation, if passed in the Senate on Monday evening, or sometime on Tuesday, is to get over to the House in time for them to give it some consideration on next week, so that agricultural producers in this country can know now how much land they are going to put into cultivation, how much of their crops they are going to put into the ground in spring planting, and have some idea to make a judgment on how much crops they want to plant this spring, with some projecting prices which are also inherent in the bill. They need to know this very promptly.

The ships will go through the canal next week and the week after. World commerce will not be interfered with. The number of amendments at the desk at this point in the Panama Canal Treaty I am advised is 51. There may be scores more. It cannot be cleared up promptly.

This is one of the vital industries of this country that is waiting on action here in Congress, the agriculture industry, to see what we are going to do about the amount of land that will be set aside and not put into crops, or what will be the price projected for various crops, wheat and corn, and other feed grains, as well as cotton, so that farmers in America can make some determination of what they are going to plant at this time.

So, indeed, time is of the essence. It is vital for the country.

I am extremely hopeful that the Senate will agree to take up the unanimous-consent agreement on hours for these two bills on Monday, and we will proceed to address one of the serious problems here in our own economy in the United States.

I thank the Senator for yielding to me.

Mr. ALLEN. I thank the distinguished Senator from Montana for bringing up this matter. It is of greatest urgency. I assure him that I will not stand in the way of bringing up the farm bills. As a matter of fact, I will urge that they be brought up the first thing Monday morning.

With a 6-hour limitation on both bills, I would be willing to stay until both bills are disposed of on Monday, Monday night, or Tuesday—whatever time it takes. I would be willing to work right on through, to get these bills over to the House.

I believe the Senator from Montana has rendered a great service to the country in pointing this out.

I hope—as a matter of fact, I am confident—that the leadership will allow these bills to be brought up; because, very definitely, this treaty is not going to be approved next week. As the Senator says, ships are going to continue through the canal.

I yield to the distinguished Senator from Indiana (Mr. LUGAR).

Mr. LUGAR. Mr. President, I thank the distinguished Senator from Alabama and the distinguished Senator from Montana, both of whom serve on the Agriculture Committee. They have been heavily involved this week in the important action taken by the Agriculture Committee of the Senate.

I simply wish to affirm the request by the Senator from Montana (Mr. MELCHER) and the words of the Senator from Alabama (Mr. ALLEN) and to confirm this, at least in a bipartisan way. I, too, think it is imperative that we act on Monday or, at the latest, on Tuesday on these bills, for which all three of us have evidenced support in the Agriculture Committee and which are of an emergency nature.

I believe that a large majority of our colleagues in this body who have not been a part of the Agriculture Committee deliberations, but at the same time are sensitive to the problems of farmers throughout this country, will want to take this action and do so promptly before the recess; because the planting season is at hand and, if we are going to take these steps, we must do so in a timely manner.

I appreciate the consideration of the Senator from Alabama in yielding this time to me.

Mr. ALLEN. I thank the distinguished Senator from Indiana for his remarks.

It is a bipartisan matter and certainly does not smack of politics in the slightest.

I do not regard the Panama Canal issue as being anything other than bipartisan advocacy and opposition; both. I think it is a healthy situation that it is not a party issue.

I notice that 10 Democrats on yesterday voted against the treaty. Considering the number of Democrats and Republicans, that was not too bad a ratio. The opposition is bipartisan, and the advocacy position is bipartisan.

I yield to the Senator from Utah (Mr. HATCH).

Mr. HATCH. I thank the distinguished Senator from Alabama.

I agree with the Senator from Montana, the Senator from Alabama, and the Senator from Indiana that we have to do something about this farm problem and the crisis we have in America. Last evening, I met with 50 farmers from Utah who are here doing everything they can to see that something is done about this national emergency.

I do not know of any nation which has survived which has not had consideration for its farmers. Especially since I think the farm business is one of the two largest producers of the gross national product in America, we have to do something to alleviate the extraordinary suffering farmers are undergoing as a result of the economic crisis in this country.

So I commend the distinguished Senator from Montana and my wonderful friend from Alabama and others who are pushing as hard as they can to get some justice for the farmer in America. I support this.

I think that, important as the Panama Canal treaties are, the 6 hours reserved for this matter certainly is not an inordinately long time. We can interject it in what is happening here and get the problem resolved and benefit our farmers in this country. So I certainly back these Senators in their request. I also would be willing to stay as long as it takes to resolve these farms conflicts, not only in order to expedite the farm conflicts but also to get back on the Panama Canal Treaty.

Mr. ROBERT C. BYRD. Mr. President, will the Senator yield?

Mr. ALLEN. I yield.

Mr. ROBERT C. BYRD. Let me put

this matter at rest, after hearing all things said and seeing all kinds of things.

Yesterday, the leadership secured a unanimous-consent agreement on both farm bills. The Budget Committee is not ready to take up that bill. They plan to take it up on Monday, for good reasons. The Senate Budget Committee has some responsibilities, too, not only in connection with the farm bill but also other bills. The Budget Committee is seeking information so that it will be prepared to make various judgments in connection with the farm bills.

So it is anticipated that by next Tuesday or Wednesday, the bills will be taken up and disposed of on the same day, if there is no objection to taking them up. We have the time limitation on them; and if there is no objection to taking them up on next Tuesday or Wednesday, they could be taken up; the Panama Canal treaties could be set aside for that one day, and those two measures could be disposed of.

UNANIMOUS-CONSENT AGREEMENT—H.R. 6782

Mr. President, I ask unanimous consent that on next Tuesday, at 9 a.m., the Senate proceed to the consideration of the bill reported by the Agriculture Committee, H.R. 6782; that upon the disposition of that measure, the Senate proceed to the consideration of S. 2481.

I have not cleared this request with the minority leader. I ask unanimous consent that he may be authorized to enter his approval of the request. I have not cleared it with Mr. TALMADGE or Mr. MUSKIE, nor have I cleared it with Mr. MAGNUSON. The Appropriations Committee has had to deal with this matter, also. So I ask that the request be conditioned upon the approval of those Senators.

Let it not be said that the debate on the Panama Canal treaties has to stand in the way of action on these two measures. I have said from the very beginning that any measure of an emergency nature would be taken up.

So, while the leadership is a convenient whipping boy for a lot of flogging and laying the heavy wood on, I hope the leadership will be dealt with tenderly in this case.

The PRESIDING OFFICER. Is there objection to the unanimous-consent request?

Mr. CURTIS. Mr. President, reserving the right to object, I say to the distinguished majority leader that I hope he will include in his request a limitation of time, so that both bills can be completed on Tuesday.

Mr. ROBERT C. BYRD. They will be.

The PRESIDING OFFICER. The Chair advises that there is already a limitation of time on those bills.

Mr. CURTIS. But the vote will come on Tuesday?

Mr. ROBERT C. BYRD. No question about it, yes.

Mr. LEAHY. Mr. President, reserving the right to object, does the distinguished majority leader know that the complete committee reports of both the Agriculture Committee and the Appropriations Committee would be available by Tuesday? We are dealing with legislation. While we all understand that there are some very serious problems facing the agricultural community of this country, we are also talking about some very substantial appropriations involved. At least to this Senator, who is a member of the Agriculture Committee and the Appropriations Committee, it would be very helpful if those reports were available prior to voting.

Mr. ROBERT C. BYRD. Mr. President, will the Senator from Alabama yield?

Mr. ALLEN. I yield, on condition that I do not lose my right to the floor. I think that is understood.

Mr. ROBERT C. BYRD. Mr. President, the Appropriations Committee has just met and ordered reported H.R. 6782 without recommendation. As to whether the printed report would be available I do not know but I am quite sure it would be available by Tuesday, and I have no knowledge upon which I can base a response to the Agriculture Committee, but I feel it would be available and I will ask the Policy Committee staff to contact the Government Printing Office to urge that every effort be made that those reports be made available as soon as possible.

Mr. LEAHY. It is my understanding, also, then, from the distinguished majority leader's request, that both the chairman of the Appropriations Committee and the chairman of the Agriculture Committee would have opportunity today to interpose objections if they want to.

Mr. ROBERT C. BYRD. To the request.

Mr. LEAHY. Yes.

Mr. ROBERT C. BYRD. Yes, along with the distinguished minority leader and Mr. TALMADGE.

Mr. LEAHY. I have no objection.

Mr. ROBERT C. BYRD. I think I already cleared this with Mr. DOLE earlier.

Mr. LEAHY. I have no objection.

Mr. DOLE. Mr. President, reserving the right to object, first let me say that I thank the leadership for their efforts to cooperate. We have been discussing this for some, I guess, a couple of days now, and there has been every effort by the distinguished majority leader to work out some satisfactory time. I appreciate that very much.

The only reservation I would have is there is sort of an unwritten agreement between the Senator from Kansas and the Senator from Georgia that both bills be cleared and both bills be on the floor. On that basis, there will be no objection. We just did not want to lose one in the Budget Committee or the Appropriations Committee and not have an opportunity to vote on both bills on the same day. I guess that would be implicit in the unanimous-consent request.

Mr. ROBERT C. BYRD. Yes.

The PRESIDING OFFICER. The Chair will advise that was included in the original request for unanimous consent.

Mr. DOLE. So I think we can scale back the time. Six hours on each bill would be more than adequate. I would hope we could go back to 4 hours on each and that way finish in the early afternoon.

The PRESIDING OFFICER. Is there objection to the unanimous-consent request? If not, the unanimous-consent request is so ordered.

Mr. ROBERT C. BYRD. Mr. President, will the Senator yield for one further request?

Mr. ALLEN. I yield.

Mr. ROBERT C. BYRD. I ask unanimous consent, Mr. President, that the time of 6 hours on each of the two bills, H.R. 6782 and S. 2481, be reduced to 4 hours in accordance with the suggestion made by the distinguished Senator from Kansas (Mr. DOLE), conditioned on the approval of Mr. MUSKIE, chairman of the Budget Committee, Mr. MAGNUSON, Mr. TALMADGE, and again the minority leader, Mr. BAKER.

The PRESIDING OFFICER. Is there objection?

Mr. LEAHY. Mr. President, reserving the right to object, and of course I never do, on both of these bills may that be amended to reserve 5 minutes on each bill to the Senator from Vermont?

Mr. ROBERT C. BYRD. Mr. President, that is the easiest request I have heard in a long time. I include that request.

The PRESIDING OFFICER. That is included. Is there further objection? Without objection, it is so ordered.

Mr. ROBERT C. BYRD. Mr. President, if the distinguished Senator from Alabama will yield further, so that I might be sure of this, it has now been ordered that at 10 o'clock on next Tuesday morning——

The PRESIDING OFFICER. Nine o'clock.

Mr. ROBERT C. BYRD. Nine o'clock on next Tuesday, yes—I am an 8 o'clock fellow with a 9 o'clock time—9 o'clock next Tuesday morning, the Senate will proceed to the consideration of that first farm bill; is that correct?

The PRESIDING OFFICER. The Senator is correct.

Mr. ROBERT C. BYRD. Mr. President, did I not include in that request that upon the disposition of that bill the Senate will take up the second one?

The PRESIDING OFFICER. That was in an earlier unanimous-consent request already agreed to.

Mr. ROBERT C. BYRD. Yes, that was last evening.

Mr. President, may I assure the Members of the Senate that the Senate will come in and will proceed to the consideration of the first farm bill, dispose of it, go to the second one and dispose of it on next Tuesday subject to the condition that those Senators whose names were mentioned may waive the order.

The PRESIDING OFFICER. For the Chair's clarification here, is it the Senator's intention that we will go to the Senate bill or the House bill first?

Mr. ROBERT C. BYRD. Go to the House bill, H.R. 6782, first.

The PRESIDING OFFICER. I thank the Senator for clarifying that.

Mr. ROBERT C. BYRD. I thank the Senator.

Mr. ALLEN. I state this to the distinguished Senator from West Virginia, our distinguished majority leader. He expressed some concern that the Senator from Alabama, to use his words, was making a whipping boy of the leadership with respect to bringing up the farm

bills. I state to the distinguished majority leader that, on the contrary, the Senator from Alabama said—and I use the same exact words—that I was not only hopeful but confident that the distinguished majority leader would bring up the farm bills. And my remarks about not allowing the farm bills to be held hostage to the canal treaties was occasioned by a question from the distinguished Senator from Maryland (Mr. SARBANES) who stated in connection with the comment of the distinguished Senator from Montana that in a short while we should agree on a time limit on the canal treaties, and I saw no connection between the two and so stated. But I did not state that the leadership was withholding the consideration of the farm bills at all. I expressed the contrary view, I might say.

Mr. ROBERT C. BYRD. Mr. President, in my use of the phrase "whipping boy" I did not attach that to the Senator from Alabama's name.

Mr. ALLEN. I thank the distinguished Senator.

Mr. ROBERT C. BYRD. Nor did I name any other Senator in the use of that phrase.

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

Mr. ALLEN. I yield.

Mr. SARBANES. I appreciate the Senator yielding. The point I made was really to underscore the importance of the issue the Senator from Montana had brought before the Senate in terms of dealing with the pressing issues facing our Nation's farmers. In fact, I made the unanimous-consent request last night with respect to establishing the time limitation for the farm bills in order to enable us to go forward with considering these farm bills.

The distinguished Senator from Alabama, in responding to the Senator from Montana, agreed with the point that there are a number of pressing issues, and the only point I then wished to make was it seemed to me that it would be very helpful to all Senators and to moving forward with the Senate's business, not that we should dispose of the Panama Canal Treaty by next week, because I understand the Senator from Alabama and other Senators have a great number of issues they wish to discuss, but simply in the near future we should try to reach some understanding on a date beyond that point when we would, in fact, finally deal with this treaty matter by an up or down vote just as an understanding was reached with respect to the treaty that was voted on yesterday.

I fully understand and intend that a reasonable time will intervene between the time understanding and the date for the vote during which consideration will take place of the various matters that are pending with respect to the Panama Canal Treaty. But it seems to me a very worthwhile objective in terms of transacting and planning the business of the Senate if we could soon reach some understanding that at some time on a date certain the Senate would act. Otherwise, we are left in the position of simply facing the prospect of going on for ever and ever when there are other matters also that the Senate needs to get to. It would seem to me that reasonable men should be able to arrive at an understanding as to what constitutes a reasonable period of time for the consideration of the issues involved with the Panama Canal Treaty. Reaching that time understanding, and it should not be too difficult to do, would give us a date for a final vote. We have already, of course, responded to the immediate problem of the farm bills. There was no suggestion whatever in terms of holding any issue hostage and, in fact, I have recognized and urged prompt action on the farm problem. Indeed, I have supported the comments that on occasion have been made from the able Senator from Montana with respect to the need to deal with other pressing issues. It seems to me that for the orderly planning of the business of the Senate we ought to reach an understanding as to a date when we will act finally on the Panama Canal Treaty. That was the thrust of my comments to the able Senator from Alabama, who is extremely skilled in matters on the floor of the Senate and in the Senate's business and who, of course, can play, if he wishes to, an enormously constructive role in helping the Senate to set a reasonable time framework in which to consider debate on the Panama Canal Treaty and action on the amendments and other changes which Members may have.

I would hope that in the next few days the Senator would be willing to join in an effort to try to arrive at some fixed timetable for dealing with this treaty which would be fair to everyone. I am not suggesting it should be of such short duration that people do not have a chance to fully express themselves, but we at least ought to understand what the ground rules are and the time framework in which we are operating, and I would think the Members of the Senate and the country would want to be assured that this matter could not drag on forever.

Mr. ALLEN. I thank the distinguished Senator from Maryland for making these comments.

Certainly there is no disposition on the part of the Senator from Alabama to unduly prolong the discussion on this treaty. But I call attention to the distinguished Senator from Maryland that we have had this treaty before the Senate for only an hour and a half, and we are talking about, worrying about, setting a time limit. That hardly seems to place this bill in a position where it is being unduly debated.

Not a single amendment has been brought up, and the Senator from Maryland says, "Let us set a time to vote." That is a little bit precipitate, it would seem to the Senator from Alabama.

I will assure the Senator from Maryland after the recess—I underscore after the recess—and several days' consideration thereafter, I feel sure that the opponents of this treaty would make a bona fide effort, as we did on the other treaty, and I heard no one say that matter was unduly prolonged. A time was set well in advance. All amendments anybody cared to offer were offered, and I feel confident that a time can be agreed upon.

But I think the country has a right to consider the action of the Senate and to weigh this matter and be assured that the issue is still before the Senate, that the action of yesterday really is not going to count at all if the Senate defeats the Panama Canal Treaty. That action would just be wiped out because one treaty cannot go into effect without the other. So I hate to see the distinguished Senator from Maryland, who certainly has done an outstanding job steering to approval the Neutrality Treaty, I would hate to have him seek to put the Senator from Alabama in a position where he is holding up final action on this treaty when we have not had it under consideration for but an hour and a half. It is too important to cut off that soon or to set a date for final action.

Yes, I yield.

Mr. LEAHY. I would just like to make a comment. I do feel, as I said from time to time on the floor, that the Senate should have ample time to debate these treaties. I think we have done a great service to the country, both those Senators who were opposed to the treaties and those who favored the treaties.

I cannot speak with the years of experience of the Senator from Alabama, but certainly in the short while I have been in the Senate I know of no issue that has received such full and complete debate, and one made so public. I think that is good for the country, and I have said that as a compliment both to Senators who opposed the treaties and Senators favoring them.

Mr. ALLEN. I thank the Senator.

Mr. LEAHY. I would hope at some point a time certain will be set, because while the issues should be brought out, while they should be fully debated, there is a broad concern around the country, as there is in my own State of Vermont, that we face a number of other equally pressing areas, whether it is farm bills, energy legislation, or tax legislation to be discussed.

I was reminded by some people in Vermont recently, some in favor and some against the treaties, that when we debated the treaty setting up the NATO alliance, probably the most significant military alliance in recorded history, that the debate on that was either 12 or 14 days in the U.S. Senate.

I am not unmindful of that, and certainly the Senator from Vermont is willing to start early and go late to expedite this matter. But I know the people in my State, while they are very interested, both those for and those against, they hope that at some time on a date certain the matter will finally be resolved and voted upon.

Mr. ALLEN. I feel sure the Senator's wishes will be complied with and a date will be set and it will not be an unreasonable date.

The point I am making is that after the treaty has been under debate for an hour and a half efforts are being made to indicate that the Senator from Alabama should agree on a time certain to vote on this treaty. I do not know what is going to come up.

The distinguished Senator from Michi-

gan just a moment ago called attention to the fact that there was an exchange of correspondence between Dictator Torrijos and President Carter in the last 2 days of consideration of the Neutrality Treaty, and the distinguished Senator from Michigan stated—I do not have personal knowledge of this but merely repeat in essence what he said—that while assurances were being made here on the floor of the Senate that these reservations to the resolution of ratification meant something that assurances were being made to dictator Torrijos that they did not change anything.

If that is in fact true—and I do not aver that it is, I merely state that that statement was made here on the floor of the Senate by a highly ethical and reputable Senator whose veracity I respect and believe that that circumstance does exist, and I stated in the absence of the leadership I would hope that the leadership would use their connections with the White House and their frequent contact with the White House to get that exchange of correspondence and make it available to the Senate.

I yield to the distinguished minority leader (Mr. Baker).

Mr. BAKER. I would like to say three things, if I may. I thank the distinguished Senator from Alabama for yielding.

He is correct, it was necessary for me to leave the floor briefly, and I was not here when the colloquy the Senator identified occurred. I will address that in just a moment.

I also was not here at the time of the propounding of the unanimous-consent request with respect to the farm bills, consideration of the farm bills. It is my understanding that the unanimous-consent request was put subject to the right to waive that agreement by the minority leader and certain others.

The PRESIDING OFFICER. The Senator is correct.

Mr. BAKER. I wish to tell the Chair and my colleagues that that agreement was cleared with me in advance and discussed with the Senator from Kansas (Mr. DOLE). It is a good agreement. I expressed my appreciation to him, the Senator from Georgia (Mr. TALMADGE) and the Senator from Alabama (Mr. ALLEN) for agreeing for us to proceed with these farm bills under the very difficult circumstances to occur, and there is no need for me to have that right to waive that agreement, and I will relinquish it herewith.

(This concludes proceedings which occurred during discussion of the Panama Canal Treaty.)

SUN DAY

Mr. DOLE. Mr. President, on Tuesday the Senate passed a resolution to proclaim May 3 as a national day to celebrate solar energy. This event, if followed through, will certainly help to make people aware of the potential for solar energy.

As preparations are made for Sun Day, I think that all of us realize that there are still enormous hurdles yet to be overcome before most solar technologies are ready for the marketplace. We all realize that besides a celebration, May 3 should carry the message to "keep working." We have yet a long way to go. On May 3, we should equally emphasize the Nation's need for talented people to become interested in the problems and to help the country move toward a future based on inexhaustible supplies.

THE PROBLEMS

For many of the new ideas involving solar, we have yet to show that they are economical. This is a problem of our engineers and scientists. There are also difficult problems to solve in removing the institutional barriers to getting solar energy into our economy. We have yet to prove to ourselves that we know how to accept new and innovative ideas, even after the technology has been developed.

These are problems for lawyers and social scientists. It would seem that the challenge of solar energy provides intriguing problems for a broad range of talent in this country.

Much of the problem however, lies with the scatter-gun approach this administration has taken in getting solar energy implemented in the United States. On the part of the Government, what is needed is a program to inform our citizens of the facts regarding solar, and an active program to identify the institutional barriers that preclude solar energy from being considered in many cases.

GETTING THE FACTS

At the present time, it is nearly impossible to determine the important facts about a piece of solar equipment. Solar collectors are available over a wide price range. Some solar panels are simple; others are very sophisticated. Some use air; others use liquid. This system is "active"; that system is "passive." Every vendor will tell you absolutely for certain that his model is worth the extra price.

But only one fact is certain. There is no way that the consumer has to compare the different products. There is no widely accepted standard to help the consumer decide which is the "better" system. In addition, it is not at all clear that solar heat is competitive with gas heat in many parts of the country. A consumer needs to know the cost of the alternatives as well as the cost of solar equipment. While we favor a future that includes widespread use of solar energy, still today we owe it to the consumer to help him make rational choices.

A valid role for Government is to provide this needed information. I have seen no indication that the Energy Department is preparing to get this kind of information out where it will do some good.

INSTITUTIONAL PROBLEMS

The second problem with solar energy is that there are institutional barriers. It is no secret that we are pretty slow to accept new ideas. A good example of this kind of problem was brought up in a letter I received from Mrs. Donald Bressler of Hoisington, Kans. She and her husband put a lot of money into a house that used the sun to satisfy 60 percent of their energy needs. They felt that the savings in fuel would offset the added expense of putting solar collectors on their house. They were then shocked to find that their taxes were twice as high as their neighbors. These tax laws and other barriers are being gradually removed, but progress is slow.

Here again, the Government can take a leading role in identifying the problems and in investigating the possible solutions that would be compatible with our other national goals. Today I would doubt that we even know what most of those institutional problems are.

GOVERNMENT HINDERS INNOVATION

Meanwhile, our Government, the Department of Energy in particular, has obviously yet to learn how to accept new ideas. Let me give you a final example.

We all know that wind energy is solar energy, and that electricity from windmills is pretty expensive by today's standards. Some of my friends from Kansas had what I think was a reasonable approach to making wind energy useful, especially for rural areas. They wanted to allow people to sell wind-produced energy for local use to help defray the cost of the windmill. This would also mean that the owner would not have to buy a gadget to store the energy.

It is an understatement to say that DOE rejected the idea. They never even considered it. Within a week after the idea was proposed to them, they returned all the material relating to the subject. At this point, if you asked the DOE what they did about this idea, they would probably have no record of ever having received it. You may find this hard to believe, but they even sent back the calling cards of the people who proposed the idea.

It is easy to get upset at how DOE treats people, but that is not directly the issue. The larger issue is that there is a disturbing lack of interest in solar energy on the part of the agency that we created especially to work on new energy ideas. They are discouraging innovation, instead of encouraging it.

MORE THAN A 1-DAY CELEBRATION

In closing, I would recommend much more than a 1-day celebration. I would like to see Sun Day become the beginning of a real Government effort to get to work on solar energy.

I am very much aware of the problems yet to be solved. Both my staff and I have spent a lot of time on these issues. We have also been continuously dismayed that the DOE can do so little with so much money. For the agency at least, I do not think they deserve to take a day off to celebrate. They should have much too much work for that.

The Sun Day resolution calls upon the President to "direct all appropriate Federal agencies to cooperate with and participate in the celebration of Sun Day."

The Congress recognizes that although we can proclaim a special day, it is really up to the agency to make that day a success.

So the real question is, what can we expect from the DOE on May 3. Will we see the unveiling of a major new program in solar energy. Will we see the beginnings of a unified R. & D. effort to get the price of solar electricity down? Or will we only see lipservice, cosmetics, and a little Madison Avenue?

I look forward to May 3, as a day that

will provide yet another opportunity for the DOE to demonstrate its ability, and its commitment to solving the Nation's energy problems. In spite of their past performance, I feel that the message must be apparent to them by now. Thus I feel hopeful that on May 3, we will see the agency rise to the challenge. The Senator from Kansas looks forward to learning of several new solar initiatives that will be announced on May 3.

MAKING BULLETS OUT OF DEPLETED URANIUM

Mr. DOLE. Mr. President, an article appeared in the Washington Star on March 14, reporting that the Pentagon is about to start using depleted uranium to produce bullets. They seem to have chosen this material for bullets because uranium metal is dense, and because depleted uranium is cheap. Needless to say, I find this proposal shocking.

On the one hand this shows a complete lack of sensitivity to a general fear of using radioactive materials. On the other hand, only a strange set of policy decisions could have made this material so cheap that anybody would consider using it for bullets.

RADIATION HAZARD

First of all, uranium is dangerous. If the DOD decides to pursue this project, much will be said during the next few months about the hazards of working with this material. If they do go ahead with this project, it will imply that the DOD is willing to subject their personnel to a new source of gamma radiation. Just when concerns are being expressed about the effects of low level radiation, this project implies that the DOD already has all the answers.

But without minimizing the importance of health and safety, I would like to bring up another side of this issue. One important fact has not been mentioned in the press. It is a fact that the depleted uranium, instead of being used for bullets, could be used eventually to produce electricity.

At a time when we continually hear of an increasing energy crisis, it seems to me that the energy content of the uranium should at least be considered before anyone decides that uranium is only useful because it is heavy.

DEPLETED URANIUM

Depleted uranium is the material left over after fuel is made for commercial reactors. The name is somewhat misleading, however, because there is an enormous amount of energy in this material.

To get that energy out, the material would have to be processed in a breeder reactor. In such a reactor, the material would be transmuted into plutonium and it could then be used as reactor fuel.

ENERGY CONTENT

Last night I did a little calculation to see just how much energy we were talking about putting into those bullets. It is remarkable. The Pentagon is talking about 3 ounces of uranium in each bullet. If that material were used as nuclear fuel, it would have the energy equivalent of about 700 barrels of oil—in each bullet.

The news report also talks about a program to make 730,000 of the bullets. That is the equivalent of 510 million barrels of oil. That much energy could substitute for 85 days worth of oil imports. Yet the proposed program completely disregards the fact that the uranium might have other uses besides being shot from guns.

WHY MAKE BULLETS

Mr. President, it is very interesting why the Pentagon should come up with uranium when they looked around for a material for bullets. Depleted uranium is dense, but so are many other metals, like tungsten. The reason uranium looks so good is that it is cheap.

And why is it cheap? It is cheap because this administration has decided to defer indefinitely, the development of a commercial breeder reactor. And if we do decide to do without the breeder, we will essentially waste the energy content of the 270,000 tons of depleted uranium that we already have available in this country.

Again, let me tell you how much energy we are talking about. The depleted uranium that is already above the ground, that 270,000 tons, represents more energy than all the coal yet to be mined in this country. It is a truly astounding amount of energy.

But at this point, the Pentagon is right. The metal is practically worthless. We should keep in mind however, that it is not worthless because it has no real value. It is worthless because the administration has decided that the United States is not going to exploit the energy in this material.

STILL HOPE TO BRING ON NEW SOURCES OF ENERGY

Mr. President, we all recognize that the future of the breeder reactor is somewhat in doubt at this point. But there are those of us who have not given up hope that our Government will finally see that more energy supplies are the only real solution to our energy problems. When that time comes, a new decision will be made and I am confident that this country will move ahead with an aggressive program to develop and commercialize breeder reactors.

But in the meantime, the country continues to accumulate depleted uranium as it makes fuel for ordinary reactors. The question is whether we will save this extremely valuable material for use later, or whether we will think of it as useless in the near term, good for nothing except making bullets.

It seems to the Senator from Kansas that there is only one possible choice. We have now realized that fossil fuels will not last forever. It is folly to waste fuel that we might need in the future. While this administration calls conservation the "cornerstone" of its energy policy, they must realize that their proposed use of depleted uranium would deny that fuel to future generations.

Mr. President, I would urge the administration to adopt realistic and consistent policy toward nuclear power and nuclear fuel.

We need to bring on all the alternative sources of energy that we can develop in this country. Breeder reactors are one alternative.

While we are still developing that technology, it is folly to treat uranium as though it is a worthless metal, suitable only for making bullets.

(Routine morning business transacted and additional statements submitted are printed later in today's RECORD.)

CONCLUSION OF MORNING BUSINESS

The PRESIDING OFFICER. Is there further morning business? If not, morning business is closed.

THE PANAMA CANAL TREATY

The Senate continued with the consideration of the Panama Canal Treaty.

ARTICLE I

ABROGATION OF PRIOR TREATIES AND ESTABLISHMENT OF A NEW RELATIONSHIP

1. Upon its entry into force, this Treaty terminates and supersedes:

(a) The Isthmian Canal Convention between the United States of America and the Republic of Panama, signed at Washington, November 18, 1903;

(b) The Treaty of Friendship and Cooperation signed at Washington, March 2, 1936, and the Treaty of Mutual Understanding and Cooperation and the related Memorandum of Understandings Reached, signed at Panama, January 25, 1955, between the United States of America and the Republic of Panama;

(c) All other treaties, conventions, agreements and exchanges of notes between the United States of America and the Republic of Panama, concerning the Panama Canal which were in force prior to the entry into force of this Treaty; and

(d) Provisions concerning the Panama Canal which appear in other treaties, conventions, agreements and exchanges of notes between the United States of America and the Republic of Panama which were in force prior to the entry into force of this Treaty.

2. In accordance with the terms of this Treaty and related agreements, the Republic of Panama, as territorial sovereign, grants to the United States of America, for the duration of this Treaty, the rights necessary to regulate the transit of ships through the Panama Canal, and to manage, operate, maintain, improve, protect and defend the Canal. The Republic of Panama guarantees to the United States of America the peaceful use of the land and water areas which it has been granted the rights to use for such purposes pursuant to this Treaty and related agreements.

3. The Republic of Panama shall participate increasingly in the management and protection and defense of the Canal, as provided in this Treaty.

4. In view of the special relationship established by this Treaty, the United States of America and the Republic of Panama shall cooperate to assure the uninterrupted and efficient operation of the Panama Canal.

The PRESIDING OFFICER. Are there amendments to article I?

Mr. ROBERT C. BYRD. Madam President, will the Chair recognize me?

The PRESIDING OFFICER. The Senator from West Virginia.

Mr. ROBERT C. BYRD. I had promised the distinguished Senator from Alabama that nothing would occur until he entered the Chamber.

Mr. ALLEN. The Senator is here.

Mr. ROBERT C. BYRD. I wanted recognition to keep my commitment, so the Senator is here now. The Senator and I are both here.

Mr. ALLEN. I thank the Senator.

Does the Senator desire recognition?

Mr. ROBERT C. BYRD. No. I only wanted recognition in order that I might take a little time until the Senator came into the Chamber.

Mr. ALLEN. I thank the Senator.

May I pose a parliamentary inquiry?

Mr. ROBERT C. BYRD. Yes, I yield the floor.

Mr. ALLEN. Madam President, are we now in the Committee of the Whole for the purpose of considering the Panama Canal Treaty?

The PRESIDING OFFICER. The Senate is considering the treaty as in Committee of the Whole.

Mr. ALLEN. I did not understand the Chair.

The PRESIDING OFFICER. The Senate is as in the Committee of the Whole.

Mr. ALLEN. I thank the Chair. That would mean then that shortly we will start considering the Panama Canal Treaty which, I might say, many people throughout the country think was approved on yesterday. But we will start considering the Panama Canal Treaty article by article shortly, is that correct?

The PRESIDING OFFICER. We are considering that treaty article by article right now.

Mr. ALLEN. Very well. We have article I before us?

The PRESIDING OFFICER. Article I is before us.

Mr. ALLEN. I thank the Chair.

Madam President, as we consider article I of the treaty, I think it might be well to take stock of just where we stand with respect to the two treaties that have been submitted to us by the President of the United States, resulting from negotiations between the Panamanian Government and our Government with respect to the disposal of the Panama Canal, the transfer of the canal to Panama, which would take place at the end of this century, and then the approval of the so-called Neutrality Treaty, which really provides for the defense of the canal starting in the year 2000.

Yesterday the Senate, with one vote to spare, did approve the Neutrality Treaty. What, then, was the effect of the approval of the Neutrality Treaty? That vote gave tentative approval to the Neutrality Treaty. It provides that if the Panama Canal Treaty is approved by the Senate, and notes of ratification are exchanged by the two Governments, the treaties will not go into effect, I believe, until 6 months after the exchange of the notes of ratification. Therefore, such rights as might be conferred by the Neutrality Treaty are inchoate rights; they have not sprung into being as yet. They are more or less in a state of suspended animation awaiting further action by the U.S. Senate and the executive department.

This is a strange situation, and it really comes about as the result of the decision of the leadership to place the Neutrality Treaty ahead of the Panama Canal Treaty in Senate consideration of the two treaties.

I urged that the leadership not do that; that that was putting the cart before the horse. We ought first to decide whether are are going to give the Panama Canal away, and under what conditions, before we talk about defending it in the year 2000.

Madam President, I made a motion to that effect, and we had a rollcall vote here in the Senate on it. The Senate decided by a vote of 67 to 30 to abide by the leadership decision and consider the Neutrality Treaty first.

I pointed out to the leadership, both privately and on the floor, that going the route of considering the Neutrality Treaty first would deprive many Senators of the privilege of voting for the Neutrality Treaty. I urged that we decide first the basic question, the question of whether or not we are going to give the canal away, before we worry about defending it in the year 2000.

I pointed out that if the Panama Canal Treaty were being considered first, and that treaty was approved by the Senate, there would probably be five, six, or seven amendments offered to the Neutrality Treaty, but that in the final analysis, having already agreed on the Panama Canal Treaty—if this had been the case—there would probably have been a well nigh unanimous vote for the Neutrality Treaty.

No one objects to the defense of the canal. The chief objection raised here on the Senate floor has not been to the ultimate approval of the Neutrality Treaty, if the decision is first made to give the canal away, but to strengthening amendments that were sought to be added to the treaty by Members of the Senate giving the right to continue to maintain troops in the Panama Canal Zone if it were necessary for the defense of the canal.

But, no, the leadership wanted to leave the provisions of the treaty just as they were, requiring full withdrawal of our troops, the abandonment of all of our bases, by the year 2000.

I pointed out to the leadership, both privately and on the floor, that going the route they were going would take more time than going the route of considering the basic question first. I suggested a difference of a week in the ultimate timing of action on both treaties.

I pointed out, too, that if the Panama Canal Treaty had first been approved, many Senators who felt on yesterday that it was necessary to oppose the Neutrality Treaty, because it was and is part and parcel of the Panama Canal Treaty, would have been glad to have voted for a strong defense treaty. If the other treaty had been acted upon first, I daresay the defense treaty, the Neutrality Treaty, could have been acted upon in not over 2 or 3 days.

No, they said they had to act on the Neutrality Treaty first because some of us cannot vote for the Panama Canal Treaty unless we have a Neutrality Treaty first.

Well, of course, they knew that the same provision is in the Panama Canal Treaty as is in the Neutrality Treaty, that each one goes into effect simultaneously with the other, no matter which is considered first. Furthermore, the leadership amendment was cosponsored by some 78 or 80 Senators, so there was no doubt but what the Neutrality Treaty would be approved and, furthermore, one could not go into effect without the other.

Because of the choice of the leadership we now have the basic question, the propriety of giving up the Panama Canal, still undecided—and very much undecided, I might add.

I assume, Madam President, that that was part of the strategy of the leadership. They are very wise and very astute; they are great Senators, with over 60 Senators following their recommendations on questions before the Senate. I have to take that back: On one amendment we received 41 votes, on an amendment I offered. I guess really they are in command of only 59 Senators on any question concerning the treaties which might come up.

The effect of the leadership action in putting the wrong treaty first has left us, after 5 weeks of debate, with the basic question, the only real question which is in dispute aside from the adequacy of the defense rights given us under the Neutrality Treaty. The only real question in dispute is, Shall we give the canal away, and under what circumstances?

That still remains to be acted upon.

Madam President, the main thought I wish to get across, not only to the leadership and the Members of the Senate but to the people of the Nation, is that this fight is just the beginning; that no momentum has been built up that is going to move like a steamroller to the approval of the Panama Canal Treaty. If there is any thought of a buildup of momentum, let me disabuse the thinking of those who feel that that is the case. No momentum has built up, because we have not even started considering the basic and fundamental issue.

Madam President, it is rather strange that all of this effort we have gone through with respect to these treaties, including the approval by the Senate of the Neutrality Treaty, the defense treaty, will have been nullified and held for naught unless the Panama Canal Treaty is agreed to. What good would the Neutrality Treaty be if the canal stays the property of the United States or, to word it more accurately, if the 1903 treaty remains in full force and effect?

Madam President, we have a situation that I would say is somewhat analogous to two baseball teams, shall I say, playing two games, the first game being an exhibition game, not part of the regular season play of that league; then the next game being part of the regularly scheduled season between the two teams. The only game the outcome of which would be considered in the averages of the season would not be the exhibition game, which counts for nothing in the standing of the team. The only game that would have any standing in the league averages would be the regular season game. So, carrying that analogy one step farther, what we have done thus

far is something of a preliminary action, an exhibition game, a straw vote, as it were—a very high level straw vote, I might say, a vote of 68 to 32. That is the way the Senate voted on the Neutrality Treaty; but unless the Panama Canal Treaty is approved by a two-thirds majority in the Senate, this action taken on yesterday will be in effect vitiated, held for naught.

If we had gone the other route and considered it first, as I had stated, I would feel we would have had a wellnigh unanimous vote for the Neutrality Treaty. So the battle has yet to be won. The battle lies ahead.

The basic and fundamental issue, the transfer of the canal—some Senators object to the use of the words "giveaway of the canal," so I am going to try, as often as I can, to refer to this as the transfer of the canal, since it is not pleasing to some Senators to say the giveaway of the canal. But the basic and fundamental issue before the Senate is, shall the canal be transferred to Panama; shall conditions be set up that would change this nonprofit operation by the United States of the canal into a profitmaking operation which the United States carries on for 22 years for Panama and, thereafter, Panama would carry on for itself; and is the American taxpayer going to be called on to pay tens and hundreds of millions of dollars?

Assurances have been given by the President himself, by the way, in his fireside chat, that payments to Panama are going to come out of Panama Canal tolls. So I think we want to write that—I might say also that statement has been made here on this floor time and time again. So I think, in the interest of the American people and in the interest of the taxpayers of the United States, we are going to want to write that into the treaty—not merely add it to the treaty in some reservation.

By the way, these reservations—I have not listened to the radio or TV this morning; I have not read the morning paper, as a matter of fact. I heard other Senators say this morning that Mr. Torrijos is saying he does not much like these reservations. I say to the distinguished Senator from North Carolina (Mr. HELMS), who is listening attentively here, that I consider that an act. I do not think he has any doubt at all that he is going to accept these reservations and be overjoyed at doing so. I have said here on the floor that I believe he would accept 100 amendments. This is the opinion of the Senator from Alabama; I am not stating this as a fact. I believe he would accept 100 amendments to this treaty to get that $100 million a year start rolling in down in Panama to bolster his dictatorial regime, I say to the distinguished Senator from North Carolina.

Mr. HELMS. Will the Senator yield?

Mr. ALLEN. Yes, I yield.

Mr. HELMS. Not only is the dictator Torrijos acting, I would say there are a number in the Senate and others downtown who would qualify at least for an Academy Award, I say to the Senator from Alabama.

Mr. GRIFFIN. Will the Senator from Alabama yield?

Mr. ALLEN. Yes, I yield.

Mr. GRIFFIN. The Senator from Alabama may well be correct in his appraisal of the reaction by General Torrijos. However, a matter that disturbs this Senator very much relates to an exchange, within the last 48 hours, of telephone calls and an exchange of letters between the President and General Torrijos relating to the reservations that were being considered in the Senate. I now find, by reading the morning papers—not from any information provided by the White House—that a letter was received at the White House yesterday from General Torrijos, apparently in response to a letter sent by President Carter to General Torrijos on Wednesday, and that these letters pertain directly to the matter under discussion in the Senate. Despite the fact that this Senator, early in the debate on yesterday, following a CBS report by Phil Jones, called upon the White House to provide us with a report as to previous telephone conversations and the letter sent by President Carter, no information was provided to the Senate.

I suppose some would say, "Well, now, Senator GRIFFIN, did you call up the President and make that request personally?" No, I did not. But, of course, I know that Hamilton Jordan has the radio on down at the White House. At least, I read that he does. At the White House, they have turned off the music and are listening to the debate in the Senate. At the White House, they know what we are saying up here. I have no doubt about that.

I find it rather disturbing that the exchange of letters between the two heads of Government was not made available to the Senate yesterday before the vote. I do not know precisely what was in the letters. In the news reports this morning I find strong indications that the President apparently was seeking to assure the Panamanians that the reservations and amendments being adopted in the Senate are meaningless and will not change the treaty.

Mr. ALLEN. Is the Senator talking about the amendments to the resolution of ratification?

Mr. GRIFFIN. And certain reservations, particularly the one offered by Senator DECONCINI.

Mr. ALLEN. In other words, agreeing to something here that he was assuring Torrijos did not mean anything, is that right?

Mr. GRIFFIN. Obviously, until we see the letters, it is difficult to say what is in them.

Mr. ALLEN. Yes.

Mr. GRIFFIN. But there is every reason to be concerned that while Senators were being assured, on the one hand, that their amendments were meaningful, in order to get their vote, there were assurances being given to the Panamanians or General Torrijos that the same amendments would not change anything.

Mr. ALLEN. That is a very interesting circumstance.

Mr. GRIFFIN. I should like to see the letters.

I also learned by reading the papers that the exchange of correspondence I am referring to was read over the radio in Panama on yesterday. In other words, the letters are not a secret down in Panama, but they are a secret in the U.S. Senate. Is that not an interesting situation?

Mr. ALLEN. Yes; I might say to the distinguished Senator from Michigan (Mr. GRIFFIN) that that is the pattern that they apparently have had down in Panama. The Senator will recall that when the President and the dictator entered into this so-called memorandum, as quickly as Torrijos got back to Panama he put an entirely different interpretation on what the memorandum meant from what our people up here were saying it meant. That very same interpretation was carried forward into the leadership amendment, because the leadership amendment was in fact the memorandum between the President and the dictator.

So just following the same pattern, if what the distinguished Senator says is correct about it being broadcast down in Panama, do I understand him to say that the President's letter was broadcast over the Panamanian radio?

Mr. GRIFFIN. That is my understanding from reading the various press reports this morning: The letter of President Carter to General Torrijos on Wednesday, and a response from General Torrijos to the President, which was delivered to the White House before yesterday's vote, were both read on the Panamanian radio yesterday. Apparently—and I wish to emphasize that I do not know the contents of the letter yet—apparently the purpose was to assure the Panamanian people that the amendments and reservations being adopted in the Senate after being "accepted" by the President, really would not change the treaty.

I take it that was the purpose of it.

Mr. ALLEN. And the Senate is the last to know about what is going on, really.

Mr. GRIFFIN. We were.

Mr. ALLEN. Between them.

Mr. GRIFFIN. We are entitled to know what was in the exchange of correspondence, which was not provided to us or to the American people.

Mr. ALLEN. Did the Senator request it of the White House?

Mr. GRIFFIN. Well, I did not know, of course, at the time I did not know there was a letter from General Torrijos to President Carter. I thought the Senate should be advised in a report provided to the Senate concerning the communications in recent days between the President and General Torrijos.

I was aware, because of a report by CBS yesterday morning, that on Wednesday the President had talked personally with General Torrijos on the telephone about these matters of concern involving the DeConcini reservation, and also that there was a letter from the President to General Torrijos.

Now, despite the public request to the President and to the White House to provide that information to the Senate it has not been forthcoming. In addition, the situation is compounded by the fact that later in the day, but before the vote, there was a letter, according to press reports, from General Torrijos to the President. I think that letter would have been

very important information for the Senate to have had on yesterday.

Mr. ALLEN. Yes.

Mr. GRIFFIN. Would not the Senator agree?

Mr. ALLEN. I would certainly agree.

As soon as some of the leadership people come in—I rather imagine, possibly, they are listening to the proceedings over the radio or over the various squawk boxes that we have or some Senators have. I do not have one myself. They are probably listening to this. I should say that I feel what the distinguished Senator from Michigan feels, that would be appropriate, not only to have these letters, the correspondence between the President and Torrijos as to the amendments under consideration in the Senate—and when I say, "amendments" I mean not only amendments to the treaty, but amendments to the resolution of ratification. I think that would really have an important bearing on the bona fides of the whole operation. It would seem to me if the Senate is being assured that the reservation means something and if—and I do say "if," because I do not know if a different connotation is being placed on these amendments in assurances to Panama. I think we would need to know about that. There is nothing we can do about the action on the treaty because the action has already been sought to be reconsidered by the leadership as a parliamentary move, and then that motion has been tabled; but certainly if that is the manner that they have of treating amendments, saying here in the Senate that it means something and saying to the dictator that they do not mean anything, I think it is highly important that that correspondence come in, and along the same line, that the telephone conversations come in.

I would vote to call right now on the leadership, in their contact with the White House—and I assume they are in daily contact with the White House; the Senator from Alabama is not, but I imagine that they are—or in one of their victory celebrations, it could be brought up at one of those sessions that some Senators here would like to have this same correspondence; and I am calling on the leadership at this time, over the weekend, to obtain for the Senate this information to which the distinguished Senator from Michigan (Mr. GRIFFIN) has alluded, and I think it is very important to find out under what circumstances and what differing interpretations of language we were proceeding on yesterday, and then the weight that we are going to give to amendments offered here in the Senate under the assurance to us that they mean something, while assurances are being given to the other party that they mean nothing.

I am assuming that that is the thrust of what the distinguished Senator is saying.

Mr. GRIFFIN. The Senator from Alabama is precisely correct. And, of course, one could only engage in speculation at this point, without having those letters before us and being able to read them, but certainly one must wonder, if that information had been available to the Senate yesterday, whether the vote would have been the same.

Mr. ALLEN. Well, I think it might be well to put a time, not only a date, but a time for the dispatch of the President's letter or communication or phone call, the time of day as well as the date itself.

Would the Senator join in the request of the Senator from Alabama that those letters and a log of those phone calls be made available to the Senate on Monday?

Mr. GRIFFIN. Oh, well, I would hope that the White House——

Mr. ALLEN. Or possibly today.

Mr. GRIFFIN. This is the Senate of the United States. We are a coordinate, equal branch of the Government with a responsibility of high order. I would think the President would immediately provide those letters to us upon request. I will be surprised and shocked if that is not the case. I do not understand why this information was not provided yesterday before the vote.

Mr. ALLEN. The distinguished Senator seems to think they might have sent it up by limousine within the hour, possibly.

Mr. GRIFFIN. I would hope so, if the White House staff is listening on the radio down there, as I am sure they are. Of course, they may not be quite as interested in the debate this morning.

Mr. ALLEN. Well, they had better start taking an interest, because, as the distinguished Senator from Michigan knows, the battle is just now getting started.

Mr. GRIFFIN. Before I forget, I ask unanimous consent that various articles which appeared principally in the New York Times and the Washington Post providing the background from which I am speaking be printed in the RECORD.

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

[From the Washington Post, Mar. 17, 1978]

PANAMA HAILS VOTE; SENATE RESERVATION MAY CAUSE TROUBLE

(By Karen DeYoung)

PANAMA CITY.—The Panamanian government yesterday called the U.S. Senate's ratification of the Panama Canal neutrality treaty "a historic moment for the country," but warned that it would study carefully a reservation the Senate approved in its action on the treaty.

The reservation authorizes the use of U.S. military force in Panama, and the government here said it will determine if that alters the treaty objectives or violates Panamanian sovereignty or integrity.

In a radio address to the country minutes after the Senate vote, chief treaty negotiator Romulo Escobar Betancourt said that Panamanian head of state Gen. Omar Torrijos sent a letter to President Carter yesterday outlining possible problems with the reservation.

Panama, the Torrijos letter said, will find "unacceptable any reservation that dishonors the national dignity, that changes the objectives of the treaty, or is intended to impede the exercise of Panama's sovereignty over all of its territory or the U.S. military withdrawal on December 31, 1999."

A government spokesman said the letter referred primarily to the reservation proposed by Sen. Dennis DeConcini (D-Ariz.) and approved by a 75–23 vote preceding the ratification approval.

The reservation authorizes both Panama and the United States independently to use military force in Panamanian territory should the canal be closed or its operations interfered with, even after the 1999 withdrawal date.

Panama has long objected to any provision of the neutrality treaty that would authorize a U.S. military presence here without Panamanian permission.

Torrijos was believed to be greatly angered by the proposed reservation. It puts him in the difficult position of explaining to the Panamanian people a possible eventuality—U.S. invasion of Panama should canal operations be interfered with—that he had promised them would not occur.

Escobar said Torrijos had received a letter Wednesday and a telephone call yesterday afternoon from President Carter explaining the additional provision and the probability of its passage.

A lengthy radio explanation of the reservation, including a full reading of the texts of the Carter-Torrijos letters, was apparently an attempt to head off anticipated criticism here of the DeConcini provision and circumvent the need for an additional Panamanian referendum to approve it.

While pledging that the issue would be carefully studied, Escobar said that, in principle, the government considered the reservation "allowable" since it did not affect the "essence or content" of the treaty itself.

Specifically, he said, the reservation did not affect the scheduled 1999 closing of U.S. bases and complete withdrawal of U.S. troops stationed here.

Torrijos spent the day closeted with his Cabinet in the downtown house of a friend. Reporters converging on the scene after the Senate vote were told that Torrijos had "nothing to say" in addition to the Escobar statement.

While anticipated large-scale anti-treaty demonstrations did not occur, a small group of University of Panama law students paraded on the campus with banners reading, "No to the Right of Yankee Intervention in Panama." Students said the turnout—no more than 30—was low because the university is currently in spring recess.

A spokesman for a group of Panamanian attorneys who have been outspoken treaty opponents said they would meet to compose a protest statement.

"We think [approval of the DeCorcini reservation] was an elegant way for the Senate to reject the treaty," he said. The attorneys maintain, and the spokesman said the senators are aware, that the additional provision will require another referendum on the treaties here.

A referendum, required by Panamanian law, was held here last October and showed that 66 percent of the population approved the treaties. The lawyers said that the "wording of the referendum question did not say anything about changes on reservations," and thus new provisions require a new vote.

In the U.S.-controlled Canal Zone, most ignored the final Senate debate until the last moment, when they turned on their radios to hear the live Southern Command Network broadcast. Canal company spokesman Al Baldwin said he "never saw [the Canal Zone] so quiet in my life."

While the predominantly antitreaty Zonians took the news of passage of the treaty in relative silence, the radio perhaps expressed the sentiment of some.

A country music broadcast following the end of the debate and vote began with a mournful song entitled "You can take this job and shove it, I ain't working here no more."

[From the New York Times, Mar. 17, 1978]

PANAMANIANS RELUCTANTLY INDICATE THEY ACCEPT PACT'S RESERVATIONS

(By Alan Riding)

PANAMA CITY, March 16.— With evident reluctance, the Panamanian Government indicated tonight that it would accept the last-minute reservations attached to the new Panama Canal neutrality treaty before it was ratified by the United States Senate today.

In a nation-wide radio broadcast immediately after the Senate vote, Panama's chief treaty negotiator, Romulo Escobar Betancourt, said that "the fundamental objectives sought by Panama in the treaty have not been affected by the reservations."

He said that Panama's chief of government, Brig. Gen. Omar Torrijos Herrera, had ordered that the various amendments and reservations attached to the neutrality treaty this week be carefully studied by officials here before a formal response is made to the United States.

But Dr. Escobar added: "In principle, we consider that these reservations are very digestible since they do not touch the foundations, essence or content of the neutrality treaty, above all such basic provisions as the [United States] military withdrawal by Dec. 31, 1999."

Diplomatic sources nevertheless indicated that General Torrijos and the Panamanian negotiating team were particularly distressed by the reservation adopted by the Senate today granting the United States the right to send troops into Panama after the year 2000 if the canal were closed, even by a strike.

STORM OF PROTEST EXPECTED

But rather than reject the reservation out of hand or risk defeat of the treaties in a new Panamanian plebiscite, General Torrijos has apparently decided to try to ride out the storm of protest that is expected to follow the spelling out of the American right to intervene here after 2000.

Leftist and Nationalist opposition groups that campaigned against Panamanian ratification of the treaties last October are now expected to begin a new offensive, contending that Panama has been forced to make too many concessions to Washintgon. "At the very least, we should have another plebescite," said a spokesman for the left-of-center Independent Lawyers' Movement.

A small group of leftist students held a brief demonstration against the treaties on the university campus here this afternoon, but few young people attended because high schools and the university are closed for vacation. When classes reopen next month, however, more protests are planned.

To forestall an angry reaction by the Panamanian Government to the reservations, the Carter Administration has maintained close contact with General Torrijos over the last four days of Senate debate, with a top American treaty negotiator, Ambler Moss, Deputy Assistant Secretary of State for Congressional Relations, sent to explain the reservations to senior officials here.

President Carter also wrote to General Torrijos yesterday morning and had a telephone conversation with him later in the afternoon. In his letter, according to Dr. Escobar, Mr. Carter indicated that "everything possible to insure that the reservations are in accordance with the general objectives of the treaty" had been done.

In his response to President Carter, sent last night, General Torrijos expressed gratitude for Administration efforts to insure Senate ratification of the treaties and indicated that Panama would study the reservations with great care.

"Our study will be guided by the following principles," he told Mr. Carter. "For Panama, any reservation will be unacceptable if it affects national dignity, distorts or changes the objectives of the treaty or is aimed at impeding the effective exercise of Panama's sovereignty over all its territory, the handover of the canal or the military withdrawal by Dec. 31, 1999."

ANY MOVE AT 'INTERFERENCE' REJECTED

General Torrijos said that the Panamanian people would not accept "words or ambiguous phrases that imply or mean perpetual occupation or interference in our internal affairs disguised as neutrality."

The key reservation adopted by the Senate this morning had the effect of dampening any immediate celebration over the United States ratification of the neutrality treaty that, with the new canal treaty that is still awaiting final American approval, should eventually replace the 1903 treaty that gave the United States control over the canal and the Canal Zone "in perpetuity."

After his broadcast speech, Dr. Escobar told reporters that today's vote was "a great triumph." But General Torrijos, ensconced with his advisers in a well-guarded house in a residential district of Panama City, refused to speak to the press.

Asked by reporters if Panama was angered by the last-minute reservations, Ernesto Solis, the general's spokesman, said: "We have never been angry, we have always been expecting justice from the United States." Asked if Panama had now obtained justice, he added: "We hope we will get it."

U.S. WORRIED OVER PANAMANIAN REACTION

WASHINGTON, March 16.—The Carter Administration was concerned tonight about Panamanian acceptance of the amendments and reservations to the Neutrality Treaty.

In particular, Administration officials feared the reaction of General Torrijos to the reservation proposed by Senator Dennis DeConcini, Democrat of Arizona, that in effect would give the United States the right to send troops to Panama to reopen the canal or restore operations on the waterway, if such actions should ever be deemed necessary, after Panama takes control.

Mr. GRIFFIN. Will the Senator yield me 30 seconds more?

Mr. ALLEN. Yes.

Mr. GRIFFIN. I have a little bit of additional information to add to our colloquy.

I do not have available the complete letter from General Torrijos to President Carter which was delivered on yesterday, but there is now available from an authoritative source the fact that the letter from General Torrijos to President Carter included this sentence:

In your letter and your conversation—

And that refers to the telephone conversation—

you informed me the Senate will introduce some reservations, but that they do not alter or lessen the contents of what was agreed to in the Neutrality Treaty or in our statement of October 14, 1977.

Mr. ALLEN. Very interesting.

Mr. GRIFFIN. Yes. I hope the letters will be provided so we can see exactly what it was President Carter wrote to General Torrijos.

Of course, it would be even more interesting if we could have a transcript of the telephone conversation as well—all of which was pertinent and important information and should have been available to the U.S. Senate as we were proceeding yesterday to a vote on the treaty.

The fact that a public request had been made for the information and that it was not provided is very disturbing to this Senator.

Mr. ALLEN. I feel the information will be made available. I have that much confidence in the administration and the openness of this administration. But I feel sure that will be forthcoming.

(A colloquy concerning emergency farm legislation which occurred at this point is printed earlier in today's RECORD, by unanimous consent.)

Mr. BAKER. On the matter of the alleged exchange of correspondence between the White House and General Torrijos, I would tell my friend from Alabama that I have no knowledge of that. I have not been informed of such letters. I do not know of such letters. I heard of them first this morning.

Mr. ALLEN. It may not have been letters but communications in other forms.

Mr. BAKER. I do think on that score I would say that on yesterday I was advised by the Vice President's office that the Panamanians have expressed concern about the DeConcini reservation. But no mention was made to me of letters, and if there are letters, I must say I think the Senate is entitled to those letters.

Mr. ALLEN. I thank the Senator.

Mr. BAKER. I joined with the opponents of this treaty in insisting, for instance, that we have full access to the implementing legislation for these treaties. That is unprecedented. I am told no other administration has ever submitted implementing legislation for treaties in advance of the vote on ratification.

But as the Senator from Alabama may know, in response to a request made by the distinguished Senator from South Carolina (Mr. THURMOND) and others on my side, I wrote to the Secretary of State and insisted that we have a full draft of the implementing legislation proposed for these treaties before we voted on them, and that was done.

I am pleased it was, because I have been insistent that every Member of the Senate on my side of the aisle, indeed, every Member of the Senate, for or against the treaty, have every scrap of information which is relevant to our intelligent determination of these issues. I think these letters, if there are letters, fall in the same category. I herewith express my support for any request for such letters, or copies of those letters, if they exist. If they do not exist, of course, it is a different matter.

My only motivation is to see that the Senate have all the facts and all of the relevant detail and material, all the documentation, necessary to make an intelligent, reasoned and rational decision on these treaties. Nothing should be withheld.

Mr. ALLEN. I thank the distinguished Senator.

Mr. ROBERT C. BYRD. Will the Senator yield?

Mr. ALLEN. Let me answer and then I will yield.

I have never stated other than I have great admiration for the distinguished Senator (Mr. BAKER), our distinguished minority leader. I have confidence in his openness, his fairmindedness, his candor, and his willingness—not only

his willingness but his determination—to ascertain the facts. I appreciate his attitude. I have certainly not in any sense been critical in the slightest of the Senator.

Mr. BAKER. If the Senator will yield, I did not believe the Senator from Alabama had been critical. I simply wanted to reiterate what I am sure the Senator already knew, that I insist the Senate have every document, whether it helps or hurts the treaties, that we have every document and every bit of information.

Mr. ROBERT C. BYRD. Will the Senator yield?

Mr. ALLEN. I yield.

Mr. ROBERT C. BYRD. Mr. President, did I understand the distinguished Senator to say that he felt we would arrive at an agreement which would include a vote on the resolution of ratification within a reasonable length of time?

Mr. ALLEN. Yes.

Mr. ROBERT C. BYRD. But that it would be after the Easter nonlegislative period before we could reach such an agreement?

Mr. ALLEN. Yes. I would like to suggest that is not unfair. The distinguished majority leader has already scheduled two bills which have 6 hours each on them, starting on Tuesday, with leave to amend. They might well take the entire remaining period that we have prior to the recess. I would hope the distinguished majority leader would not think it was unreasonable to allow us to get back from our recess, assess the situation, debate the matter for possibly 2 or 3 days and then sit down and seek to come to a reasonable agreement on a time certain to vote. We did work that out on the Neutrality Treaty. I am confident we can do it again.

Mr. ROBERT C. BYRD. I appreciate what the Senator has said. I do not understand what he means when he says that the consideration of the farm bill would be continuing to the beginning of the Easter nonlegislative period.

Mr. ALLEN. It is possible that it might. I thought both bills had 6 hours with leave to amend.

Mr. ROBERT C. BYRD. It has been reduced to 4 hours each, with the understanding that any motions, appeals, and so on, would come out of those 4 hours.

Mr. ALLEN. That would take 1 full day, then.

Mr. ROBERT C. BYRD. It would take 1 full day.

Mr. ALLEN. I misunderstood the time.

Mr. ROBERT C. BYRD. I hope that the Senate will be able to enter into an agreement before the nonlegislative period for the observance of Easter, which would lay down a definite date at some point following that nonlegislative period when the Senate could reach a final decision on the resolution of ratification for the Panama Canal Treaty. My thought was if we could agree to a date during the week of April 10, that would allow us 5 days before the nonlegislative period, and it would allow us up to 10 days, not including Saturdays, and we could utilize Saturdays, following the nonlegislative period. It would make a total of something like 15 days which would seem to me to be adequate in view of the fact that we actually have been debating this treaty into the 23d day. While the Senate was considering the Neutrality Treaty, it was also debating the Panama Canal Treaty.

As the distinguished Senator from Alabama has so correctly stated, both of these are one package and the debate has been rather frequently far reaching. There has been no attempt to confine the debate on the Neutrality Treaty.

Actually, with the treaties having been debated for 22 days prior to today, I do not think it is unreasonable for the majority leader to express the hope that before next Thursday evening at the close of business when we begin the nonlegislative period which was scheduled previously and announced to run from the close of business on Thursday, March 23, until Monday, April 3—that nonlegislative period had been laid out for Senators so they could schedule engagements in their home States—we could reach an agreement which would assure the Senate that it would dispose, one way or the other, up or down, of this Panama Canal Treaty.

I think we should have every reason to hope that after 5 days, beginning today, and concluding those 5 days next Thursday, and then taking the first 5 days when we return, and the second 5 days, into the week of April 10, there would be 3 weeks of debate on this treaty. It seems that would be a very reasonable suggestion. I hope the distinguished Senator from Alabama will give this his consideration over the weekend. We might arrive at an agreement one day next week.

Mr. ALLEN. I appreciate the courtesy and graciousness of the distinguished majority leader. Certainly, I can find no fault with what he has suggested. I believe we could reach pretty much the same end result if we did wait until after the recess. I am certainly not trying to prolong the debate. I do not know what it is going to encompass before we get into it. That is the reason I would like to debate it for the rest of this week, or until the recess, and then take an assessment of the situation soon after we come back.

I point out that no dilatory tactics have been used with respect to the first treaty. Senators were ready and, as a matter of fact, standing in line most of the time in order to speak. There were no quorum calls of any large number which were requested.

Mr. ROBERT C. BYRD. Mr. President, may we have order in the Senate?

The PRESIDING OFFICER. The Senator will suspend. Will Senators wishing to carry on conversations please retire to the cloakrooms?

Mr. ALLEN. I will say that fewer than 10 quorum calls have been called for during this debate. The Senator from Alabama did not make a single request for a quorum call until the last day of the debate, at a time when he felt a quorum call was appropriate.

I assure the distinguished majority leader there is going to be no effort to use dilatory tactics. There will be no filibuster by amendment. Only legitimate amendments will be offered. There will be an effort made, however, to protect the interests of the United States and to protect the interests of the taxpayers of the United States. I know the distinguished majority leader wants to accomplish the same end result. I think in time we can work out a very fair and reasonable agreement. It might not take the length of time the Senator suggests.

Mr. ROBERT C. BYRD. Mr. President, what the Senator says encourages me. I hope that it will be possible, after the nonlegislative day period, to reach an agreement which would bring about a final vote earlier than the date which was included in my suggestion. However, I think that, unless we are able to reach an agreement before the evening of next Thursday—and I do not rule that out; I hope the distinguished Senator from Alabama will give further thought to it over the weekend and during next week, and talk with others who are on his side in this matter. I hope that we could still reach an agreement.

Mr. ALLEN. I hope the Senator will not proceed further than that, because if the Senator is getting ready to say what I fear he is getting ready to say, I do not believe that would be conducive to reaching an agreement. I hope he will leave it where he has now stopped.

Mr. BAKER. Mr. President, will the Senator yield for just a moment?

Mr. ROBERT C. BYRD. Will the Senator allow me to regain my composure? [Laughter.]

I think that this is about the first time that I can recall that I have been left completely disarmed, speechless, and helpless. He anticipated what I am going to say and cut me off at the pass.

Well, I shall not proceed to say what I was about to say. In good humor, may I say that I have been encouraged by what the Senator from Alabama has said.

May I just close on this St. Patrick's Day by saying that if we can reach agreement, we will not get to that sad state of affairs to which the poet alluded when he said:

There once was two cats from Kilkenny.
Each thought there was one cat too many.
So they quarreled and they fit;
They scratched and they bit;
'Til barrin' their nails
And the tips o' their tails,
Instead of two cats, there weren't any.

I hope that the two sides will not proceed to the point that there is nothing left but their nails and the tips of their tails.

Mr. PERCY. Will the Senator yield?

Mr. ALLEN. Yes, I am going to yield the floor in just a moment. I shall be delighted to yield at this time to the distinguished Senator from Illinois.

Mr. PERCY. May I have the attention of the distinguished majority leader?

Mr. ALLEN. If the Senator will excuse me, I shall yield the floor.

Mr. ROBERT C. BYRD. Will the Senator yield to me for just a moment?

Mr. ALLEN. Yes. I yield to the distinguished majority leader.

Mr. ROBERT C. BYRD. Mr. President, I have in my hands a letter dated March 17, 1978, which is this date, addressed to me by Douglas J. Bennet, Jr., Assistant Secretary for Congressional Relations, which reads as follows:

DEPARTMENT OF STATE,
Washington, D.C., March 17, 1978.

Hon. ROBERT C. BYRD,
U.S. Senate.

DEAR SENATOR BYRD: You may wish to share with the Senate the exchange of correspondence between President Carter and General Torrijos which occurred in connection with the Senate's vote on the Neutrality Treaty. Copies of both letters are enclosed.

With best wishes,

Sincerely,

DOUGLAS J. BENNET, Jr.,
Assistant Secretary for Congressional Relations.

Mr. President, I shall make arrangements to see that all Senators have copies of these letters. I ask unanimous consent that they be printed in the RECORD.

Mr. ALLEN. The cover letter is dated today. Would the Senator mind saying the date of the letters enclosed?

Mr. ROBERT C. BYRD. I have not had opportunity to read them. As I look at them now, they are dated March 15.

Mr. ALLEN. I see.

The PRESIDING OFFICER. Did the Senator from Alabama object to the unanimous-consent request?

Mr. ALLEN. No; I have no objection.

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

MARCH 15, 1978.

MY DEAR GENERAL: As you know, the Senate is now approaching the end of its debate on the Neutrality Treaty. Although we expect the final vote to be close, we remain hopeful about the result.

We have made good progress since last September when you and I signed the Treaties. The Senate Foreign Relations Committee endorsed the Treaties by an overwhelming vote. In the Senate debate, we have fortunately been able to prevent any amendments to the Treaty other than the so-called "Leadership" amendments to Articles IV and VI. These incorporate exactly the terms of the Statement of Understanding published after our conversation of October 14.

In considering its Resolution of Ratification of the Treaty, the Senate will almost certainly attach a number of reservations, conditions or understandings reflecting certain of its concerns. We have made every effort and have been successful to date in ensuring that these will be consistent with the general purposes of our two countries as parties to the Treaty. I hope you will examine them in this light.

After approving the Neutrality Treaty, the Senate will move immediately to consider the basic Panama Treaty. While there will be problems, I am hopeful that the outcome will again be favorable, and that the two Treaties combined will gain for our countries the advantages we had envisaged when we signed them last September.

I know that the long public discussion of the Treaties in the United States has involved difficulties for you and your country. It has been a necessary element in informing the American public of the reasons for negotiating the Treaties and the benefits they bring to both parties. We have made notable progress in this regard.

Thus, as matters stand today, we are approaching an important milestone. If all of us can continue to work patiently and constructively for the achievement of our objectives, I believe we can achieve the outcome we both desire—sound and equitable Treaties in our common interest.

JIMMY CARTER.

MARCH 15, 1978.

DEAR PRESIDENT CARTER: In your kind letter of this date, as well as in the conversation which we had this afternoon, you expressed to me, among other things, your hope concerning a positive vote in the United States Senate on the Neutrality Treaty. I understand and I perceived the great efforts which you, as head of a great nation as well as those of numerous distinguished Senators, have carried out to create a consciousness in the rest of the Senate and in the American public for the need for a new relationship between Panama and the United States.

After intense and difficult negotiations we signed the resulting Treaties in Washington. Subsequently, and on account of certain confusion with respect to two articles of the Neutrality Treaty, we proceeded to release a Memorandum of Understanding which clearly interpreted the unilateral capability of each one of our countries to protect the regime of neutrality against threats, attacks, or a closing of the Canal, priority passage for warships in case of emergency and non-intervention in the internal affairs of Panama as well as a respect for territorial integrity and political independence of my country.

In this manner we perfected treaties which have received, because of their balance and equity, the support of practically all the countries of the world.

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our Declaration of October 14, 1977. In this respect, I wish to inform you that the Government of Panama will proceed to study carefully these reservations and will take its position once the Senate has voted on both Treaties. The situation is thus because in the plebiscite held in Panama the Panamanian people voted for the two Treaties together and not in separate form.

I do wish, nonetheless, to point out that such a study will be based on the following concepts: For Panama any reservation would be unacceptable which blemished our national dignity, which altered or changed the objectives of the Treaty or which were directed at hindering the effective exercise of Panamanian sovereignty over all of its territory, the transfer of the Canal, and military withdrawal on December 31, 1999. For that reason, I received with great gratitude your words that these objectives will absolutely not be changed by means of amendments or reservations. This reaffirms my estimate concerning the great morality and honesty which characterizes you as a political leader and as a person.

The Panamanian people would not accept words, misplaced commas or ambiguous sentences which had as their objective, or which might signify, occupation in perpetuity disguised as neutrality or intervention in their internal affairs.

President Carter, we both know the difficulties which we must overcome to achieve a new attitude in our two countries. But the expressions which you have made to me reveal the intimate truths of a man of great integrity. We believe that the American people elected you precisely for these qualities. Therefore, with the frankness which has characterized our relationship, I must tell you that we must face all of these difficulties about the Treaties with true courage.

The great power of conviction which you have must reach the true and upright men of your Senate. In your country there exists great proof of this fact by virtue of men who have never considered arrogance or threats as normal standards of conduct in the United States in its relations with the various sectors of its own people and in its relations with other countries. For that reason Lincoln, Franklin Delano Roosevelt, Kennedy and other great American Presidents hold a place in the history of the United States and serve as an inspiration to other peoples of the world.

It is obvious that not only Panama but the entire world anxiously awaits the decision which the Senate will make tomorrow. The Canal, as an international public service, is of interest to all humanity. For that reason, we see in the Treaties which we signed the peaceful solution which guarantees access to the Canal on an equal basis to all its users. Panama has made its great sacrifice: to wait 22 long years to achieve its decolonization. We have demonstrated maturity and patience. We are confident that the Senate will not disappoint the world.

Let me take this opportunity to express my highest esteem.

OMAR TORRIJOS HERRERA,
Chief of Government of the Republic of Panama.

Mr. ALLEN. I was just wondering, I say to the distinguished majority leader, if the letters were dated the 15th, it might have been of some benefit to the Senate to have had them up here on the 16th. They might have influenced a vote.

Mr. ROBERT C. BYRD. Mr. President, that could be said both ways. We could say what might have been.

Mr. ALLEN. I doubt if it would have made votes for the treaty.

Mr. ROBERT C. BYRD. I beg the Senator's pardon?

Mr. ALLEN. I doubt if the letters would have made votes for the treaties. Possibly they would have.

Mr. ROBERT C. BYRD. I do not know. I have not read them yet. I have tried to secure them for the Senator because of his interest. Of all sad words of tongue or pen, the saddest are these: "It might have been."

I do not know. They might have made votes. But I have not read them. I have asked that they printed in the RECORD because I wanted the Senator to know that the leadership wants to cooperate in every way to get the information that he and Senator GRIFFIN had expressed interest in.

Mr. ALLEN. I appreciate that. I might say that it is further indication of the power of the leadership, because only 30 minutes ago did we request the leadership to furnish these documents. Now we have them and they are before the Senate.

Mr. ROBERT C. BYRD. Mr. President, there is a time for every purpose under heaven: a time to speak and a time to keep silent. I shall choose to keep silent.

Mr. BAKER. Will the Senator yield to me?

Mr. ALLEN. Yes.

Mr. BAKER. Mr. President, I have just been handed copies of the letters of March 15, to which the majority leader referred, by a representative of the Vice President's office. I only want to take this opportunity to express my appreciation to the administration for very promptly acceding to the suggestion or the request that these letters be supplied: I am happy that they are now part of our official record.

Mr. ALLEN. Before yielding the floor, I wonder if I may glance at one copy.

Mr. ROBERT C. BYRD. Mr. President, let us just read the letters.

Mr. ALLEN. Fine; I yield for that purpose.

Mr. ROBERT C. BYRD. If the Senator will yield, I read first the letter by President Carter dated March 15, 1978, addressed to General Torrijos as follows:

MY DEAR GENERAL: As you know, the Senate is now approaching the end of its debate on the Neutrality Treaty. Although we expect the final vote to be close, we remain hopeful about the result.

We have made good progress since last September when you and I signed the Treaties. The Senate Foreign Relations Committee endorsed the Treaties by an overwhelming vote. In the Senate debate, we have fortunately been able to prevent any amendments to the Treaty other than the so-called "Leadership" amendments to Articles IV and VI. These incorporate exactly the terms of the Statement of Understanding published after our conversation of October 14.

In considering its Resolution of Ratification of the Treaty, the Senate will almost certainly attach a number of reservations, conditions or understandings reflecting certain of its concerns. We have made every effort and have been successful to date in ensuring that these will be consistent with the general purposes of our two countries as parties to the Treaty. I hope you will examine them in this light.

After approving the Neutrality Treaty, the Senate will move immediately to consider the basic Panama Treaty. While there will be problems, I am hopeful that the outcome will again be favorable, and that the two Treaties combined will gain for our countries the advantages we had envisaged when we signed them last September.

I know that the long public discussion of the Treaties in the United States has involved difficulties for you and your country. It has been a necessary element in informing the American public of the reasons for negotiating the Treaties and the benefits they bring to both parties. We have made notable progress in this regard.

Thus, as matters stand today, we are approaching an important milestone. If all of us can continue to work patiently and constructively for the achievement of our objectives, I believe we can achieve the outcome we both desire—sound and equitable Treaties in our common interest.

JIMMY CARTER.

Mr. President, as I read that letter, I am reminded of the tempest in the teapot. From what I have heard said today, there has been much ado about nothing. I see nothing in that letter—nothing. I think it was a very diplomatic, very factual, very articulate presentation of the situation as it existed and, as the President said:

We have made every effort and have been successful to date in ensuring that these will be consistent with the general purposes of our two countries as parties to the Treaty.

Mr. President, I congratulate the President of the United States on the letter. I think it laid out to General Torrijos in concise and succinct terms what the situation was. I hope that will put the matter to rest.

Now if the Senators would like for me to read the response—I suppose it is a response—by General Torrijos to the President's letter, I will be glad to do that.

Mr. SPARKMAN. Do it.

Mr. ROBERT C. BYRD. Let us do it. All right.

The letter is dated same date, March 15, which I believe has been recognized for centuries as the ides of March.

MARCH 15, 1978.

DEAR PRESIDENT CARTER: In your kind letter of this date, as well as in the conversation which we had this afternoon, you expressed to me, among other things, your hope concerning a positive vote in the Unted States Senate on the Neutrality Treaty. I understand and I perceived the great efforts which you, as head of a great nation as well as those of numerous distinguished Senators, have carried out to create a consciousness in the rest of the Senate and in the American public for the need for a new relationship between Panama and the United States.

After intense and difficult negotiations we signed the resulting Treaties in Washington. Subsequently, and on account of certain confusion with respect to two articles of the Neutrality Treaty, we proceeded to release a Memorandum of Understanding which clearly intepreted the unilateral capability of each one of our countries to protect the regime of neutrality against threats, attacks, or a closing of the Canal, priority passage for warships in case of emergency and non-intervention in the internal affairs of Panama as well as a respect for territorial integrity and political independence of my country.

In this manner we perfected treaties which have received, because of their balance and equity, the support of practically all the countries of the world.

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our Declaration of October 14, 1977.

Mr. ALLEN. Would the Senator mind reading that sentence over? I think it is significant.

Mr. ROBERT C. BYRD. I will read it over when I finish. I may have some comment.

Mr. ALLEN. I thank the Senator.

Mr. ROBERT C. BYRD. I would like to read the rest of the letter. Will you allow me to read the rest of the letter?

The Senator does not mind if I proceed.

Mr. ALLEN. I did not say I minded. I made a request of the distinguished Senator.

Mr. ROBERT C. BYRD. I thank the distinguished Senator.

In this respect, I wish to inform you that the Government of Panama will proceed to study carefully these reservations and will take its position once the Senate has voted on both Treaties. The situation is thus because in the plebiscite held in Panama the Panamanian people voted for the two Treaties together and not in separate form.

I do wish, nonetheless, to point out that such a study will be based on the following concepts: For Panama any reservation would be unacceptable which blemished our national dignity, which altered or changed the objectives of the Treaty or which were directed at hindering the effective exercise of Panamanian sovereignty over all of its territory, the transfer of the Canal, and military withdrawal on December 31, 1999. For that reason, I received with great gratitude your words that these objectives will absolutely not be changed by means of amendments or reservations. This reaffirms my estimate concerning the great morality and honesty which characterizes you as a political leader and as a person.

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President Carter, we both know the difficulties which we must overcome to achieve a new attitude in our two countries. But the expressions which you have made to me reveal the intimate truths of a man of great integrity. We believe that the American people elected you precisely for these qualities. Therefore, with the frankness which has characterized our relationship, I must tell you that we must face all of these difficulties about the Treaties with true courage.

The great power of conviction which you have must reach the true and upright men of your Senate. In your country there exists great proof of this fact by virtue of men who have never considered arrogance or threats as normal standards of conduct in the United States in its relations with the various sectors of its own people and in its relations with other countries. For that reason Lincoln, Franklin Delano Roosevelt, Kennedy and other great American Presidents hold a place in the history of the United States and serve as an inspiration to other peoples of the world.

It is obvious that not only Panama but the entire world anxiously awaits the decision which the Senate will make tomorrow. The Canal, as an international public service, is of interest to all humanity. For that reason, we see in the Treaties which we signed the peaceful solution which guarantees access to the Canal on an equal basis to all its users. Panama has made its great sacrifice: to wait 22 long years to achieve its decolonization. We have demonstrated maturity and patience. We are confident that the Senate will not disappoint the world.

Let me take this opportunity to express my highest esteem.

OMAR TORRIJOS HERRERA,
Chief of Government
of the Republic of Panama.

Now, I will read, at the request of the Senator from Alabama again this sentence in General Torrijos' letter.

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our Declaration of October 14, 1977.

Mr. ALLEN. I thank the Senator.

The PRESIDING OFFICER. The Chair recognizes the Senator from Alabama.

Mr. ALLEN. Mr. President, I am glad to receive these letters, which were mentioned first on the floor here by the distinguished Senator from Michigan (Mr. Griffin). I am wondering if there was a reply by the President to this letter.

Is there a reply to the letter of March 15?

Mr. ROBERT C. BYRD. Pardon?

Mr. ALLEN. I am wondering if there was a reply to the letter of March 15 from Torrijos to the President.

Mr. ROBERT C. BYRD. Well, Mr. President, I will immediately dispatch a call to the President of the United States or to one of his aides and inquire.

Mr. ALLEN. I thank the distinguished Senator.

Mr. ROBERT C. BYRD. I will attempt to get the answer for the Senator as to whether or not there was a reply to General Torrijos' reply to the President's letter.

Mr. ALLEN. I thank the Senator. The

significant sentence here, it would seem, is in the dictator's letter to President Carter, starting with the fourth paragraph of that letter of Torrijos to President Carter.

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our Declaration of October 14, 1977.

It looks as if Torrijos got the impression that the reservations, though here on the floor we were of the opinion that they did alter or detract from the content of what was agreed upon in the Neutrality Treaty and our declaration of October 14, 1977. Though, if we did not do something, what was the use of offering them?

I am also somewhat puzzled by the identical dates on the letters. I am wondering if Mr. Torrijos was in town or at the White House at the time and they exchanged their letters. I am not an expert, but it looks like the letters may have been written on the same typewriter.

Mr. ROBERT C. BYRD. Mr. President, will the Senator yield?

Mr. ALLEN. Yes.

Mr. ROBERT C. BYRD. Does the Senator want to go out over the airwaves of this country with this kind of subtle accusation? I do not believe the Senator wants to do that.

Mr. ALLEN. I merely asked.

I would ask the majority leader, if Mr. Torrijos was in town on March 15. Both letters are dated on that day.

Mr. ROBERT C. BYRD. Oh, they are both dated on that day, but we do not live in the age of Samuel F. B. Morse. We live in the age when communications are rather fast. One speaks and in the same instant people hear him halfway around the world. I hope the Senator will not imply that because two letters are dated the same date, they may have been written on the same typewriter, and so on. I do not believe the Senator wants to leave that impression.

The Senator first suggested that the leadership get the letter that was written by the President and the response. Now I have got them and I have read them.

Mr. ALLEN. Very well. I appreciate that. I thank the distinguished majority leader.

Mr. ROBERT C. BYRD. I thought it was the Senator's understanding to begin with that they were of the same date.

Mr. SPARKMAN. May I respond?

Mr. ROBERT C. BYRD. In further response to the Senator's question.

Mr. ALLEN. Obviously, they are copies and could well have been prepared in the same place.

Mr. ROBERT C. BYRD. I would hope they would be bona fide.

Mr. ALLEN. I am sure.

Mr. SPARKMAN. Will the Senator yield?

Mr. ROBERT C. BYRD. May I further respond to say, and I will not proceed further, in answer to the question the Senator just asked, I am informed that there was no further communication, no further letter written in response to General Torrijos' letter.

Mr. ALLEN. I thank the Senator.

Mr. ROBERT C. BYRD. Which was in reply to the President's.

Mr. SPARKMAN. Will the Senator yield to me?

Mr. ROBERT C. BYRD. Yes.

Mr. SARBANES. Will the Senator yield to me?

The PRESIDING OFFICER. Senator ALLEN has the floor.

Mr. ALLEN. Yes, I yield to my distinguished senior colleague.

Mr. SPARKMAN. I understand, preceding the writing of this exchange of letters, they had telephone conversations.

Can the Senator tell me if that is right? That is my understanding.

Mr. ROBERT C. BYRD. I do not know. I do know we live in a world in which countries exchange letters by cable. That does not require 24 hours always to respond to a communication between these two countries.

I just take some umbrage, the implication that these two letters which were requested by the leadership after the charge was made on the Senate floor and in partial response——

Mr. ALLEN. No charge was made.

Mr. ROBERT C. BYRD. I did not say a Senator made the charge. I said a charge was made on the Senate floor which left the inference to be drawn that there was some kind of hocus-pocus, or something, that went on between President Carter yesterday and General Torrijos that should be kept hidden, that has been kept unrevealed, and that if revealed it might have changed the votes on yesterday.

Now, I have secured the correspondence. I hope that Senators will not imply that these letters have been manufactured.

Mr. ALLEN. I make no such charge.

Mr. SPARKMAN. I think I can clear that up.

Mr. ROBERT C. BYRD. All right. I hope the Senator can.

Mr. SPARKMAN. If we note in the letter to President Carter, General Torrijos says:

Your kind letter of this date, as well as in the conversation which we had this afternoon.

So there was an exchange over the telephone that was on the same date.

Mr. ALLEN. Yes.

Mr. SPARKMAN. The same day as that letter was written.

Mr. ALLEN. I wish the Senator would continue reading that.

Mr. SPARKMAN. Yes. I have read the whole letter.

Mr. ALLEN. Yes.

Mr. SPARKMAN. I have read the whole letter. I want to mention one thing that Senator DECONCINI said on yesterday, I believe it was, when his reservation came up.

Mr. DECONCINI said:

It is my interpretation and judgment it does not affect a major change in the treaty, but it is a condition precedent to the treaty taking effect, which means it has to be accepted or not contradicted by the Panamanians before the treaty is effective.

It seeems to me that has, certainly, some bearing on the interpretation.

Mr. ROBERT C. BYRD. In any event, Mr. President, both letters have been laid on the record for everyone to see.

Mr. ALLEN. I say to the distinguished majority leader, the only significant sentence I find here is the sentence in the Torrijos letter in which he says:

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our Declaration of October 14, 1977.

I think that is a significant sentence.

With that, I am ready to close the issue.

Mr. ROBERT C. BYRD. Well, Mr. President, that sentence alludes to this sentence in the President's letter: "We have made every effort and have have been successful to date in insuring that these"—meaning reservations, conditions or understandings, in my words—"will be consistent with the general purposes of our two countries as parties to the treaty."

The President of the United States did not misrepresent the situation at all. He said:

In considering its Resolution of Ratification of the Treaty, the Senate will almost certainly attach a number of reservations, conditions, or understandings reflecting certain of its concerns. We have made every effort and have been successful to date in ensuring that these will be consistent with the general purposes of our two countries as parties to the Treaty.

Now, that is all that I see in the Presidents' letter. That is the only verbiage I see that could possibly have been addressed by General Torrijos' sentence which the distinguished Senator from Alabama mentioned.

Mr. ALLEN. The word "conversation."

Mr. ROBERT C. BYRD. Now, the Senator talks about conversations, but he says, "In your letter and conversation."

So we have half of it in front of us. The letter is here. I do not have the President's conversation.

Mr. ALLEN. Yes, I understand.

Mr. ROBERT C. BYRD. If the Senator wants me——

Mr. ALLEN. I do not intend to contend any further with the Senator. I am willing to let the matter rest.

Mr. ROBERT C. BYRD. I take the letter on its face. I think it speaks for itself.

I am delighted to have had the opportunity to present it to the Senate.

Mr. SPARKMAN. Will the Senator yield?

Mr. ROBERT C. BYRD. I do not have the floor.

Mr. ALLEN. I yield to my distinguished colleague.

Mr. SPARKMAN. I simply want to bring out the point that Mr. DECONCINI—and remember, the President was talking about what had been accomplished by the reservation—in his reservation said exactly the same thing.

Mr. ROBERT C. BYRD. Yes.

Mr. SPARKMAN. That it made no major changes.

Mr. ROBERT C. BYRD. Precisely.

Mr. SPARKMAN. That it was a clarification.

Mr. ROBERT C. BYRD. Exactly.

Now, the senior Senator from Alabama is chairman of the Foreign Relations Committee of the Senate. Is it not true these communications between nations will usually be cabled and that——

Mr. SPARKMAN. Either that or telephoned.

Mr. ROBERT C. BYRD. And that these cables are then typed up, and even if both these were typed on the same typewriter, what would that indicate? Would that indicate any sinister, ulterior——

Mr. SPARKMAN. In fact, it is saying it makes no changes, does not affect the terms that have been agreed upon.

Mr. ALLEN. Mr. President, I yield the floor.

Mr. ROBERT C. BYRD. I thank the Senator.

Mr. SPARKMAN. I thank the Senator.

Mr. ALLEN. I thank my distinguished senior colleague (Mr. SPARKMAN).

I yield the floor, Mr. President.

The PRESIDING OFFICER. What is the will of the Senate?

The Senator from West Virginia (Mr. ROBERT C. BYRD).

Mr. ROBERT C. BYRD. Proceed to article II, if there are no——

The PRESIDING OFFICER. If there are no amendments?——

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

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

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

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

Mr. ROBERT C. BYRD. Mr. President, I have asked the White House to send up the cables; and they, likewise, will be made available to Senators, so that there will not be any question as to the letters and as to the apparent similarities in the type in the two communications which were of the same date.

(Subsequently Mr. ROBERT C. BYRD supplied the following material for the RECORD:)

WASHINGTON, D.C.,
March 17, 1978.

Hon. ROBERT C. BYRD,
U.S. Senate.

DEAR SENATOR BYRD: I understand some Senators have expressed a wish to see the cables containing the exchange of correspondence between President Carter and General Torrijos, copies of which I sent to you earlier today. Copies of the two cables are enclosed. These copies are identical to the original cables except that they have been declassified, as indicated by the words "class change and deletion of caption."

You may wish to inform Senators that the original copy of President Carter's letter is now on its way to General Torrijos, and that the original copy of General Torrijos' reply is now on its way to President Carter. It has become a normal diplomatic procedure to exchange copies of such correspondence by means of telegram in the interest of speed.

The copies of the letters I supplied you this morning were transcribed from the attached telegrams in an effort to supply as quickly as possible the information Senators had requested. This explains the phenomenon, noted by Senator Allen, that the copies of the letter appear to have been typed on the same machine.

I will be happy to supply an authoritative transcript of General Torrijos' letter as soon as the original is received.

Sincerely,

DOUGLAS J. BENNET, Jr.

[Incoming telegram pass White House for President Carter]

GENERAL TORRIJOS LETTER TO PRESIDENT DATED MARCH 15, 1978

1. Have just received following letter (unofficial translation from General Torrijos for President Carter:)

PANAMA,
March 15, 1978.

DEAR PRESIDENT CARTER: In your kind letter of this date, as well as in the conversation which we had this afternoon, you expressed to me, among other things, your hope concerning a positive vote in the United States Senate on the Neutrality Treaty. I understand and I have perceived the great efforts which you, as head of a great nation as well as those of numerous distinguished Senators, have carried-out to create a consciousness in the rest of the Senate and in the American public for the need for a new relationship between Panama and the United States.

After intense and difficult negotiations we signed the resulting treaties in Washington. subsequently, and on account of certain confusion with respect to two articles of the Neutrality Treaty, we proceeded to release a memorandum of understanding which clearly interpreted the unilateral capability of each one of our countries to protect the regime of neutrality against threats, attacks, or a closing of the canal, priority passage for warships in case of emergency and non-intervention in the internal affairs of Panama as well as a respect for territorial integrity and political independence of my country.

In this manner we perfected treaties which have received, because of their balance and equity, the support of practically all the countries of the world.

In your letter and conversation you informed me that the Senate will introduce some reservations, but that they will not alter nor detract from the content of what was agreed upon in the Neutrality Treaty and in our declaration of October 14, 1977. In this respect, I wish to inform you that the government of Panama will proceed to study carefully these reservations and will take its position once the Senate has voted on both treaties. The situation is thus because in the plebiscite held in Panama the Panamanian people voted for the two treaties together and not in separate form.

I do wish, nevertheless, to point out that such a study will be based on the following concepts; for Panama any reservation would be unacceptable which blemished our national dignity, which altered or changed the objectives of the treaty or which were directed at hindering the effective exercise of Panamanian sovereignty over all of its territory, the transfer of the canal, and military withdrawal on December 31, 1999.

For that reason, I received with great gratitude your words that these objectives will absolutely not be changed by means of amendments or reservations. This reaffirms my estimate concerning the great morality and honesty which characterizes you as a political leader and as a person.

The Panamanian people would not accept words, misplaced commas or ambiguous sentences which had as their objective, or which might signify, occupation in perpetu- in their internal affairs.
ity disguised as neutrality or intervention

President Carter: We both know the difficulties which we must overcome to achieve a new attitude in our two countries. But the expressions which you have made to me reveal the initimate truths of a man of great integrity. We believe that the American people elected you precisely for these qualities. Therefore, with the frankness which has characterized our relationship. I must tell you that we must face all of these difficulties about the treaties with true courage.

The great power of conviction which you have must reach the true and upright men of your Senate. In your country there exists great proof of this fact by virtue of men who have never considered arrogance or threats as normal standards of conduct in the United States in its relations with the various sectors of its own people and in its relations with other countries. For that reason Lincoln, Franklin Delano Roosevelt, Kennedy and other great American presidents hold a place in the history of the United States and serve as an inspiration to other peoples of the world.

It is obvious that not only Panama but the entire world anxiously awaits the decision which the Senate will make tomorrow. The canal, as an international public service, is of interest to all humanity. For that reason, we see in the treaties which we signed the peaceful solution which guarantees access to the canal on an equal basis to all its users. Panama has made its great sacrifice: To wait 22 long years to achieve its decolonization. We have demonstrated maturity and patience. We are confident that the Senate will not disappoint the world.

Let me take this opportunity to express my highest esteem.

OMAR TORRIJOS HERRERA,
Chief of Government of the Republic of Panama.

[Outgoing telegram for Ambassador Jorden]

PRESIDENT'S LETTER TO GENERAL TORRIJOS, DATED MARCH 15, 1978

(Please deliver to General Torrijos soonest today following letter from President Carter, of which text follows:)

MY DEAR GENERAL: As you know, the Senate is now approaching the end of its debate on the neutrality treaty. Although we expect the final vote to be close, we remain hopeful about the result.

We have made good progress since last September when you and I signed the treaties. The Senate Foreign Relations Committee endorsed the treaties by an overwhelming vote. In the Senate debate, we have fortunately been able to prevent any amendments to the treaty other than the so-called "leadership" amendments to Articles IV and VI. These incorporate exactly the terms of the statement of understanding published after our conversation of October 14.

In considering its resolution of ratification of the treaty, the Senate will almost certainly attach a number of reservations, conditions or understandings reflecting certain of its concerns. We have made every effort and have been successful to date in ensuring that these will be consistent with the general purposes of our two countries as parties to the treaty. I hope you will examine them in this light.

After approving the neutrality treaty, the Senate will move immediately to consider the basic Panama treaty. While there will be problems, I am hopeful that the outcome will again be favorable, and that the two treaties combined will gain for our countries the advantages we had envisaged when we signed them last September.

I know that the long public discussion of the treaties in the United States has involved difficulties for you and your country. It has been a necessary element in informing the American public of the reasons for negotiating the treaties and the benefits they bring to both parties. We have made notable progress in this regard.

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

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

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

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

Mr. PERCY. Mr. President, I should like to make just a general comment on the amendments to the Neutrality Treaty that were adopted before the resolution of ratification was approved yesterday by the Senate.

I had said before that without Senate adoption of the two major amendments which assure the United States the unilateral right to defend the canal beyond the year 2000 and to send its warships and auxiliary vessels to the head of the line in time of need or emergency, I could not have voted for the treaties as signed by President Carter and General Torrijos. I think the adoption of those amendments was absolutely essential to ratification of the Neutrality Treaty.

The Senator from Illinois is concerned about one other aspect of the treaties, and it reflects not only a personal concern but also one reflected in conversations I have had with a great many constituents in Illinois.

While the amendments we have adopted have materially strengthened the Panama Canal treaties, I believe we must now work to minimize the burden on American taxpayers of the estimated $758 million it will cost to implement the treaties. Consideration of legislation to implement the treaties after they are ratified will provide an opportunity to confront the costs over the next 22 years associated with the takeover of control of the canal.

I would propose that we have higher canal tolls up to a level of, say, 50 percent, to recover such costs as lost annual interest payments from the Panama Canal Company to the U.S. Treasury, and such costs as civil service early retirement for hundreds of workers.

In addition, higher tolls would help insure legitimate payments to Panama under the treaties.

We have a responsibility to find ways to recover as much of our costs as possible. In the implementing legislation, we can require the new Panama Canal Commission to set tolls to meet many of these costs.

I intend either to offer a measure or support a measure to require Senate confirmation of the nominations of the U.S. members of the Board of the Commission, so that we can monitor their efforts to recover the costs.

Mr. President, at a time when we are trying to balance the budget—and the distinguished Senator from Virginia for a long time has been a proponent of this and a fighter for it—we must work toward that objective. We cannot just look lightly at these anticipated costs in connection with these treaties.

We have not run the canal on a businesslike basis in the past. We have run it in fine shape, but we have done it in many respects by offering a service to the users of that canal at rates that are less than commercial rates. When these treaties are ratified and we move toward the 22-year period when we will eventually turn over control of the canal, I believe we have a duty and an obligation to our own taxpayers to run the business of the canal like a business, to maximize its income. Certainly, that is not inconsistent with the partnership we intend to establish with Panama.

So, I simply wish to serve notice at this time that during the course of the next week's debate I will introduce the subject which, I think, already has been addressed in part by the Armed Services Committee and the Budget Committee. They have rendered a valuable service in bringing out in the testimony their estimates of the costs involved in these treaties. We can try to recover that cost and bring down to an irreducible minimum the impact on the American taxpayer and the U.S. Treasury, to see that the ships of the 70 countries that use the canal actually bear the cost that will be involved.

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

Mr. PERCY. I am happy to yield.

Mr. ALLEN. Mr. President, I am encouraged by the comments of the distinguished Senator from Illinois (Mr. PERCY) about the membership of the Panama Canal Commission, which, upon the approval of the Panama Canal Treaty, is to take over the operation of the Panama Canal from the Panama Canal Company which now operates the canal.

I understood the distinguished Senator to say that he was going to offer an mendment that would require the nominations of five of the nine members of the Cmmission to be confirmed by the U.S. Senate. Is that correct?

Mr. PERCY. That is correct; during consideration of implementation legislation, I will either support it or submit it myself. But I do feel that the nominations of the American appointees should be confirmed by the Senate of the United States.

Mr. ALLEN. The Senator realizes, of course, that there will be four Panamanians on the Commission and that the United States has no power or direction over approving these Panamanians. The Panamanian Government makes up a list of four and hands it to the United States—I assume it is going to be the Secretary of the Army, because he presently makes the appointments—and we have no option or discretion, as I read the treaty.

Therefore, any Panamanian, whether of good moral character, whether under indictment, whether of bad reputation, as I read the treaty, we have to appoint.

This is not a joint commission. This is not a United States-Panama commission. This is an instrumentality of the U.S. Government for the next 22 years. Why would not the four Panamanians need to be confirmed by the U.S. Senate? Will the Senator kindly enlighten me on that?

Mr. PERCY. The whole issue, of course, that we have been dealing with in these treaties is a question of national pride and sovereignty. I really could not envision calling before a Senate committee foreign nationals and subjecting them to a confirmation proceeding of the U.S. Senate. I know of no precedent for that in any international body.

Mr. ALLEN. The trouble is they are members of the U.S. Commission. Why should they not be confirmed?

Mr. PERCY. I just put the shoe on the other foot. Could we envision Amercain citizens being subject to a confirmation proceeding by some other legislative body in some foreign country? I think this would be a difficult thing.

Mr. ALLEN. Yes. If they are members of the commission of that foreign country, yes. This is not a joint commission. This is a U.S. agency and every member thereof should be confirmed by the U.S. Senate in the judgment of the Senator from Alabama.

Mr. PERCY. The Senator from Alabama is perfectly free to offer a substitute, if he would care to, and provide for confirmation of all. The Senator from Illinois has thought it through as carefully as he can. The Senator from Illinois determined that it would simply lead to a great deal of complication, that it would not be worthy of the effort, and that it would really subvert, in a sense, the pride of sovereignty that we are trying to nurture in the partnership we are establishing with Panama. Certainly we would have sufficient oversight if five of the nine members were subject to Senate confirmation. That is the majority of the board to start with and that would be enough. It would be enough, probably, if we just confirmed the chairman. But in this case we would have all five American members. That would constitute the majority of the board, and it would seem to the Senator from Illinois that would give adequate oversight. It would not be necessary to call nine members before us as long as we knew that we, in the confirmation proceeding, would demand to know of the nominees whether or not they would assent to return to the Senate and appropriate committees any time for questioning on the operation of the canal.

Certainly, in the confirmation proceedings we could ask them then these pertinent questions. Do you intend to run the canal as a business or do you intend to subsidize for the next 22 years the 70 nations that use this canal, as we have really in the past, or do you intend to maximize revenue so that we cover all of the obligations that we have to the U.S. Government, to U.S. taxpayers and our own Treasury, as well as to our partners in Panama? Take into account that we cannot be and would not be unreasonable, because you reach a point of diminishing return. When you get the toll revenue up too high you lose enough tonnage so your net income is going to be less than it was before. That is why I say use good business judgment, and we want people who have that background and experience.

Mr. ALLEN. I thank the distinguished Senator, and I am very much pleased he is going to be insisting on the commission being operated on a businesslike basis.

I might also suggest to the distin-

guished Senator that whereas on the Neutrality Treaty the argument was made, of course, that that involved national pride, sovereignty, and dignity of the Panamanian Government and Panama and therefore we would not have any amendments—I believe the distinguished Senator from Illinois voted against all amendments—I am led to be hopeful by the attitude of the distinguished Senator from Illinois now that as we turn to the Panama Canal Treaty we are not dealing with something that has a whole lot of national pride involved; we merely have a business arrangement involved along with the gift of the canal by the United States to Panama.

I am glad to see the distinguished Senator wanting to tighten up on that business arrangement a little bit to protect the American taxpayer. And I assure the Senator amendments will be offered that would have that desired result. I am looking forward to having the very fine support of the distingiushed Senator from Illinois on amendments of that sort.

I thank the Senator.

Mr. PERCY. I thank my distinguished colleague, and I will advise him ahead of time when I intend to take the floor to begin this debate. I will certainly invite members of the Armed Services Committee and Budget Committee who have had hearings on this matter and I feel that we will have a good deal of support for this principle on the floor of the Senate.

The Senator from Illinois has supported, right from the outset, amendments to these treaties that the Senator from Illinois felt absolutely essential and crucial, and I said I would not have voted for these treaties as signed by the President and General Torrijos if they were not amended in some respects. The Senator from Illinois has supported some reservations. I now indicate that I will introduce legislation to require Senate confirmation of the American appointees to the Board of the Panama Canal Commission and would welcome my distinguished colleagues' comments at that particular time in debate when we have that piece of legislation under way.

Mr. ALLEN. I thank the Senator.

The only thought that occurs to me on it is that with a U.S. commission it would seem a little bit strange to have a hybrid-type membership, five Americans and four Panamanians sitting side by side around the great big mahogany table, with five of them having been confirmed by the U.S. Senate and four being Panamanians of uncertain origin or reputation. I just hope that the Senator would be willing to extend his thinking along this line to the extent of requiring all of these members of this American commission to be confirmed by the U.S. Senate. I hope the Senator will reflect on that and reach that conclusion.

Mr. PERCY. I thank my distinguished colleague.

Mr. President, I yield the floor.

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

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

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

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

Mr. LAXALT. Mr. President, one of the vital items involved in the course of these various debates involves the matter of sovereignty. We have had extended discussions concerning these matters for these several weeks. We have been debating this matter and, of course, there are conflicting opinions that have been voiced on this floor in respect to sovereignty, as to the legal effect one way or the other, as to whether it really makes any difference at all.

I would like to for the next few moments read into the RECORD what I consider to be one of the better discussions of the legal situation in Panama overall and, in particular, the observations of an eminent American, an exceedingly fine lawyer, and one who probably more than anybody else, from firsthand knowledge, experienced the legal situation in Panama and, more particularly, through extensive research, would give us the benefit of his analysis on the question of sovereignty.

I speak of the Honorable Guthrie F. Crowe, who is a retired judge and who served in that capacity for a long while in the country of Panama.

In testimony before the Subcommittee on Separation of Powers, which was conducted under the chairmanship of the very able Senator from Alabama (Mr. ALLEN) several weeks ago, Judge Crowe appeared and testified. I would like for the next several minutes to have the record indicate, even though it is contained in the report, have the record formally indicate what his observations to the committee at that time were:

Judge CROWE. I am retired and I have no secretary or staff, so my comments today will be off the cuff. I retired because of old age. I am somewhat like the old judge I heard at the judicial conference, who said that old age made him a lot more moral than the Methodist Church ever did. So I am in that position.

I am very happy to be here and to be able to present something about my experience in the Canal Zone, I was there for 25 years as judge. I was appointed for an 8-year term by President Truman, and then reappointed by President Kennedy. Then no one was appointed to take my place, so I stayed on under operation of the statute until my successor was appointed and qualified. That was not done by President Nixon nor President Ford.

I resigned as of the 30th of April after, as I say, serving 25 years.

We have a number of good lawyers who are Members of the U.S. Senate. We have had a number of good international lawyers give us varying opinions concerning the basic issue of sovereignty. But I must say that of all those I have been exposed to in one form or another during extensive debates and deliberations in this matter, I doubt if we have anybody in this entire country who has had more personal experience in connection with the legal situation in Panama than does Judge Crowe, as he has indicated here in his testimony. He has served for 25 years and served in a very distinguished manner.

Now, why do I make reference to his testimony? For two purposes: One is to give my colleagues through the RECORD the benefit of his views concerning sovereignty which I consider to be a vital matter.

It seems to me the considerations we have in connection with the main Panama Canal Treaty as to whether we turn over this facility stock free, with additional payments amounting to several million dollars on top of it, the considerations relating to that transaction are far different if we have sovereignty than if we do not.

Obviously, if we are in some legal capacity short of ownership, in a tenant capacity, our legal relationship to the facility and its value and all the rest of it are far different than if we do own it. I happen to be one of the many Members of the U.S. Senate who feels that from the very outset, from the provisions of the various documents, we have purchased the 10-mile buffer zone known now as the Canal Zone. I feel history supports that view. I feel that the law supports that view.

In addition there are other values in hearing from Judge Crowe and in making his testimony part of the RECORD, and that is the fact that we have thousands of Americans who presently live in the Canal Zone who, under the terms of these treaties, very quickly will be subjected to the legal jurisdiction of Panama.

So it seems to me that it is terribly vital for all of us in consideration of these overall treaties to try to determine what type of legal system we are going to be subjecting our own to in addition to the vital question of where we are in relation to the legal issue of sovereignty.

I proceed now to read further from his testimony:

I entered on duty there in August of 1952. I had a very varied experience. I learned to speak Spanish while I was there and got to know a lot of Panamanian people. I think that many of them are splendid people. I am a great admirer of many of them, and I feel that many of them are quite competent.

There have been several discussions during the course of the debates here that those of us who are opposed to these treaties are insensitive to the Panamanians; that we were something less than humanitarian in seeking to preserve our own property.

We have attempted many, many times on this floor, all of us, to indicate that that is not our wish, it is not our desire, it is not our attitude. The fact is that we do relate to the Panamanians. The fact is that we do appreciate them. The fact is that they have been reliable allies for some 75 years. The fact is that we have had a good working relationship with them, politically and otherwise. The fact is that 75 percent or more of the employees working for us in operating the canal are Panamanians—good, loyal, competent employees.

The reason why I make this observation is to indicate the statement being

made here by the Federal judge, Guthrie F. Crowe, indicated that by virtue of his experience, which apparently is favorable in this regard, he has basically the same attitude and position that we have.

Going back to his testimony:

There was a good deal of discusssion this morning as to whether or not they would be able to operate the canal. Of course, there are some men who have been educated in the American schools and who have high competency. Whether or not as a nation they could operate the canal, of course, is a matter of considerable speculation.

Emphasis is on the words "as a nation."

We have never entertained any serious doubt that the Panamanians could physically manage the facility. I had some reservations before the beginning of these debates, but I am satisfied from what has been adduced here during the many discussions on the floor that there is ample expertise among the Panamanians within a period of 22 years to actually manage and operate the facilities.

But that is not the issue. The issue really is whether or not as a nation, whether or not politically, they can properly operate this facility.

As my colleagues will remember, during the course of debates on the Neutrality Treaty Senator GARN, the very able Senator from the State of Utah, spoke at length on this subject from his experience as a former mayor and a former executive.

He expressed concern about the lack of stability on the part of the Panamanian Government, and certainly that has been the history. Since we became involved in 1903, as I remember it—and I will stand corrected if I am wrong in this—there have been some 50 changes in the Panamanian Government over all that period of years. It has been stable for the last several years, that is true. Why? Because since 1968 it has been run by a dictator who runs the country with an iron hand, who took control at the point of a gun, who maintains control today at the point of a gun. It is a rigid dictatorship.

If that is the kind of stability that we want, and I do not believe it is, I think we have entered into a sad course of events in this country.

The point I want to make is that we have had a history of unstable government in Panama. We are now asked, as Senator ALLEN indicated before, to enter into a business arrangement. That is what the Panama Canal Treaty is all about: Whether or not it is to our business interests to turn over this facility. In any business consideration, if we are talking about entering into a partnership—and that is basically what we are going to be doing—an obvious question is, how stable is the partner?

I happen to be a lawyer by profession. One of the first inquiries you would have when a client would come in thinking in terms of entering into a partnership is, what is his prospective partner like? How solvent is he from a financial standpoint? How stable is he? How honest is he?

During the course of this debate I was frankly quite disappointed, particularly when we had our secret hearings, when there was substantial evidence developed here that the Torrijos family and associates had been involved in extensive drug trafficking of serious drugs, such as heroin. There was additional evidence indicating that there is an abundant amount of corruption in Panama. Many of our colleagues not only did not pay any attention to it, but stated on this floor during the course of the session that it was irrelevant.

How in the world can entering into a partnership with an unstable partner, who admittedly has been engaging in drug trafficking, with all that that involves, possibly be irrelevant? I personally cannot believe the American people would ever subscribe to that kind of standard. I cannot believe that they would not hold the Senate to a standard of decency. That is basically what we are talking about.

We are told that we have no choice; that we take the government as we find it; that we take the dictatorship as we find it.

We are told that all the rest of them are about the same; that they all engage in one degree or another in drug trafficking; that they all are afflicted to one degree or another with corruption, so it really does not make any difference.

But does it? The distinction, in my mind at least, which is shared by many of my colleagues, is that this is not a typical foreign aid transaction. We are not being asked here, as a Government, as a Senate, to dole out millions of dollars to a given country. We are asked here, and we will be asked here in the weeks to come, to make a judgment as to whether we turn over a vital international facility to this Government of Panama.

To that extent it seems to me it is highly relevant for us to seriously examine whether or not the government in question is a stable one, is one that we can rely upon and trust to faithfully and properly manage this facility from a political standpoint after the year 2000, in our interests, in their own interests, and certainly in the interests of our various allies.

Those are questions, Mr. President, that I think are highly relevant and that we should once again probe very closely during the course of the continuing debate of this matter.

May I proceed further with the discussions of Judge Crowe?

I want to bring to the attention of this committee the condition of the court at present. I think it might emanate from the fact that the Department of State is advising the President to the contrary. That is the need for a judge.

Since I resigned there has been no appointment of a judge, although there are a number of applicants. They have been using a distinguished judge from Florida, Judge Mertens, who has been sitting in criminal cases only. He has only been able to go 2 or 3 days at a time periodically.

As a consequence, the civil side of the docket has been completely unattended to. The people are suffering a great deal by reason of the fact that there is no judge there.

We have a pretty good sized court. As a matter of fact, it was the largest docket of any single judge in the Federal system under the American flag. There were about 400 criminal cases a year and 400 civil cases.

That is a rather astounding load when you consider the limited number of people there are in that particular area.

The fact that there is no judge, of course, leaves the people in considerable difficulty.

I might remark upon the Admiralty situation in the event that the Congress or the Executive with the treaty powers decide to transfer the canal to Panama.

The Admiralty jurisdiction of that court is equivalent to the Admiralty jurisdiction of a district court in the United States, although it is a territorial court and the judge is not a title III judge. He comes under title IV and is only appointed for a term of years. He has equivalent Admiralty jurisdiction under the Canal Zone Code, with judges in the United States.

Panama has no Admiralty courts nor any case law concerning Admiralty. Whenever a question in Admiralty arises it is decided under what is called a Panamanian Commercial Code. This means that the Admiralty bar of the world, whose members are accustomed to appear before courts that recognize the agreements adopted by international Admiralty conventions, would be at a disadvantage and the causes of their clients would suffer.

He has then many observations relating to the conditions of the courts. Let me proceed now to some salient portions which affect the interests of our Americans living in Panama, and the effect that turning over our court system and its jurisdiction to the Panamanian courts would have:

Americans who have lived in the zone for many years feel that American citizens who are caught and charged with crimes in Panama are dealt with more harshly than Panamanians, due to the strong feelings that have grown up over the years. There is no reason to think that this will change if and when Panama is in control of law enforcement in the zone area.

Small wonder, Mr. President, that our own citizens are terribly concerned about this feature of the treaty. We have many, many thousands of Americans living in that Canal Zone who very quickly, if these treaties are ratified, will become subject to the jurisdiction of the Panamanian courts and subject to the type of unequal treatment of which Judge Crowe speaks. Small wonder, Mr. President, that they are very apprehensive as to that feature of the treaty.

It is planned or discussed that a number of Americans will, of course, have to reside there because of their expertise in handling the Canal Zone and the engineering problems and the shipping difficulties. If those people are there they will be exposed, of course, to this type of jurisdiction of which I speak.

Again, Mr. President, let me remind those listening and for the purpose of the RECORD that these are the words of the Honorable Guthrie F. Crowe, retired judge, who served in Panama for a distinguished career of 25 years. He is speaking now of his great concern about the effect of imposing the Panama legal system upon our own citizens in the event that this treaty is passed:

In civil cases in the Canal Zone we use the Federal rules of civil procedure and the Canal Zone Code, especially drafted by Congress for the zone. Great attention is paid to the service of process. The greatest of diligence is used to see the rights of the parties are safeguarded. The court is open for the filing of cases and the issuance of needed process 24 hours a day, 7 days a week.

Obviously, it is a very efficient court:

In Panama there are no civil jury trials. I am advised that all cases are by deposition, taken in such a way that there is no opportunity for confronting witnesses and conducting a fruitful cross-examination. Criminal and civil liability in actions in tort are interlocked so that there is no civil liability unless there is criminal liability.

Think of the drastic differences there are in impressing the Panamanian system of law upon our citizens in these respects. Small wonder, Mr. President, that they are concerned about this as well:

Law enforcement in the Canal Zone is by a highly trained, carefully selected police force that is completely separate from the military. I suspect that Governor Parfitt touched upon that this morning. Unfortunately, I missed part of his statement. It is a fine organization of men who are well qualified, as well as women now. They have some excellent women on the police force.

We are talking about the police force, our police force, who are presently operating and have been for a number of years, within the Canal Zone:

There are, of course, military police drawn from the military units assigned to the zone. These people police the military encampments and military personnel only.

In Panama there is no separate constabulary. It is a military dictatorship. All policing is done by members of the Guardia Nacional—that is, the Panamanian Army.

So remember that in Panama—and again, we are subjecting our own people to this system—they do not have a police force as we know it in this country. The rights, the assets, the liablities—whatever may be touched by the rule of law—would be governed thereafter by military police under the authority and under the domination of a dictator:

Each one of the members of the army has full powers of arrest just as though he were a civil constable or a police officer.

There has been discussion here about how we would feel if a number of these conditions were imposed upon us. I wonder how a number of the citizens and residents, say, of the good State of Idaho, to whom we have had frequent reference, would feel if a system were imposed upon them that their police laws were administered and regulated, not by trained policemen but by military persons, amounting to martial law. Yet, that is precisely what is going to happen to our Americans in Panama, because the day that we ratify these treaties, the day that they become effective in this respect and we have the turnover, our Canal Zone Americans will be subjected to this kind of police activity.

This is the judge once again speaking, and he is speaking, now, of the Panamanians:

They also do have a secret police organization called the "Deni."

The 10,000 or 11,000 soldiers of Panama have full powers of arrest and law enforcement throughout the country.

I submit, Mr. President, that would be akin to having 10,000 or 12,000 National Guard people here in the District of Columbia, or in the State of Texas, or the State of Utah or the State of Nevada, with full powers of arrest without any conditions, supporting martial law. That is the situation we presently have in Panama, as attested to by Judge Crowe:

The general said this morning that there were only about 8,000 in the military. Panamanians whom I know and with whom I have talked on many occasions seem to think that there are many more—that there are about 10,000 or 11,000.

There are no sheriffs, no city police, nor State police, nor anybody of that nature. Political prisoners are not uncommon and exile has been used against prominent citizens without trial.

That is the type of law enforcement that you will find.

I submit, Mr. President, that is the type of law enforcement, if we approve these treaties, that we are going to subject Americans to:

I have a clipping here which is very interesting, on that particular score, that appeared in the Miami Herald recently. It was reported on Tuesday, May 24, 1977 concerning one Eisenman. Mr. Roberto Eisenman and 10 others were critical of the method that the Government of Panama was using in handling the beef situation. These people were raising beef and went up into the interior and protested against this method.

They are not unlike the hundreds and thousands of good farmers and agricultural people we have had all over this town and through these buildings in protest of their particular difficulties. These people are basically doing the same thing. They are protesting policies of the Government which are affecting them adversely as beef producers.

All right, what happened to them in Panama?

Those people were immediately arrested and handcuffed and exiled from the country without trial. They were sent to Ecuador, as this committee may already know. Mr. Eisenman charged that the Panama dictatorship is alive and well due to the support of the United States. He said this in Miami just recently.

Now, it has been stated time and time again on the floor of the Senate that this is the just due of the Panamanians. I do not subscribe to that. I think history reveals that there is no country that has ever been treated better in every way than we have treated Panama from its inception. It is my view that Panama would not be the Panama of today if it were not for the U.S. generosity over the years, and certainly not without the Panama Canal.

Let me proceed further with the statement:

In that meeting there were a number of people. The audience reaction generally appeared to be antitreaty . . .

I am speaking again of Judge Crowe in his testimony before the Subcommittee on Separation of Powers of the Committee on the Judiciary of the U.S. Senate:

In that meeting there were a number of people. The audience reaction generally appeared to be antitreaty, although the luncheon debate was cosponsored by the Council of the Americas, representing some 220 U.S. firms doing business in Latin America which has publicly endorsed the negotiations.

I have sat in the court, as I say, for 25 years. I have had occasion to study the history of the acquisition of the Canal Zone area. It has been gone over pretty thoroughly this morning. I am no expert on the question of separation of powers. Cases of that kind have not arisen in my court. I am familiar with the *Alabama* case and the *Fitzgerald* case and the different ones that were alluded to by Mr. Leonard this morning.

I believe thoroughly that the Congress must sit in the disposition of property that is the property of the United States.

Now, why is that important? Because we have had extensive debate and discussion in these last several weeks, on this floor and otherwise, as to whether or not the Constitution requires the approval of the House of Representatives in the disposition of Federal property. It has been said time and time again by the proponents of the treaty that that is not necessary, that that is a function of the executive that, upon approval of the treaty here, will be self-executing.

We know that well over a majority of the House of Representatives do not subscribe to this view. They have recently signed statements indicating that it is their judgment, on a bipartisan basis, Democrats and Republicans alike, that it is the constitutional responsibility of this body and the President to transfer this matter to the House of Representatives for approval before it is finally concluded.

Mr. LEAHY. Will the Senator yield for a moment on that point?

Mr. LAXALT. I certainly will. I am happy to yield to the Senator from Maine.

Mr. LEAHY. Vermont.

Mr. LAXALT. I apologize. These are long days. My apologies to the able Senator PATRICK LEAHY, from Vermont.

Mr. LEAHY. Maine is a beautiful State also. We also have been among those traveling up to those Northern States on occasion.

I have heard my good friend from Nevada discuss the question of allowing the House of Representatives to vote on this issue. My good friend from Utah did the same again last night. I have also heard a number of Members of the House of Representatives say that they would like to have a vote on it, at least publicly, and I have heard some of the same signers of the letter right here yesterday chuckling a little bit in the back of the hall during our vote on it, saying "It is a good thing you guys are the only ones voting on this."

I would love to have every one of them vote on the Panama treaties, but I think we are somewhat constrained by the Constitution in that regard.

With all due respect to our friends in the other body, I recall last year when the matter of major controversy was a pay raise—which I voted against twice here in this Chamber, I hasten to add—but the matter of controversy was a pay raise, and I recall Members of the other body being polled as to their feelings about it. An overwhelming majority said that if they were allowed to vote they would vote against the pay raise.

Of course, when suddenly by accident they were allowed to vote on it, as we all know, they voted for the pay raise. That may or may not be a matter of some concern here, but the fact is that the Constitution very clearly states that on

treaties of this nature, the Senate alone will vote. This was done on the first treaty and will be done on the second treaty.

Now, on the question of implementation: Whenever the implementation legislation comes up, naturally both Houses vote on that. As members of the Senate Appropriations Committee, for example, we have an inflexible analysis of the Constitution. I would be delighted to start a few appropriation bills over here rather than in the House. Maybe the Senator from Nevada, the Senator from Utah; and I could get together on a resolution asking the House of Representatives if, in return for us forgoing the Constitution and letting them vote on the Panama treaties, they would let us initiate appropriation bills on this side of the Capitol.

Would the Senator from Nevada like to join such a resolution?

Mr. LAXALT. I might not have any difficulty with that, Senator LEAHY. I wondered, though, if I could address a question to the Senator from Vermont in this whole general area.

There is a split of opinion as to whether or not the House of Representatives must pass on the disposition of property, admittedly. As a matter of fact, this whole matter now is the subject of litigation.

Mr. LEAHY. I ask my friend from Nevada, because there is a split of opinion, and because very learned constitutional lawyers have stated that they feel that it must be thus. There are precedents for it, and the matter is the subject of litigation.

If it has the urgency that many in the other body feel it does, is it not a fact, would not the Senator from Nevada agree, that such a matter, if pushed with diligence by those who claim that they feel a great urgency on it, could be through the appellate process, could have been before the U.S. Supreme Court, and could have been determined by now?

Mr. LAXALT. It has not been, though I assume they are pushing it with due diligence, and I understand that they are.

Mr. LEAHY. I look at other matters within the past few years that have gone quickly to the U.S. Supreme Court and have quickly been disposed of. During the Watergate time there were questions regarding the Watergate tapes. The ownership of the Watergate tapes is probably an example that we can all recall where the matter went very quickly to the U.S. Supreme Court and, of course, was disposed of.

I suggest that while it is very nice for Members of the other body to join in a lawsuit to seek a determination of this question, the U.S. Supreme Court is the one place where final determination could be made. Would the Senator agree on that?

Mr. LAXALT. Yes, I would.

Mr. LEAHY. I would suggest that if the Members of the other body are really that concerned and really that eager to have the treaties come over to the other side, to the other body, for a vote, I would suggest, considering the time at which their litigation was begun, that the matter could be much farther along than it is now. Steps could have been taken to have assured a decision within the U.S. Supreme Court, if not by now, certainly by the time we finish voting on these treaties.

Mr. LAXALT. Will the Senator suspend for just a moment?

Mr. LEAHY. Certainly.

Mr. LAXALT. Without discussing further the legal ramifications here, we are fortunate in having on the floor the very able Senator from Utah (Mr. HATCH), who probably, as much as anybody in the entire U.S. Senate, has been involved in the legal features.

Let me discuss with you for just a moment or two, Senator LEAHY, the question beyond the legal problems, as to whether or not it would not be just good political sense to have the House pass on these treaties.

Mr. LEAHY. I think that the U.S. Constitution has clearly set out that the treaties' ratification should be voted on within the Senate. I would not want, for the sake of political science or political expediency, to ask to have the other body act on them.

As a member of the Appropriations Committee, I find it very frustrating to have to wait for the other body to act first on appropriation matters, but that is clearly within the Constitution, and I have to forestall that frustration and wait for it to come over. Certainly, if the U.S. Supreme Court ruled in this case that this treaty, contrary to what many legal experts have advised and what appears to be the constitutional background to it, if the U.S. Supreme Court said that the House also should vote on it, then I would say "Fine. Let them vote on it. Let them vote on it." But I certainly would not want to pass it over there as a matter of political expediency.

Mr. LAXALT. I would not deem it to be a matter of political expediency. I would feature it to be almost a matter of political necessity.

I will tell you why. We have had Senator after Senator stand up on this floor and say that despite the fact that they may have a 10-to-1 majority against this treaty, they do not feel that they are bound by their constituencies.

Well, I will agree that we cannot be automatically sure. We cannot run the affairs of the U.S. Senate by simply looking at a poll; but I would say that if we do not pay heed to the people out there, and we have a situation where it is 10 to 1 or 15 to 1 or 20 to 1, as it may well be in some of these States, that we are not being as responsive as we might be in this Senate if we do not listen to that, and at least, make it a considerable factor even not conclusive.

Mr. LEAHY. I would agree with the Senator from Nevada on that. I happen to enjoy the luxury of representing a State where the latest polls show that the opinion is split 50–50—right down the middle on the treaties as of today.

Mr. LAXALT. All right.

Mr. LEAHY. But I will ask the Senator one further question.

If a U.S. Senator feels in his own conscience that his particular position is right, can he vote against his conscience, no matter what polls or constituents might say?

Can our form of government continue to exist if we have people on the floor of the U.S. Senate voting contrary to their consciences?

Mr. LAXALT. Of course not. But I must say this to the Senator from Vermont: We could pass on a thousand matters here on the floor of the U.S. Senate and there might be one of those thousand which may be a matter of conscience.

Mr. LEAHY. And I contend that this one is.

Mr. LAXALT. All right. So be it.

Mr. LEAHY. As I said yesterday on the floor of the Senate, I feel that the vast majority of Members of the Senate, those who vote both for and against the treaties, have voted the way they feel in their consciences is right and in the best interests of the United States.

Again, I do not think the vast majority of the Members of this body have voted in the way they think will get them the most political mileage, one way or the other. I say that both for proponents and opponents of the treaty. They have voted instead what they feel in their minds and in their consciences, is in the best interests of the United States.

I say this because it is the only way, especially in a matter of such significance. This is the only way the final decision can be made.

Certainly, everybody should do as I have done. I am sure they have gone to their own State, talked with their own constituents, studied the matter as deeply and as carefully as they know how.

The ultimate result was that most voted by their own consciences, because no U.S. Senator owns a seat in the U.S. Senate. No U.S. Senator, once having gotten here, has some kind of lifetime tenure, and no U.S. Senator——

Mr. FORD. Will the Senator yield at that point?

Mr. LEAHY. Can I finish?

Mr. FORD. Who owns the seat then if the Senator does not own it? Who really owns the seat and who sends the Senator here to warm the seat?

Mr. LEAHY. The people of the State. The people of the United States do.

When they send us here, they send us to exercise our best judgment, to represent them as well as we know how.

But they do not own you. They do not own your conscience. Nobody—nobody—in the country owns your conscience.

In the final result the Senator, when he casts his vote, must cast the vote that is consistent with his own conscience.

Mr. FORD. The Senator has been arguing the Constitution ever since I walked into this Chamber. Will the Senator yield to me for half a minute?

Mr. LAXALT. Yes.

Mr. LEAHY. The Senator from Nevada has the floor.

The PRESIDING OFFICER. The Senator from Nevada still has the floor.

Mr. LAXALT. I am happy to yield to the Senator from Kentucky.

Mr. FORD. The Senator has been arguing the Constitution ever since I walked in this Chamber, and how important the Constitution is. The Senator says the treaty should not go the House and be voted on in the House because that is what the Constitution says.

Alexander Hamilton in about 1825, in framing the Constitution, said to us and to the world that this is where the people's voice is heard. I repeat, this is where the people's voice is heard.

Now, I do not think we ought to just throw our conscience out the window and not have a conscience, but if we are truly going to reflect the voice of the people, somewhere along the way we have to say what they are saying.

I think the voices out there today are saying, "Big brother, listen to us. Why should we be interested in the political arena?"

That is why there is less than a 50-percent vote in an election, because they say their vote does not count, or their voice is not heard, and they are tired.

Mr. LEAHY. I think it is unfortunate if the Senator has less than a 50-percent vote in his State. In my State we have usually been in the top of the country for percentage of votes. Maybe that is why in our State, where opinion is split down the middle on this issue, the vast majority of people have come down and told their Senators that they exercised their input to us and they expect us to use our best judgment and vote our conscience.

Mr. FORD. If it is 50–50, you can fall on either side then, and your conscience will be clear.

Mr. LEAHY. No, I disagree with the Senator. I could not fall on either side and my conscience be clear because my conscience will tell me one side, and that is the only side I could go on, irrespective of what the poll might be.

Perhaps it is fortunate that in my State it is split 50–50. But no matter how it might be split, in the end result, like all Senators from Vermont before me, in the end result my conscience must be the guide.

Now, I would do everything possible to make sure, in reaching that conclusion and molding that conscience, that the people of my State have the ability to involve themselves. Fortunately, being from a small State, I can read every piece of mail, and do, that comes from Vermont. I can, several times a month, be in my home State and have town meetings. I am probably the only Senator in the country that has a listed home phone number, in both Vermont and Washington.

Mr. LAXALT. Mr. President, who has the floor?

The PRESIDING OFFICER. In this situation, may we have a more orderly debate?

The Senator from Nevada continues to have the floor.

Mr. LAXALT. The only point I want to make is that I will not argue with Senator LEAHY that when a given issue is a matter of conscience he follows it. Of course he does.

But the point the Senator from Kentucky (Mr. FORD) raises is also valid. We are here in a representative capacity. I cannot help believe the reason why the Congress and this body, in terms of public approval, are down to a rating of less than 20 percent is because of the fact that millions of Americans in this country do not think we listen any more. They think we talk to ourselves. We form our own conclusions in an ivory tower and we are not responsive.

Believe me, this is certainly true of our consideration of the Panama Canal treaties.

I personally believe, and that is the reason why I raised the point in issue, that one of the valid reasons for having the House pass on these treaties is that they run every 2 years and are far more responsive to the people.

I suggest to the Senator from Vermont that if every Senator who voted yesterday was running for office this year, instead of 34 votes we would have gotten twice that many.

Several Senators addressed the Chair.

Mr. LAXALT. I am happy to yield to the able Senator from Hawaii.

The PRESIDING OFFICER. The Senator from Hawaii.

Mr. MATSUNAGA. I thank the Senator from Nevada for yielding.

As the Senator well knows, I served for 14 years in the House of Representatives prior to coming to the Senate. In those 14 years that I was there I learned this much: Generally speaking, Members of the House, as well as Members of the Senate, may be divided into two general classifications. One would be the issue-oriented, and the other the constituent-oriented.

The constituent-oriented, I found, would check the mail on any issue and say, "Well, today I received a thousand letters; 800 were opposed to the bill"—or whatever was before the House—"and only 200 supported it. So I will vote against it."

Mr. LAXALT. They voted by mail.

Mr. MATSUNAGA. Well, this, they feel, expresses the opinion of the constituents.

Mr. LAXALT. If that is spontaneous mail, as long as it is not fully automatic, is that harmful?

Mr. MATSUNAGA. If the Senator from Nevada will let me make my point, in the event a shift in public opinion is reflected by letters, now, I suppose those who voted against the treaty yesterday would say, "Now, my mail shows 800 for the treaty and 200 against. So I will now vote for the treaty."

On the other hand, we find the issue-oriented Members of Congress who would go by what they believe to be the right thing to do, the fair thing to do, not by how many letters they receive for or against a particular bill or treaty, as in this case; but by having the facts before them, they are better able to make a judgment on the issue than are their constituents. The constituents do not have the facts the Member of Congress has before him. He can make his judgment on the facts before him and decide on that basis, fully confident that he can go back to his people and lay the facts before them, explain his vote, and even win the majority of his constituents to his views.

Mr. FORD. Mr. President, will the Senator from Nevada allow me to question the Senator from Hawaii?

The PRESIDING OFFICER. As the Chair understood the Senator from Nevada, he was only yielding temporarily to the Senator from Hawaii.

Mr. LAXALT. I would be happy to yield to the Senator from Kentucky if the Senator from Hawaii has concluded his statement.

Mr. MATSUNAGA. Will the Senator permit me to conclude my statement?

Mr. LAXALT. Certainly.

Mr. MATSUNAGA. I hope that in the consideration of the Panama Canal Treaty, we will have more of the Senators here who will go on the basis of what Edmund Burke was trying to tell his people. Of course, it has been repeated here over and over. The Senator from Vermont (Mr. LEAHY), who sits next to me, did a beautiful job yesterday.

Mr. LAXALT. When was that statement made by Mr. Burke? It was in the 1800's, was it not?

Mr. MATSUNAGA. In the 1800's.

Mr. LAXALT. Before television, before electronic communication, before the high level of education we have in this country, before we had an electorate as well informed as they are on the Panama Canal.

Mr. MATSUNAGA. The Senator has the floor and can cut me off at any time.

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

The PRESIDING OFFICER. Will Senators follow normal procedure? The floor is held by the Senator from Nevada.

Mr. MATSUNAGA. I will yield back the floor to the Senator from Nevada, so that he may yield to the Senator from Vermont.

Mr. LEAHY. Will the Senator yield 30 seconds?

Mr. LAXALT. I yield to the Senator from Vermont for a question, for 30 seconds.

The PRESIDING OFFICER. The Senator has yielded for a question to the Senator from Vermont.

Mr. LEAHY. Is the Senator from Nevada suggesting by what he has said that because now we have television, with the quality of television coverage in this country, that it should be the determining factor for us?

Mr. LAXALT. No, of course not.

Mr. LEAHY. I think he has taken a total about-face from statements I have heard him make earlier. When I sit here, for example, in the Senate, and sometimes spend all day long in a hearing, not leaving the room once, and then watch the same coverage of that on television at night, I sometimes wonder if it is the same hearing, it is changed so. I hope we do not rely on the television networks in this country to be the educating factor for our people.

Mr. LAXALT. Of course not.

The only point I make is this: I have heard Mr. Burke quoted time and time again on the Senate floor. I suggest to my colleagues that the situation then existing was far different from the situation that now exists. At that time, he was representing a constituency that was largely uneducated, uninformed, and very often reacted emotionally. Surely, his standard of care was different from ours, when the electorate of this country, by reason principally of a higher level of education, by reason, since

Watergate, of a far higher sense of political interest, are well informed. I suggest that there are millions of Americans out there who are far better informed concerning the Panama Canal treaties than we are.

I suggest that on this point, the Burke matter of substituting our judgment, in that ivory tower, and imposing our judgment on all those poor masses, those uninformed masses, is the poorest standard of all.

Mr. LEAHY. I suggest to the Senator from Nevada that he is restating what I had to say either yesterday or today. He is restating it in an entirely different form from the way I did then. I quoted my own announcement for the Senate, in which I said at that time that in any vote, the ultimate determinant is going to be my conscience and my judgment—a matter that I repeated at every campaign stop I made from then until the time I was elected.

Mr. LAXALT. I understand perfectly.

Mr. LEAHY. The discussion has gone off the basic subject we were talking about before. But with respect to the House voting on these treaties, my interpretation of the Constitution is that they cannot. However, if the Supreme Court said otherwise and if the House Members are really anxious to have a chance to vote on them, they will push the case as quickly as possible before the Supreme Court; and if the Supreme Court says they should, they will. In any event, the implementation legislation is before us, and since it contains appropriations, the House will have a chance to vote on it.

Mr. LAXALT. The only point I make, before yielding to the Senator from Kentucky, is this: The reason why I injected this into the debate, in the matter of the House of Representatives passing upon these treaties so far as the transfer of property is concerned, is that I do not think we are as responsive to the American people as are the Members of the House of Representatives, because they have to run for office every couple of years.

Numerous suggestions have been proposed that we should have a national referendum on these treaties. Obviously, that is not practical, and it probably is not good political science. But I suggest that in this type case you have the conflict situation where the House of Representatives, more accurately reflecting the sentiment of the American people, should pass on this question. It is for that reason, separate and aside from the law, that I think it makes good political science.

I now yield to the Senator from Kentucky for an observation or two.

Mr. FORD. I thank the Senator for yielding.

Each of us, in our own way, has to answer to his own conscience.

I think that the education of the people of this country, as the Senator has stated, by those who are for and against the treaties, has been extensive. Each of us has to represent his or her State as we see best.

With respect to the knowledge and the change of emotions as related to the general constituency, I can only speak for my State. We received in our State, with open arms and delight, the Secretary of State, Mr. Vance, at a large meeting in our largest community. People from all over the State were there, and he expresesd his support of the treaty and answered questions.

Ambassador Bunker came and made several statements in our State, meeting with large groups of people, stating the pros of the treaties and answering questions. Former Governor and former Ambassador Harriman was there and made many visits around the State. A distinguished former colleague of this body, Senator Cooper, made his statement and has written letters by the hundreds to people of my State. We have had groups from the State Department, from the committee that was formed in favor of the treaties, all over our State—civic clubs, schools, colleges, universities. I think our people understand. Those were all protreaty people I have talked about.

Then, those who were opposed to the treaties have been getting their message over. I think the people of my State are well-informed through the electronic media, television, radio, newspapers, visits, and the so-called townhall meetings. The percentage has been higher in opposition to the treaties as they have learned about them.

I wanted to vote for the treaties. I said that to the VFW, the American Legion, and everyobdy else. But I could not go against the people I represent, and they are knowledgeable, in my opinion. So if it is lack of conscience that I represent the people of my State as to what I think they are saying to me, then I will yield to having no conscience. But I think I am their conscience when I vote what I think they want me to do.

Mr. LAXALT. I thank the Senator from Kentucky.

The Senator from Nevada has shared the same experience. Our State has been flooded by representatives of proponents of the treaty, by various appeals, through literature and otherwise.

I find that the people of my State, particularly since these debates have started, are exceedingly well informed. In all the years I have been in this business, I have not seen a higher quality of mail. I do not mean the highly orchestrated, postcard kind of mail, but thoughtful mail, exploring the aspects and facets of this treaty that did not even occur to me.

I learn a lot from my mail, as I suspect all of our colleagues here have. The point I make is I do not think the situation we now have, in really shunting aside our constituency in terms of our substituting our judgment for theirs, is any longer relevant in considering the treaty.

Mr. MATSUNAGA. Mr. President, will the Senator from Nevada yield?

Mr. LAXALT. I yield.

Mr. MATSUNAGA. This has already been inserted into the record, but in the light of what has been said by the Senator from Kentucky—I am sorry he had to leave, but I had him read this before he left the floor—I might point out that in the October CBS-Time survey, after a second question was asked relative to whether or not the people favored the ratification of the treaties, the question was put "Suppose you felt the treaties provided that the United States could only send in troops to keep the canal open to ships of all nations, would you approve of the treaties?"

The result showed a complete reversal from opposing the treaties by 49 to 29 percent to favoring them by 63 to 24 percent.

So, public opinion definitely has shifted and, in the light of the fact that we did adopt this so-called leadership amendment, the DeConcini reservation, and the Hayakawa understanding, I would think that public opinion in the United States today would support ratification of both treaties.

Mr. LAXALT addressed the Chair.

Mr. MATSUNAGA. If the Senator from Nevada will permit me to continue, in the January NBC news survey this followup question was asked: "Would you favor or oppose approval of the Panama Canal Treaty if an amendment were added specifically giving the United States the right to intervene if the canal is threatened by attack?" Again the results, abruptly reversing the original percentages, showed 62 to 28 percent opposed to the treaties among those who had heard or read about the treaties. But the second question, after it had been put to those who, again, had heard or read about the treaties, produced a result of 65 to 25 percent in favor of the treaties.

So the actual polls which have been conducted indicate what the proponents have been saying here, that after the people listen to what is being debated here on the floor they tend to even go further and are even more against the treaties, is not true. These polls which were conducted were scientific polls and they show that the more the people of America learn about the treaties the more they become supportive of the treaties.

Mr. LAXALT. Mr. President, I must suggest to the Senator from Hawaii, and he has been in this business I think even longer than I, that there are polls and there are polls. I would think that probably standing fairly low on the totem poll of credibility of the polls are the type the Senator described, not because they are improperly done but because they are not scientifically done.

I would suggest that the recent poll conducted by Opinion Research from Princeton is scientific, it is credible and over the years has had as high degree of credibility as any polling detail firm has. We have here the Senator from Utah (Mr. HATCH), who is familiar with the results of this poll, and I would like to have him read into the RECORD, if he will, the results recently of a scientifically conducted poll on the issues relating to the Panama Canal treaties.

Mr. HATCH. Mr. President, I thank the distinguished Senator from Nevada.

When we talk about polling sources and polling people we have to hold the Opinion Research Corp. of Princeton, N.J., very high in the overall understanding of polling.

This poll taken by Opinion Research is fairly dramatic, and it was taken just recently—actually, I think, after the polls cited by the distinguished Senator from Hawaii.

The interviewing in this poll was conducted during the period of February 24 through February 27, 1978.

This poll supports the argument of the distinguished Senator from Nevada, who has asserted that the people are not as dumb as some of our colleagues in this great body believe they are, because, according to this poll, their awareness of these negotiations has risen markedly over the years, from 18 percent in June 1975, to 69 percent currently.

Over the same period of time, the majority of the public have favored continued U.S. ownership and control of the Panama Canal. Currently—and that is toward the end of February, just a few weeks ago—72 percent of the people hold this view. There has been a significant increase in the number of persons who support Panamanian ownership and control of the canal. It is now 19 percent. It used to be only 8 percent; so that has increased also. When those who favor turning over the canal to Panama are presented with an alternative proposal, namely that the United States continue ownership but improve the canal and provide economic benefits to Panama, the large majority continued to favor ownership. However, 78 percent, or three-quarters of the total public, would favor continued U.S. ownership under this alternative plan. They also conclude that there is considerable support, 68 percent, for a treaty amendment that clearly guarantees the right of the United States to defend the canal without the permission of Panama. Only 18 percent of the public believed that the present clarification, which states that the United States can defend the canal but not interfere in the internal affairs or territory of Panama, is a satisfactory defense position.

Keep in mind that 69 percent of the people have great awareness of the problem according to the poll. Three-fourths of the people believe that the military facility on Galeta Island should continue under U.S. ownership even if the rest of the Canal Zone is turned over to Panama. My distinguished friend from North Carolina, Senator HELMS, brought that out very strongly with his amendment on the Galeta Island controversy. Three-quarters of the public do not want us to give that up, but nevertheless it was shot down in the Neutrality Treaty.

There is a majority opposition, 55 percent of the American people, to the treaty provisions that would cost the United States $100 million a year until the year 2000, with most of those costs involving payments to Panama.

Most people are unaware, this poll concludes, that the treaties require the United States to have the consent of Panama before we can build a new canal. Almost half the public, 47 percent, would favor an amendment removing the requirement for Panama's consent, although 36 percent believe this requirement to be all right.

According to the Opinion Research poll, a poll without peer in the polling business and recognized all over the world as one of the great polling sources right out of Princeton, N.J., they conclude that 7 persons in 10 believe the treaties should be sent to the House of Representatives for consideration under the terms of the Constitution that state that Congress, not just the Senate but Congress, shall have the power to dispose of territory or other property belonging to the United States.

Even those who favor Panamanian ownership of the canal are largely in favor. Sixty-seven percent of those who are for these treaties are largely in favor of sending the treaties to the House of Representatives.

I could go on and on with this poll. It certainly shows there is a considerable disparity between the various polls in this country. But this poll, I think, has fairly shown that the American people are not as dumb as some of our friends and colleagues in the Senate seem to think they are.

I can tell you I know they are not that dumb. I know very well the American people understand these issues and they are concerned.

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

Mr. HATCH. I am delighted to yield to the distinguished Senator from North Carolina (Mr. HELMS).

Mr. HELMS. Mr. President, what the Senator has said is true, and I would add the further comment that the attitude of the public opposition to these treaties has prevailed despite what many believe to be an almost unconscionable bias in the coverage of these debates.

Mr. HATCH. The Senator is not talking about the radio coverage?

Mr. HELMS. No; I refer to the major news media which so carefully select material supporting their posture in favor of the Panama Canal giveaway.

Mr. HATCH. Right.

Mr. HELMS. As the Senator knows, I come from the news media, and I was especially interested in a comment one afternoon a week or so ago, when the distinguished Adm. Tom Moorer came by for a visit. He said he had been involved in many public events of some controversy throughout his career.

Mr. HATCH. He was the former Chairman of the Joint Chiefs of Staff, from 1970 to 1974.

Mr. HELMS. That is right. Admiral Moorer said he had never before seen such one-sided coverage by the major media of this country. Now, Mr. President, I am not talking about the local television and radio stations, or the local newspapers; I am talking about the New York Times, the Washington Post, and others. With all due respect for their right to publish and broadcast as they please, I believe they nonetheless have a duty to present both sides of this issue. But they are not alone in their bias.

The President of the United States has been on national television twice, 30 minutes or more on each occasion; Ronald Reagan was granted time for response by one network.

I recall the President in a fireside chat stating various reasons why, in his mistaken judgment, these treaties should be approved.

It occurred to me at the time that the President of the United States, no doubt based on information supplied him by the State Department, delivered about five or six misconceptions—to be charitable in describing them—in about 60 seconds. For example, he said the United States had never owned the Canal Zone property and does not now own it. Well, the able Senator from Utah, who is a distinguished member of the Subcommittee on Separation of Powers of the Judiciary Committee, knows that last Saturday a hearing was held on this very question, and that misconception was blown out of the water.

Mr. HATCH. That is correct.

Mr. HELMS. The Senator knows that three enormous crates were delivered by uniformed officers. These sealed crates were opened at that hearing, and therein were several thousand deeds representing the purchase of the Canal Zone property. So it is absolutely correct that the American taxpayers bought and paid for that property.

It was interesting to me that the most coverage this hearing received was about a 30-second clip on one of the networks. The Washington Post did not carry one syllable about it. Nor did the New York Times.

Mr. HATCH. That is in spite of the fact we have had Senators on this floor trying to say these agreements were leases, temporary agreements, anything but a transfer of title and all the right of sovereign ownership.

Mr. HELMS. Not only have they said it——

Mr. HATCH. And ownership.

Mr. HELMS. They have literally shouted it for the benefit of the radio broadcasts going out across the Nation. But it still is a misconception that has no doubt misled many people.

Then repeatedly it has been contended, beginning with the President of the United States, that we will not be loved in other South American countries if we do not give this dictator in Panama the canal belonging to the people of the United States.

Nothing could be further from the truth, even if it were relevant—which it is not. The able Senator from Utah just the other day laid that to rest on this floor. I think he referred to a visit to South America by this Senator at this Senator's own expense. I did not go under the aegis of the State Department. I did not use any public funds. I went, as the saying goes, on my own nickel, and I arranged my own itinerary. That just happened to include visits with the heads of state in each of several countries representing three-fourths of the population, the gross national product, and the land area of South America.

Each of these heads of state said, in effect, "Don't give Torrijos your canal."

Then I recall the distinguished Senator from Alaska who, during the debate on the Neutrality Treaty, declared in his eloquent fashion, and certainly very loudly, that the canal is obsolete, that

all it would accommodate were "a few old rust buckets," as I believe he called them, accommodating one drop of oil apiece.

Well, that was reductio ad absurdum on its face. The Senator from Alaska was colorful. But he was contending, in effect, that the canal is obsolete and we were not doing Panama any favor by giving the canal to Panama.

Well, the fact, is as the Senator from Utah knows, that 98 percent of the vessels afloat in this world can go through the Panama Canal, can transit it. The only vessels that cannot transit it are the supertankers and the larger aircraft carriers. The Senator from Utah knows that the aircraft carriers would not use the canal anyhow because aircraft carriers are not intended to move from the Atlantic to the Pacific or vice versa. You build one for the Pacific, you build one for the Atlantic. Supposedly we have a two-ocean Navy, which we actually no longer have. We have at best a one-and-a-half-ocean Navy.

As for the supertankers, there would be no place for them to dock even if they went through the canal. So that is another misconception the proponents of the treaty have repeatedly stated on this floor and elsewhere.

I am a little bit amazed, I would say to my able colleague from Utah, that despite the deluge of misconceptions distributed by those who favor these treaties, the American people have instinctively understood what is afoot on this floor in the discussion of these treaties. I am very proud of the American people for not having been any more misled than they have been.

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

Mr. HELMS. I would be glad to. However, I do not have the floor. The Senator from Utah yielded to me, and I am sure he will yield to the Senator.

Mr. MATSUNAGA. Mr. President, a parliamentary inquiry. Who has the floor?

The PRESIDING OFFICER. The Senator from Utah has the floor.

Mr. MATSUNAGA. I thought the Senator from North Carolina had the floor.

The PRESIDING OFFICER. No, the Senator from Utah yielded the floor. I understand the Senator from Utah has yielded for a commentary to the Senator from North Carolina. Has he completed it?

Mr. HELMS. No, not quite, Mr. President. I shall be through in just a moment.

In summation, as I was saying, I am very proud of the people of the United States for not having been misled by the misconceptions that have been published and broadcast. The people understand what is at stake here. They understand that this is a facility that was bought, built, and paid for with the resources and sacrifices of the American people; a facility that is vital not merely to the best interests of the United States but to the entire free world; a facility that is by no means obsolete; and a facility which leaders throughout South America fervently hope will remain in the hands of the United States of America.

I compliment the Senator for his discussion on the Opinion Research Corp. findings. I would just add this footnote: I doubt that the Senator from Utah can find one mention in the major news media of that poll.

Mr. HATCH. I have looked for it and I have not been able to find anything; and yet it is the most significant poll taken to date, with the fairest questions and from all angles, and I have to agree with the distinguished Senator from North Carolina. I have not seen anything, which is not to say that it has not been printed; I just have not seen it.

I have looked, and I certainly have looked in some of the media sources that the distinguished Senator has commented about here today.

Mr. HELMS. I thank the Seantor for yielding.

Mr. HATCH. I appreciate the remarks of the distinguished Senator from North Carolina.

Mr. MATSUNAGA. Mr. President, will the Senator from Utah yield?

Mr. HATCH. Without losing my right to the floor, for a question.

Mr. MATSUNAGA. I thank the Senator for yielding.

As the Senator from Utah (Mr. HATCH) has stated, there are those who have said they would oppose and oppose and oppose. I take it that in the view of the Senator from Utah the Gallup poll is a reliable poll?

Mr. HATCH. No, it is not.

Mr. MATSUNAGA. It is not?

Mr. HATCH. Because some of the questions were carefully calculated to produce and evoke a certain response. I will agree to this extent, that with regard to other issues I have found him to be emintently qualified. With regard to this issue, it is another matter. I think the questions were geared to get the desered responses.

Mr. MATSUNAGA. Will the Senator yield further?

Mr. HATCH. I will yield for a question, but I want to get back to the original question raised by the distinguished Senator from Vermont. It involved the contitutional issues here. If the Senator has a question he wants to ask, I will yield for that purpose.

Mr. MATSUNAGA. I would like to read into the RECORD the latest Gallup poll, inasmuch as the Senator from Utah read into the RECORD a poll conducted by another research group.

Mr. HATCH. How much time does the distinguished Senator from Hawaii wish?

Mr. MATSUNAGA. No more than 2 minutes.

Mr. HATCH. That is fair, and I yield for that expressed purpose.

Mr. MATSUNAGA. I thank the Senator for yielding.

The result of a poll, as the Senator knows, depends on how the question is phrased. While we did not use the type of question asked in the opinion research study, the Gallup poll, which was conducted in February of this year, showed that the American opinion was 48 to 40 percent in opposition to the treaties. The last survey showed that 45 percent were in favor and 42 percent opposed.

The important finding of this survey was that the more the Americans were informed, the more they tended to favor the treaties, and the better informed, as determined by the ability to answer three questions about the treaties, expressed being in favor of the treaties by 57 percent, and those better informed opposed the treaty only by 39 percent, while 4 percent held no opinion or refused to express one.

We find that Americans who are better informed about the treaties tend definitely to favor the treaties. I would say to the distinguished Senator from Utah that in my own experience, among my own constituents, I have found this to be true, that those who are better informed favor the treaties. Believe me, I have spent many, many hours convincing those who were opposed to the treaties, not by being an advocate but by merely being a conveyor of facts. I have been able to convert opponents to proponents of the treaties. I thank the Senator for yielding.

Mr. HATCH. I am very interested in the remarks of the distinguished Senator from Hawaii. He just points up what Senator LAXALT said. There are polls and there are polls and there are polls. Let me say this: I suppose the ultimate poll will be at the election box next election, and the election after that election and the election after that. I suspect if the American people are so much in favor of this hardly anybody voting for the treaties has anything to fear. But my experience, as I have gone all over this country, and have talked to all kinds of groups, is that almost everybody is overwhelmingly against these treaties.

I have, in a sense, conducted my own polls with thousands and thousands of people. All I can say is we will have to wait until the elections to see how angry the American people are.

I think the real issue which was brought up was a question involving, why do we not let the Supreme Court decide this issue, whether or not the House of Representatives should have the privilege of voting on this transfer of $10 billion of American property?

Of course, that question arises out of article IV, section 3, clause 2 of the Constitution, which reads as follows:

The Congress—

Not the Senate but the Congress, which means both Houses—

shall have the power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States;

I do not intend to go into that in great detail today, but probably on Monday or Wednesday of next week I will go into it in great detail, what type of territory the Panama area was and is to the United States, which will prove, I think, through constitutional law, that both houses should vote on this transfer of $10 billion of American property.

The point was raised here, why not let the Supreme Court do it?

Well, one reason is because the Supreme Court will not do it prior to the end of this debate, which means that if we wait until the end of the debate and we deny the House of Representatives the right to pass or reject the transfer of

American property, which is the only issue they would have a right to vote upon under article IV, section 3, clause 2 of the Constitution, then the fait accompli will have occurred. There is not much we can do about it, if we ratify these treaties, whether or not the Supreme Court ultimately determines that the constitutional issues are as maintained by those of us who sit on the Separation of Powers Subcommittee, and I sit on the Constitutional Law and Amendments Subcommittee of the Judiciary Committee.

Mr. LEAHY. I did not understand the point the Senator made.

Mr. HATCH. Would the Senator like me to yield?

Mr. LEAHY. Just so I may ask him to clarify one thing. Is the Senator from Utah speaking of the House voting on both of the treaties?

Mr. HATCH. No. I am speaking about the House voting on one issue, the transfer of American property, which is what is covered under article IV, section 3, clause 2.

Mr. LEAHY. Is the Senator, insofar as the discussion before and the vote of the Senate on the treaties, suggesting that the House vote on the same treaties that are to be voted upon here?

Mr. HATCH. No. The issue is: Under article IV, section 3, clause 2, I will requote it, "The Congress," not the Senate alone, "shall have the power to dispose of and make all needful rules and regulations respecting the Territory or other Property belonging to the United States."

To respond directly to the question, why not let the Supreme Court decide this for us, I think what we ought to consider is some of the ramifications surrounding that particular statement.

Before examining the issue of Congress rights under the treaty, we need to be mindful of our duties under the Constitution. It has been suggested by some Members that because this is a constitutional issue involving the powers of both the President and the Congress, the proper place for its resolution is not the floor of the Senate but the Supreme Court of the United States of America.

Such a view, Mr. President, represents a gross distortion of our constitutional duties, and I hope that Senators will not be persuaded to abdicate their responsibilities by this sort of reasoning. It is true, of course, that the Federal courts may ultimately be required to give their opinion on this issue. Whether they will or will not, I do not know. Whether there will be a judicial determination depends in large measure on the action we take here and on technical matters relating to the question of standing and the so-called political question doctrine.

Certainly, the issue is settled if we accept this amendment and require the House of Representatives to join with the Senate in the decision to transfer the Canal Zone to the Government of Panama. That would be the end of the issue, the end of the question.

The growth of judicial power in this century, usually at the expense of Congress and the several States, suggests that the Senate has, however, already seriously weakened our separation of powers by refusing to exercise its powers, by giving the courts a free hand to roam at will and make laws throughout the country, and by abandoning the field, so to speak, and inviting the courts to step in where legislators fear to tread, in such manner does the Senate avoid a difficult vote that might anger the people back home. This may seem prudent to those who have no desire other than to be reelected, but it is nevertheless politically and constitutionally irresponsible. As a matter of sound constitutional policy, Senators should face constitutional problems squarely. Otherwise, we might just as well close up shop and turn over the whole Government to the courts.

Over and above these considerations is the Constitution itself, which states in no uncertain terms that we must, in order to serve as Members of this body, take an oath to uphold the supremacy of the Constitution. I fail to see how we can live up to our oaths of office if we disregard the Constitution during the course of our deliberations because it is easier to throw the yoke and the burden upon the Supreme Court. To meet our obligation, we must keep an eye on the Constitution especially in this case. It is the light which guides us through the legislative process. It sets the rules and the standards by which we judge the legitimacy of legislation and the propriety of our actions. We cannot legislate in a vacuum. The first test of every measure we consider is the constitutional test. Is this bill constitutional? If it is not, we abandon it, whether it is a good bill or a bad one.

Legislative construction, in other words, is one of our primary duties. If we are mistaken, if we erroneously interpret some provision of the Constitution, then the courts are free to declare our action null and void. But the possibility of judicial intrusion does not relieve the President of his duty to interpret the Constitution when he is called upon to enforce it or to sign a bill into law. All three branches of this Government, in fact, must interpret the Constitution in order to determine the legitimacy of their actions. It is not limited strictly to the Supreme Court of the United States. As a matter of fact, the Congress has asked them many times to determine what is to be done in a given situation, and certainly here.

This is not to say that our interpretation must be final, but only that the Constitution contemplates that all three branches of the Government have a constitutional role to play, and that our system would be reduced to utter confusion if every decision, in the first instance as well as the last, were to be made by nine men who are neither elected to office nor are responsible to the people of this country, as we are.

This question of our duty to interpret the Constitution first arose in 1789, in the first Congress. It was answered and put to rest by James Madison, one of the men who drafted our Constitution, and I believe his words bear repeating today.

The issue was whether the President had the power of removal. The Constitution expressly provides that the President may appoint principal officers, but it contains no instructions for the removal of officers except in instances where impeachment is appropriate. Members of the House considered at length whether Congress may decide the question of constitutionality and specify a removal process and a statute creating an executive department.

In response to the argument made by Representative Alexander White, of Virginia, back in 1789, that Congress ought not to interpret the powers of the President, Madison rose and addressed the matter in these words:

> It has been said by one gentleman that it would be officious in this branch of the legislature to expound the Constitution so far as it relates to the division of power between the President and Senate.
>
> It is incontrovertibly of as much importance to this branch of the Government as to any other, that the Constitution should be preserved entire. It is our duty, so far as it depends upon us, to take care that the powers of the Constitution be preserved entire to every Department of government; the breach of the Constitution in one point will facilitate the breach in another; a breach in this point may destroy that equilibrium by which the House retains its consequence and share of power; therefore we are not chargeable with an officious interference . . .
>
> But the great objection drawn from the source to which the last arguments would lead us is, that the Legislature itself has no right to expound the Constitution; that wherever its meaning is doubtful, you must leave it to take its course until the Judiciary is called upon to declare its meaning. I acknowledge, in the ordinary course of Government, that the exposition of the laws and the Constitution devolves upon the Judiciary. But I beg to know upon what principle it can be contended that any one department draws from the Constitution greater powers than another, in marking out the limits of the powers of the several Departments? The Constitution is the charter of the people to the government; it specifies certain great powers as absolutely granted, and marks out the departments to exercise them. If the Constitutional boundary of either be brought into question, I do not see that any one of these independent departments has more right than another to declare their sentiments on that point.

That statement by James Madison is found in the annals at page 500.

Mr. President, James Madison's explanation of our constitutional duties of legislative interpretation is no less valid today than it was some 189 years ago. We have a right and a duty to declare our sense of the meaning of the Constitution. Either we honor the Constitution now or never. But I reject the view that we honor it only in the breach.

The reason the Founding Fathers wanted the House of Representatives to vote on the transfer of American property is that they did not want any President of the United States or anybody else, for that matter, unilaterally making a decision to transfer American property without the consent of those Representatives of the Government in the legislature. Not just the Senators, who are elected only every 6 years, but those who have to go back to the people every 2 years, because those are the people who are going to realize, first and foremost, what the feelings of the populace really are.

The Founding Fathers wanted them to vote, because those 435 Representatives, as well as the 100 Senators, speak for the people in legislative matters—or at least should, I say, should speak for the people in legislative matters.

As I look at what has been happening to this country over the last number of years, I do not think they speak very well for the people in legislative matters. As a matter of fact, I think we have gone through some problems in this country that would never have arisen were it not for the fact that one philosophy has been ruling for the last 41 years. We are in the dilemma and plight we are in today strictly because some of our colleagues in the Congress have not done their duty or done their job.

In this case, we have 231 Members of the House of Representatives—Congressmen, if you will—elected by the people every 2 years, who have demanded the right to vote on the transfer of $10 billion of American property. I, for one, think they ought to have that right. I think the Constitution means what it says when it says that the Congress shall make that decision, not just the Senate.

Let me say this: If we want to do what is right here—I do not know how Congress is going to go. I do not know whether, if we gave them this right, they would vote for these treaties or not. I know one thing: I would feel a lot better whichever way they go knowing they had the opportunity to vote in this very important, specific area. I think it is almost crucial to this Government that we do not extend Executive power beyond where it is right now.

If we allow the President, through the representatives of the Department of State, the Ambassadors and others, to ignore the House of Representatives in this matter, since they have at least demanded it and the Constitution mandates it, I think we are going to be in trouble. I think we will allow the President in one fell swoop to extend his powers in violation of the separation of powers doctrine of the Constitution, to the detriment of the House of Representatives and, I think, the whole Congress. And we, as Senators, would have abdicated our responsibility to stand up and do what is right in this matter to insist on the protection of the rights of the House of Representatives as well as the Congress.

I might add that the 231 Congressmen are a bipartisan group. They are not just Republicans, they are not just Democrats. They are from both parties. And they are not all against the treaties. A number of them are for the treaties. But they know what is at issue here.

What is at issue here is one of the most important constitutional issues in the history of the country because it involves the very balance in the separation of powers. The Founding Fathers said that we have three coequal branches of Government, and not just one President who can ride roughshod over the other branches of Government.

To be frank, when Raoul Berger, that great authority on executive privilege, was backing those who wanted to attack Nixon for some of the things they said he did—and he should have been attacked—he was the hero of America. Everybody was talking about Raoul Berger, the great constitutional expert, because he was showing the way to impeach a President, in delicate matters of first impression. I think his opinion should be interesting to know, because I agree with Senator HELMS: I agree with him that the media, the major news media in this country, have not covered this constitutional issue, and it is the most significant issue in this whole debate.

I can tell you this: You will be interested to know that Raoul Berger, who, himself, would vote for these treaties if this problem were cleared up, has come out in definitive statements and made it very, very clear that, under the Constitution, the House should vote on this issue, and if the Senate refuses to allow it, the Senate is participating in extending the President's power over and above that of a coequal branch of the Government, meaning the U.S. Congress.

Now that is what is involved here, and it is no small issue. As I have said, it is one of the most important constitutional issues in the history of the country regarding the powers of the President and the scope of the treaty power.

Let me read what Professor Berger had to say, the eminent constitutional authority, formerly from Harvard University, when he testified before Congress a few weeks ago:

> You have invited me to comment on the relation between the Article IV, § 3(2) power of Congress to dispose of property of the United States and the treaty power. Although I am in favor of the Panama Canal Treaty, I share your solicitude for the preservation of constitutional boundaries and your concern lest the function committed to Congress be diminished. I have long held the conviction that all agents of the United States, be they Justices, members of Congress, or the President, must respect those boundaries. No agent of the people may overleap the bounds of delegated power, or encroach on power granted to another. That is the essence of constitutional government and of our democratic system.

That is what we mean by a separation of powers. That is the hallmark of American constitutional life, that we do not have any one of those coequal branches more powerful than the other. At least, they are supposed to be equal, even though at times some through power of leadership do rise above the other.

There is no question that the Senate could rise much above the administration of leadership if they would just recognize the House of Representatives.

In any event, he said, in essence, this is a balance of powers, this is a separation of powers, these are three coequal branches of Government. This is the essence of constitutional government and of our democratic system:

> The effect of these hearings ranges beyond the Panama Treaty, for the Panama cession will constitute a landmark which, should the State Department prevail, will be cited down the years for "concurrent jurisdiction" of the President in the disposition of United States property. For it needs constantly to be remembered that a succession of Presidents have circumvented Senate participation in treaties of gravest import by resort to Executive Agreements. Acquiescence in such claims spells progressive attrition of Congressional powers. Your insistence on respect for constitutional boundaries will warn the Executive against encroachments on the powers of Congress; it will alert foreign nations to the fact that treaties for the cession of United States property must be subject to the consent of the House as well as the Senate.

What he was saying there is that Presidents have already ignored the Constitution by bypassing the Congress, knowing that they could not get treaties through because of the coequal power of Congress and enacted and executed executive agreements, so that they did not have to go through this constitutional process of proving that the treaties are meritorious enough to get 67 votes.

The fact is, he said, that this is recognized above all in the Panama Canal decision. We are talking about the hallmark issue of constitutional government, the thing that makes this country the greatest in the world.

He goes on to say that:

> The President, "by and with the advice and consent of the Senate", may make treaties. But Article IV, § 3(2) provides that "the Congress shall have power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States." How are the two provisions to be accommodated? For present purposes the question whether the United States has "sovereignty" over the Panama Canal need not detain us because, in my judgment, the grant of "use and occupation . . . in perpetuity" constitutes "property" no less than the familiar lease of realty for 99 years. Then there are the installations that cost billions of dollars. Disposition of these no less requires the consent of Congress that does that of territory. In 1942, the President, by Executive Agreement, promised to return certain installations to Panama subject, however, to Congressional approval.

The precedents of the past with regard to Panama calls for congressional approval before we transfer property, and the reason they do is because the Presidents of the United States knew at that time that this principle rises above—transcends—the right of a President to transfer property without the consent of Congress:

> A similar provision is to be found in the Treaty of 1955.
>
> Involving the Panama Canal.
>
> These executive constructions are confirmed by established canons of interpretation.
>
> First, there is the settled rule that "where there is in an act a specific provision relating to a particular subject, that provision must govern in respect to that subject as against general provisions in other parts of the act, although the latter, standing alone, would be broad enough to include the subject to which the more particular provision relates."

And he is quoting directly from a Supreme Court case:

> In other words, "a broad statutory provision will not apply to a matter specifically dealt with in another part of the same act." Restated in terms of the present issue, the specific power of disposition, in which the

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Footnotes not printed.

House of Representatives must concur, governs the general provision authorizing the President and Senate to make treaties.

Second, there is the canon that express mention signifies implied exclusion, which the Supreme Court has employed again and again: "When a statute limits a thing to be done in a particular mode, it includes the negative of any other mode." [5] The grant of the disposition power to Congress, in other words, excludes its exercise by Senate and President. The rule was invoked by the Founders; for example, Egbert Benson said in the First Congress, in which sat many Framers and Ratifiers, that "it cannot be rationally intended that all offices should be held during good behaviour, because the Constitution has declared [only] one office to be held by this tenure." [6] Under these rules it is of no moment that Article IV contains no express exclusion of "concurrent jurisdiction" under the treaty power. Having given Congress the power to dispose of public property, it follows that the President and Senate were impliedly excluded therefrom. Although this particular exclusion was not before the Court, it tacitly ratified the application of the foregoing rules of construction when it stated that Article IV *"implies an exclusion of all other authority* over the property which could interfere with this right . . ." [7]

Attorney-General Griffin B. Bell conceded in his statement before the Senate Foreign Relations Committee, September 25, 1977 (hereafter cited as A.G.), that "the specific powers granted to the House of Representatives and Congress in fiscal matters (Article I, section 7, clause 1, and Article I, section 9, clause 7, money bills and appropriations power) preclude making treaties self-executing to the extent that they involve the raising of revenue or the expenditures of funds. Were it otherwise, President and Senate could bypass the power of Congress and in particular of the House of Represenatives over the purse-strings."

The Attorney General went on to say:

Now Sections 9 and 7 are couched in quite dissimilar terms. Section 9(7) is framed in terms of flat prohibition: "No money shall be withdrawn from the Treasury but in consequence of appropriations made by law. . . ." Section 7(1), however, merely provides that "All bills for raising revenue shall originate in the House." Yet the Attorney General reads § 7(1) to preclude the President and Senate from "bypass[ing] the power of Congress and in particular of the House of Representatives over the pursestrings." What is there that distinguishes "All bills . . . shall originate in the House" from the Congress shall have power to dispose . . ."? The impalpability of the distinction is underlined by the State Department's concession that "treaties may [not] impose taxes." [8] Nothing in the Article 1, § 8(1) "The Congress shall have power to lay and collect taxes" distinguishes it from the Article IV "The Congress shall have power to dispose."

If the President may not by treaty "bypass" the power of the House to originate revenue-raising bills, or the power of Congress to tax, no more may he "bypass" its "power to dispose" of the property of the United States.

In their testimony before the Congress, Herbert J. Hansell, Legal Advisor, Department of State, and Ralph E. Erickson, Deputy Assistant Attorney General, cited a string of cases in support of "The power to dispose of public land . . . by treaty." For the most part they fall under boundary treaties or treaties with Indian tribes which, as will appear, turn on circumstances peculiar to themselves. Preliminary consider Hansell's citation of *Missouri* v. *Holland*, 252 U.S. 416 (1920). It arose out of a State challenge to the treaty with Great Britain for the protection of migratory birds which annually traversed parts of the United States and Canada. Justice Holmes, addressing the argument that the treaty infringed powers reserved to the States by the Tenth Amendment, stated:

"Wild birds are not in the possession of any one, and possession is the beginning of ownership. The whole foundation of the States' rights is the presence within their jurisdiction of birds that yesterday had not arrived, tomorrow may be in another State, and in a week a thousand miles away."

The Indian treaty cases constitute one of the pillars of the argument for "concurrent power"; and Attorney General Griffin B. Bell referred to them as "a substantial body of Supreme Court decisions dealing with Indian tribes which holds that a treaty may dispose of property belonging to the United States without implementing legislation under Article IV, section 3, clause 2".

To begin with *Jones* v. *Meehan*, 175 U.S. 1 (1899), both Hansell and Erickson quote, "It is well settled that a good title to parts of the lands of an Indian tribe may be granted to individuals by a treaty between the United States and the tribe, without any act of Congress, or any patent from the Executive authority of the United States." This was because the treaty merely *reserved* certain individual tracks from the cession to the United States. It "set apart from the tract hereby ceded [by the tribe] a reservation of six hundred and forty acres" for an individual Indian, and the issue was what kind of title did he take. The Court quoted from an opinion of Attorney General Taney, destined before long to succeed Chief Justice Marshall:

"These reservations are *excepted* out of the grant made by the treaty, and *did not therefore pass with it*; consequently the *title remains as it was* before the treaty; that is to say, the lands reserved are still held under the original Indian Title."

Which, of course, distinguishes that case and does not make it a case at all for the State Department.

The Court held that "the reservation, unless accompanied by words limiting its effect, is equivalent to a present grant of complete title in fee simple." That explanation presumably responded to the fact that tribal lands were generally held in common; individual titles were all but unknown, so that such title had to be secured to an individual through the machinery of the treaty. But that is far from a disposition of government land because, as Taney explained, the "reserved" title remained in the Indians. Many, if not most, of the Indian treaty cases involve just such "reserve" provisions.

We might dismiss *Holden* v. *Joy*, 84 U.S. 211 (1872) because, as Attorney General Bell noted, "The Court conceded that the question was immaterial in the case at bar because Congress had actually implemented and ratified that particular treaty." A.G.9.

In other words, Congress did exactly what we are saying should be done here.

Nevertheless, the Court, in what he terms a "strong dictum", stated that "there are many authorities where it is held that a treaty may convey to a grantee a good title to such lands without an Act of Congress conferring it. . ." I was at pains to study each of the cases cited by the Court for this assertion, and abstracted them in an appendix attached to my statement before the Senate Subcommittee on Separation of Powers. There you may see for yourself that half of the cases thus cited are entirely irrelevant.

I should add, these were cited by the State Department and the Attorney General—and were entirely irrelevant.

and that the rest concern "reserves" under which, as Taney observed, no title had passed to the United States, but remained in the given Indian. In considering such dicta, it is well to bear in mind Chief Justice Taney's statement that the Court's "opinion upon the construction of the Constitution is always open to discussion when it is supposed to have been founded in error, and that its judicial authority should thereafter depend altogether on the force of the reasoning by which it is supported."

By that standard the *Holden* dictum is no authority at all.

As to other treaties, Hansell tells us, "the precedents supporting the power to dispose of property by treaty alone can be found in the boundary treaties with neighboring powers, especially in the treaties between the United States and Great Britain in 1842 and 1846 for the location of our northeast and northwest boundaries. . . ." Settlements of boundary disputes are not really cessions of United States property. The Oregon boundary dispute proceeded from an extravagant claim: "Fifty-Four Forty or Fight"; the British, on the other hand, claimed land down to the forty-second parallel. Only when the dispute was settled by negotiation at 49 degrees could either party confidently assert that it had title. As a respected commentator, Samuel Crandall, observed, "a treaty for the determination of a disputed line operation not as a treaty of cession, but of recognition."

Among other examples of alleged treaty transfers of property, Hansell instances the return to Japan of the Ryukyu Islands. By Article III of the 1951 Treaty of Peace with Japan, the United States received the right to exercise "all and any powers of administration, legislation and jurisdiction over the territory and inhabitants of those islands . . ." While Japan renounced in Article II "all right, title and claim" to various territories, it made no similar renunciation with respect to the Ryukyus. Quoting the Legal Advisor of the State Department, that "sovereignty over the Ryukyu Islands . . . remains in Japan," a District Court stated that sovereignty over a territory may be transferred by an agreement of cession, but it concluded that there had been no cession. The Fourth Circuit Court of Appeals quoted a statement by Ambassador John Foster Dulles, a delegate to the Japanese Peace Conference, that the aim was "to permit Japan to retain residual sovereignty," and it held that the treaty did not make "the island a part of the United States, and it remains a foreign country for purposes of" the Federal Tort Claims Act.

In sum, Messrs. Hansell and Erickson have failed to make out a case for the President's "concurrent jurisdiction" with Congress in the disposition of United States property.

It remains to consider the arguments advanced by Attorney General Bell before the Senate Foreign Relations Committee. He cited *United States* v. *Percheman*, 32 U.S. (7 Pet.) 51, 88–89 (1833) to prove that "the Court held self-executing certain clauses of the Florida Treaty with Spain which related to the regulation of property rights in newly acquired territory." A.G.10. At the cited page it appears that Article 8 of the treaty provided, "all the grants of land made before the 24th of January 1818, by his Catholic Majesty . . . in said territory ceded by His Majesty to the United States, shall be ratified and confirmed to the persons in possession of the lands. . . ."

This article, Chief Justice Marshall held, "must be intended to stipulate for that security of private property which the laws and usages of nations would, without express stipulation have conferred."

In other words, the treaty provided that prior Spanish grants to *private* persons

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Footnotes not printed.

should be ratified and confirmed, a provision far removed from presidential "regulation" of *public* territory. Such regulation is confined to Congress, as *Foster* v. *Neilson*, 27 U.S. (2 Pet.) 253, 314–315 (1829) held with respect to the self-same provision: the ratification and confirmation which are promised must be by the Act of the Legislature," i.e., Congress.

REMARKS IN THE LEGISLATIVE HISTORY OF THE TREATY POWER

Before discussing the legislative history adduced by the Attorney General, permit me a few words of explanation and apology. When his statement before the Senate Committee reached me late of a Saturday afternoon, as appears in my own Senate statement, I had only about two days to prepare my comments before having them typed and forwarded to the Senate Committee. Pressure of time conduces to oversights, and I was mistaken respecting a time sequence, and in following the Attorney General's erroneous identification of a motion made by Williamson and Spaight with one he attributed to Sherman and Morris. Leisure for reflection and further research has since enabled me to correct such inaccuracies and to sharpen my analysis. And it has strengthened my conviction that the treaty power was not designed to diminish the Article IV power of Congress.

For the most part the Attorney General's citations have reference to settlement of boundary disputes by treaties of peace which, as we have seen, do not involve cessions. He begins with a remark of George Mason in the Constitutional Convention, an *in terrorem* statement during a debate on whether the Senate could share in originating revenue-raising bills. Speaking for exclusion of the Senate, Mason stated that the Senate "could already sell the whole country by means of treaties," and then toned down this extravagant overstatement to that quoted by the Attorney General: "the Senate by means of a treaty might alienate territory, etc., without legislative sanction." A.G.6, 2 Ferrand 297. Mason spoke *before* the Article IV progenitor was even proposed and referred to the Committee on Detail, 2 Farrand 321, 324, and of course before the resultant "disposition" provision was debated, id 466. Manifestly his earlier remark hardly expressed the view that the treaty power overrode the as yet unborn "power to dispose."

The Attorney General's other citations will be considered seriatim.

We will go into those more as we continue this debate on these most important issues on Monday.

All I am trying to say is that we have initiatives right here and now which involves the balance of powers of our Government, our constitutional separation of powers doctrine. It is lightly overlooked and lightly regarded, not only by the administration and the State Department and the Ambassadors in this case but also even by Members of this august body, who should be most interested in protecting the rights their fellow Members in the House of Representatives and of the Congress.

I think we should not reject the opportunity and reject the demand of the House of Representatives to approve the transfer of American property.

There is one thought I would like to finish with, and it is this: I do not think it is right for us to abdicate our responsibility to adjudge constitutional issues in these treaties by saying, "Let the Supreme Court take care of it," when we know they may never take care of it, by sliding off the issue on a political question basis. I do not see how the Supreme Court could slide off it on a political question basis when one-half of Congress would not have any say at all, if the Senate fails to recognize its right to vote on the transfer of $10 billion of American property. So how can that be a political question? If they had some right to say we do, then maybe it would be a political question. But they would be deprived of their rights and I think they would be injured. Their constituencies would be deprived of their rights to have Members of Congress stand up and be counted on this issue of transferring American property.

As I said yesterday the most significant thing that occurred yesterday was that, for the first time in I think 14 years, the American people know which Senators voted for these treaties and which Senators voted against these treaties. It is significant, whichever way the ball bounces, that they know this.

I know one thing: The people in the United States of America are starting to realize that that was just the first battle, because the Neutrality Treaty is not worth anything unless the Panama Canal Treaty, which we are presently debating, and which we will debate well into the next number of weeks, is ratified.

If the Panama Canal Treaty is not ratified, if those who share my view consist of 34 Senators, 3 or 4 weeks from now, or whenever these debates come to a close, then the Neutrality Treaty will not be of much moment or value.

I might mention, also, that it is important to note that those who brought the Neutrality Treaty forth first knew that it was much more likely that it would be ratified than the Panama Canal Treaty, which is filled with ambiguities, filled with mistranslations between the Spanish version and the English version, unprotective of the United States, costly to the United States, and is much inferior to the bad treaty that the Neutrality Treaty was.

I think it is important for the people to know that those 32 votes we received yesterday were very significant, because we need only two more votes in order to defeat the Panama Canal Treaty.

Although the debate in the last 22 or 23 days has been extremely important, it is not anywhere near as important as the debate in the future on the Panama Canal Treaty.

Much of the future of this country depends on what we do during the next few weeks as we debate the second treaty. I, for one, hope that some of the ambiguities, the translation errors—there is a whole paragraph in the English version that is left out of the Spanish version, and it is substantive—will not involve the same stonewalling that we saw in the Neutrality Treaty.

I think the most significant statement that was made right before we voted on the treaty yesterday was that if these reservations and understandings, which everybody was so eager to make a deal on and get into the resolution of ratification—if they were so binding or so important, why did not we have the courage to put them into the treaty as amendments? Conversely, if the amendments were so bad, as they were stonewalled and shot down one after another, why do we have to go to the bother of trying to correct them with reservations and understandings, which, as a number of people in this Chamber know, are not legally binding on Panama, not by principles of international law and not by their own constitution?

I believe it is important for the people, as they see their Senators during the next weekend or during the Easter recess, to express their point of view. If you think this battle is over, it is not. The big battle is before us; because if the Panama Canal Treaty goes down, the people's wishes, in my opinion, will have been heard, and the Neutrality Treaty will not be of any moment.

So then it becomes incumbent upon us to try to negotiate treaties that will be fair not only to Panama but fair to this country and protective of our interests.

I say to the American people, as these men come home to chat with you, if they tell you, "Why, I protected you by getting you a reservation or understanding," you might as well know that since they are not legally binding either under international or Panamanian constitutional law they have not done anything except to protect themselves, so that they would have an argument when they get home that they have been working to try to do what is right for you.

I think it will pay everyone in America to look at the quality of the amendments that were put forth one right after the other by sincere, dedicated, insightful, and intelligent Senators, who were fighting for the American people and were stonewalled and shot down by the very same people who claim that their reservations and understandings were protective of their interests.

Why would they not vote for the amendments to the treaty itself instead of trying to put these reservations and understandings in?

The answer to that is because the President has said that if he does not get those treaties in exactly the way they are written, as bad as they are, Torrijos will not take them. I submit to you that Torrijos will take whatever we send to him as long as it is basically fair. He has to, not because of the use of force, but because he himself knows that these amendments are fair. If we do not enact some amendments to the Panama Canal Treaty we are going to be in deep trouble.

Let me just run quickly through a list of some of the substantive and highly meritorious amendments which have been defeated, voted down by these very same people who are pushing the reservations and understandings that are not protective of the American people but would like the people to believe they are. Listen to some of the meritorious amendments that almost all of these people shot down time after time, amendments that they themselves know would make the Neutrality Treaty a much better treaty and much more protective of the United States of America.

These meritorious amendments were defeated because of the leadership's wish to avoid troubling the dictator of Panama with another election. This list

is by no means exhaustive but it does give an idea of what the Senate has rejected during the course of this debate. To me these are not by any means "killer" amendments, but they are substantive improvements without which the treaty is deplorable.

On February 27, by Mr. ALLEN, an amendment allowing a continued U.S. military presence in Panama until the year 2019, if the President certified as to its necessity.

On March 7, by Mr. HELMS, an amendment allowing continued U.S. maintenance of the highly sensitive Galeta Island communications base, which is extremely important to us.

On March 8, by Mr. STEVENS, an amendment prohibiting transit through the canal of vessels of war and auxiliary supply vessels of nations engaged in armed conflict with, or belligerent to, the United States.

On March 9, by Mr. DOLE, an amendment guaranteeing the United States authority to intervene militarily when the United States alone determines that the neutrality of the canal is threatened.

You would think that that would certainly be acceptable.

On March 10, by Mr. HELMS, an amendment setting up procedures for peaceful resolution of disputes but, in the event a threat to the neutrality or security of the canal could not be resolved by peaceful methods, each party would have the right to take, unilaterally, the measures its deems necessary.

On March 10, by Mr. DOLE, an amendment allowing for continued U.S. military presence by mutual United States-Panamanian agreement after termination of the Panama Canal Treaty.

On March 13, by Mr. DOLE, an amendment allowing the United States, independence of Panama, to declare the existence of an emergency which would permit our warships head-of-the-line passage.

I could go on and on. There were a lot of amendments.

We pointed out the translation difficulties between the two, where they take their Spanish translation to mean one thing which is very favorable to them and unfavorable to us.

Do not tell me that these amendments were not stonewalled; do not tell me they were not protective of the United States; and do not tell me they were "killer" amendments. They were amendments that any red-blooded person should have passed because they would protect this country without injuring Panama.

I go back to the original point that was made by the proponents of the treaty here, and that is this: I think that what is really involved here with the stonewalling is that the proponents of these treaties really do not seem to believe in democracy. They talk about democracy but they do not want the Panamanians to vote. They are unwilling to protect this country and force another plebiscite so they can vote on whether to accept the provisions that we have tried to put into these treaties.

Mr. LEAHY. Mr. President, will the Senator yield at that point?

Mr. HATCH. If I could finish, then I will be delighted to yield.

Mr. LEAHY. I wonder if I understood the Senator correctly that he is suggesting, because some of these amendments were defeated by very large majorities of Senators——

Mr. HATCH. Almost all were defeated that way.

Mr. LEAHY. That U.S. Senators who voted against them do not believe in democracy—is that what he is suggesting?

Mr. HATCH. That is not what I said. If it came out that way I certainly will correct it. I am asking, do they believe in democracy? My question is: Do the United States Senators who have stonewalled these amendments—now that might exclude the distinguished Senator from Vermont and it might exclude many others—really believe in democracy? By stonewalling these amendments, which are protective of the United States and which almost everyone I have talked to, including proponents and opponents, has admitted are protective, do they believe in democracy? Is it democratic to deny the Panamanians a chance to vote on amendments to the treaty? Is it democratic to deny the House of Representatives an opportunity to approve the transfer of property?

Mr. LEAHY. I might suggest to the Senator from Utah that any time someone has voted contrary to an amendment that I proposed I might have questioned that Senator's judgment, I might have prayed for his soul and redemption, but I have never ever questioned his belief in democracy or his belief in the United States of America.

Mr. HATCH. I have not named any Senators. I am saying this: I am asking a question, do they believe in democracy?

How about this matter of the House vote? The 435 representatives of the people, according to the leadership, are going to be denied their right to appear and vote on these matters, vote on the transfer of American property, as I said, $10 billion worth of American property. I think that we should be pretty solicitous of our brethren over in the House of Representatives because it goes right to the heart of the separation of powers doctrine.

What I am saying is, are we protecting our brethren in the House of Representatives? Are we projecting our own democratic and constitutional rights?

Do we understand that the Panamanian people deserve to vote even on some of these issues; and is not our duty, our highest sworn duty to uphold the Constitution and also to protect the people of the United States first?

And back to the major point: The fact that the Supreme Court might or might not be able to resolve this difficulty does not negate or take away the responsibility or the obligation of Senators in the U.S. Senate to determine constitutional questions.

I think we owe it to our bretheren in the House of Representatives, and I for one am going to argue that they should have that opportunity. I think they have made some pretty strong arguments as they have testified before some of the committees; and it was interesting to me, if you look at the list of the 232 Congressmen who have demanded the right to vote on these matters, that they comprise the chairman and ranking minority members of an awfully large number of committees over in the House of Representatives. These people are not stupid and these people do not like to be prohibited from voting on the transfer of American property, whether they are for or against the treaties; and some of them are said to be for and some of them are against.

I think our first consideration is to determine what is best for America, what is the best for our people and still, at the same time, keeping in mind what is fair to Panama, what is moral, just, and right to Panama.

As my colleagues know, I have never advocated that we should stick with the 1903 treaty, not from the beginning of this controversy until now. I have always said we need to at least upgrade that treaty, even though it has been upgraded twice in the 1936 and 1955 amendments to it.

I think we certainly should improve upon these treaties if we can, get rid of the imbiguities and the difficulties so that future problems, which we can foresee now, will not rise up and cause us greater difficulty and discord than we are already undergoing.

I think that is the danger we are facing in this matter. We have not begun to scratch the surface of the constitutional issue, and I suppose we will be into that issue on Monday.

It is my understanding we are going to discuss two agricultural bills on Tuesday, so I suppose it will take Monday, Wednesday, and maybe longer because there is a lot of feeling on this issue in the Senate.

I would just like to encourage my colleagues in the Senate on the other side of this issue that regardless of whether they want the treaty or not, they ought to seriously consider not abdicating our power and giving it to the President through an extension of power which he presently does not have under the Constitution.

I did not take time today to go through some of the other statements of eminent authorities in this area who happen to agree that the House should vote in this particular area, but we will not go into those. We will go into whatever the necessary cases are as we discuss this great constitutional question in the future.

I think it is important, however, to ask the questions of what are we here to do. Are we here to rubberstamp a treaty in favor of Mr. Torrijos? Are we here to please Mr. Torrijos? Or are we here to please the people of the United States of America?

I personally feel that the reservations and understandings charade was exactly that. The only reason we went through that basic charade was in order to get some argument settled with respect to certain Senators who were very concerned about their constituencies. If those things are important for the treaties, let us get them in as amendments so they are binding on both nations.

If the amendments are not important we can vote them down. But as we present decent amendments we ought to at least consider voting on what is right, and as we consider the constitutional issues I hopefully urge my colleagues in the Senate to consider them as deeply as they can and to consider with everything they have the rights of the full Congress in this matter, the specific language of the Constitution, the case law of the past, and the rights of our brethren over in the House.

Mr. LEAHY addressed the Chair.

The PRESIDING OFFICER. The Senator from Vermont.

Mr. LEAHY. Mr. President, I expect we will not be here much longer this afternoon, and I would hope, notwithstanding the fact that it is St. Patrick's Day and, perhaps, some share ancestry with me, some of the people in this country who share ancestry with me, might have found their loyalties torn this afternoon between certain celebrations that are known to take place in the country on March 17 and their overriding desire to sit by their radio and listen to every word of our debate today, that it is conceivable that we may not have a total radio population left at this point on Friday afternoon, and that maybe a percentage, possibly even a significant percentage, of the American people are not dropping everything right at the moment to listen to every word of our debate.

But for those possibly dwindling numbers who are still there, I think it is a fact that they should know that the Senate is well aware of the Constitution, is well aware of the history of the Constitution, is well aware, as is the Senator from Vermont well aware, of the fact that the Senate advises and consents to treaties, not the House of Representatives, but that the Senate advises and consents to treaties and has in this case and will continue to do so in this case. But for those who have been listening to the debate today, who are at home concerned, perhaps almost overridden with fear, that the House of Representatives will not have a chance to vote on this issue, and those Members of the other body who maybe have had nothing on their minds in recent weeks but their grave and overwhelming disappointment that they also would not get a chance to vote on the treaties, I say that there is a light for them and that they could put aside to some extent their fears and join with those of us who have an Irish ancestry in celebrating our favorite saint's feast day today because, Mr. President, they will have a chance to vote on some aspects of this.

All the implementation legislation will have to be voted on in the House. I know that this will come as a great relief to the Members of the House because I know how eagerly every one of the 435 Members wants a chance to vote either for or against the Panama issue, and when implementation legislation reaches there, they will vote on it with an eagerness probably surpassed only by a chance to vote on the pay raise.

As I stated earlier, if you will recall the person-by-person poll last year of the House of Representatives when it looked as if they would not have a chance to vote on the pay raise, when it was, as a result of that poll, found that the pay raise would lose, I think it was by a 4- or 5-to-1 margin, then somehow something slipped up and they got a chance to vote on it, and the pay raise was passed. And those of us who had voted against the pay raise were by that action forced, obviously forced, against their wills to accept the pay raise.

So I say that even though I suspect that most Members of the other body have been unable to enjoy St. Patrick's Day for fear that they might not get a chance to vote on the Panama issue, they will indeed get to vote on it on the implementation, as will we all, for that matter. Those of us who, like myself, serve on the Appropriations Committee, will get a chance to vote on it twice, both in committee and on the floor.

Mr. President, that is all I have to say today, and I yield to my distinguished colleague from Maryland, Mr. SARBANES.

Mr. SARBANES addressed the Chair.

The PRESIDING OFFICER (Mr. MATSUNAGA). The Senator from Maryland (Mr. SARBANES) is recognized.

Mr. SARBANES. I want to thank the very able Senator from Vermont (Mr. LEAHY) for giving us St. Patrick's Day here on the floor of the Senate.

Mr. President, I am not going to take the time of my colleagues in any extended fashion, but I do want to make some observations about the Panama Canal Treaty.

The treaty concerning the permanent neutrality and operation of the Panama Canal having been advised and consented to on yesterday by the Senate by a vote of 68 to 32—and I am always struck by the treaty requirement and the extraordinary majority it makes necessary in the Senate of the United States, for every vote against the treaty it is necessary to have two votes for the treaty. A 68 to 32 vote on any issue of difference or controversy is a very considerable margin, but it does not exceed by all that much what is required to pass a treaty, so the treaty requirement, the two-thirds requirement, is really a very heavy burden to carry.

I think it reflects well on the merits of the substantive provisions of the treaty that the Neutrality Treaty commanded a 68 to 32 margin. That having been concluded we now move to the Panama Canal Treaty, which is now pending before the Senate, which we will have to deal with in a similar fashion, as article by article it is opened for amendments. I understand there are a number of amendments pending at the desk. Is the information readily available, Mr. President, as to how many amendments there are pending to this treaty?

The PRESIDING OFFICER. There are 51 amendments, reservations, declarations, and understandings at the desk, a total of 51.

Mr. SARBANES. How many amendments are there to the text of the treaty? Is it 40?

The PRESIDING OFFICER. The Chair will determine. There are 38 amendments to the treaty.

Mr. SARBANES. I thank the Chair.

Mr. President, in the course of considering this treaty, the 14 articles which make up the Panama Canal Treaty, I am sure we will discuss many of the provisions in some detail. I simply want to underscore, since this is the treaty which applies to the 22-year period between now and the end of this century, that some of the provisions which are in this treaty accord very extensive rights to the United States.

Under the treaty, the United States is granted rights necessary to regulate the transit of ships through the Panama Canal and to manage, operate, maintain, improve, protect, and defend the canal. Those are rights which the United States will have.

Among those rights in article III, which is the article which discusses the canal operation and maintenance, it is stated:

In carrying out this function of managing, operating, and maintaining the Panama Canal, its complementary works, installations, and equipment, and to provide for the orderly transit of vessels through the Panama Canal, the United States may do a number of things, including the following:

Use for the aforementioned purposes, without cost except as provided in the Treaty, the various installations and areas (including the Panama Canal) and waters, described in the Agreement in Implementation of this Article as well as such other areas and installations as are made available to the United States under this treaty and related agreements.

Second, the United States can make such improvements and alterations to the aforesaid installations and areas as it deems appropriate consistent with the terms of the treaty;

Third, the United States can make and enforce all rules pertaining to the passage of vessels through the canal and other rules with respect to navigation and maritime matters;

Fourth, the United States can establish, modify, collect, and retain tolls for the use of the Panama Canal, and other charges, and establish and modify methods of their assessment;

Fifth, the United States regulates relations with employees of the U.S. Government; and

Sixth, the United States will provide supporting services to facilitate the performance of its responsibilities.

Those are rather extensive rights, and those are the rights, among others—because the treaty goes on to set out some general provisions—which the United States will have over the next 22 years in the operation and the management of the Panama Canal. Of course, once we reach the end of the century, the transition will be accomplished with the operation and management of the canal then being done by the Republic of Panama.

The treaty further provides that in carrying out this function of managing and operating the canal it shall be done by a U.S. Government agency to be known as the Panama Canal Commis-

sion. Nine members, five of them Americans and four of them Panamanians, will comprise the Commission.

They will be the board which will supervise the work of the Panama Canal, five of whom shall be nationals of the United States and four of whom shall be Panamanian nationals proposed by the Republic of Panama for appointment to such positions by the United States of America in a timely manner.

So the majority, five, will be Americans and the remainder, four, will be proposed by Panama to the United States for appointment.

The treaty also provides that the United States shall have primary responsibility to protect and defend the canal. There is an agreement, comparable to a status-of-forces agreement, which has been negotiated to cover the rights of our military people and their dependents. We will have the primary responsibility to protect and defend the canal.

To facilitate cooperation of the Armed Forces of both countries in the protection and defense of the canal—and this is an effort to work out a cooperative relationship between the United States and the Republic of Panama—there will be a combined board established by the United States and the Republic of Panama comprised of an equal number of senior military representatives of each party. These representatives shall be charged with consulting and cooperating on all matters pertaining to the protection and defense of the canal, and with planning actions to be taken in concert for that purpose.

So there is a combined board that will consult and advise and plan.

The treaty goes on to provide that such combined protection and defense arrangements shall not inhibit the identity or lines of authority of the Armed Forces of the United States of America or the Republic of Panama.

While we have this combined board for the purposes of consultation, for the purposes of advice, the lines of authority of our Armed Forces are not inhibited. Of course, as I mentioned earlier, under another provision of this treaty the primary responsibility to protect and defend the canal is in American hands.

I think it is clear under these two articles I have been quoting, article III and article IV, that both in terms of operating and managing the Panama Canal and in terms of protecting and defending the Panama Canal, it is the United States which is given the powers and authorities under this treaty to meet those responsibilities.

Other provisions in the treaty provide for a shared effort in trying to protect the environment in the Republic of Panama, something important to both countries. The United States, of course, depends, as do all countries who seek to use the canal, on the watershed contained in the Republic of Panama to produce the water to make it possible for the canal to function.

There are also in article VIII very extended provisions giving the United States certain privileges and immunities in the course of our operations.

Let me just read a couple of those so we can have some appreciation of the range and extent of the privilege and immunities which the United States will have.

Agencies and instrumentalities of the Government of the United States of America operating in the Republic of Panama pursuant to the treaty and related agreements, shall be immune from the jurisdiction of the Republic of Panama.

There is also a provision that installations owned or used by the agencies or instrumentalities of the United States of America operating in the Republic of Panama pursuant to the treaty and related agreements, and their official archives and documents, shall be inviolable.

So there is an effort here, recognizing the responsibilities which the United States will continue to have over the next 22 years, almost a quarter of a century, with respect to operating, managing, protecting, and defending the Panama Canal, to give to us a grant of rights sufficient to carry out those responsibilities. I think that grant is very important. I think that many people do not fully appreciate how extensive and extended those grants of authority are in terms of giving the United States the ability to continue to meet is responsibilities with respect to the Panama Canal.

There are other provisions in the Panama Canal Treaty that deal with the transition over to Panama of various functions in the Canal Zone. Under the treaty the zone will cease to exist as a corridor of land dividing the Republic of Panama in two and, in effect, will become part, just like any other part, of the territory of the Republic of Panama. Certain rights will be reserved for the operations of American Government agencies and certain protections provided for American employees, military and civilian, and their dependents and families, who are involved in the Republic of Panama in helping to carry forward the operation, management, protection, and defense functions with respect to the Panama Canal. But the zone dividing the country into two will be gone. So that situation, an American extraterritorial presence, will no longer be the case.

Now, at one point in the debate, someone suggested that only a small portion of the population of Panama was on one side of the Canal Zone, that most of the population was on the other side; and therefore, they suggested it really should not matter very much to the Panamanians that their country was divided by this zone. Mr. President, how can we overlook the sensitivity of any people to another power controlling a strip of land through their country and thereby dividing their nation. I can understand the sensitivity that any people would have—I think we in the United States would be extremely sensitive in the reverse situation. In fact a good percentage of the population of the Republic of Panama is located on either side of this Canal Zone and it really does therefore in every sense, divide the country into two. Panamanians, when traveling through the zone are in effect, traveling through another jurisdiction. They are subject, then, to different courts and different police, and so forth. One of the things that will take place under the treaty is that there will no longer be a zone dividing the Republic of Panama into two, with all of the problems that have come with that situation.

Mr. President, there are some very careful provisions contained in this treaty with respect to employment: First of all, an effort to protect those people already working on the Panama Canal and their particular rights; and second, an effort to give an opportunity to include the Panamanian people more and more in the work of the Panama Canal; so that, over time, they, in effect, will gain the experience and the training that will be necesesary to manage, conduct, operate, and maintain this important facility when at the end of the century they assume full responsibility. There are some very careful provisions that have been worked out to accomplish this, I think reflecting a great deal of concern, for those who are already working there and also a concern that the people of Panama should have an opportunity to participate in making this canal work. In a sense, it is a great opportunity to show the benefits of mutual cooperation and a great opportunity for young people and not-so-young people in the Republic of Panama to develop the skills that will enable them to operate this major facility.

Almost 80 percent of the work force today on the Panama Canal are Panamanians. It has grieved me greatly, in the course of some of the debate that we have had on this issue, to have it suggested by some on the floor of the Senate that the Panamanians may not be capable of operating the canal, that they do not have the capacity to conduct this major facility. I think that is nonsense. The work of the canal today is largely carried on by Panamanians.

On a visit to Panama, meeting with employees who work on the canal, one of the inquiries that was made was how effective the Panamanians were as employees. The response we received was that they were the equal in every respect to other employees, Americans or others, who were working on the canal. I think it is clear that the capacity is there.

What is needed is the opportunity. These treaties hold out an opportunity to the people of Panama to move increasingly into higher positions and to assume, more and more, the responsibility for the operation of this canal.

In that sense, it is a great opportunity, not only for them but for the United States, working with the people of Panama in order to assure the efficient and effective operation of this canal indefinitely into the future.

Mr. President, there are other provisions in the treaty which I am sure we will discuss at much greater length—a provision for a sea-level canal and the provisions for Panama's economic participation in the canal, in which the tolls will provide certain payments to the

Republic of Panama, which, of course, will then bring them a return on their greatest natural asset commensurate with what they have devoted to this international waterway.

In short, Mr. President, the treaty now before us, the Panama Canal Treaty, that we are now considering, having approved the other treaty 68 to 32, offers the opportunity to develop between the United States and the Republic of Panama and between the peoples of our two countries a cooperative relationship which can be an example to the whole world. At the same time, it insures certain grants of rights to the United States which will fully enable us to meet our role to operate and manage the canal and our role to protect and defend the canal, since we will have the direct responsibility for both of those functions for the balance of this century, for almost another quarter of a century.

I submit, Mr. President, that this treaty, just like the one that has been approved, is a treaty that well serves important basic American interests and ought to command the approval of this body.

Mr. SARBANES. In the days ahead I know we will consider some 40 amendments, or those, at least those that will be called up that are pending at the desk. I hope we will be able to proceed, as I have indicated earlier in the debate, in an expeditious way to do that.

Someone said earlier today that the first treaty was like an exhibition game and that this was the real game. I differ with that. It is really like a doubleheader. You know, we have had just a brief pause in between and we are now into the second game of the doubleheader.

I must say, if you talk about cooperation between the United States and Panama, referring to baseball, I end on this note: A major sport in Panama is baseball. They are close to us in so many ways and this is but another example. Rod Carew who is such an extraordinary performer in this country and as I think many people know, he is a Panamanian citizen. He has been the batting leader in the American League now for a number of years with an extraordinary average, almost .400 last year, and I only bring that up at the close of this afternoon to underscore once again how much, in so many ways, we share as two peoples; and I hope that the debate that we have had over the course of the past weeks will not in any lasting way do anything to harm the relationship or weaken the friendship which has existed between the people of this country and the people of Panama.

It has been a special friendship. I hope that we will move ahead to approve this treaty, and that we will do it in such a way that the strength of the ties between our two countries will develop and increase.

Mr. PROXMIRE. Mr. President——

The PRESIDING OFFICER. The Senator from Wisconsin.

Mr. PROXMIRE. Mr. President, I ask unanimous consent to be allowed to proceed for 2 minutes, as in legislative session.

The PRESIDING OFFICER. Is there objection?

Without objection, it is so ordered.

WHY WE MUST RATIFY THE GENOCIDE TREATY

Mr. PROXMIRE. Mr. President, I ask the Senate's consideration of an admittedly unpleasant scenario. Assume that somewhere in the world, a group of individuals perpetrates the brutal mass murder of another group because of racial hatred. Not unreasonably, there would be an overwhelming call for the punishment of this group. I would expect Americans to be among those who speak out for such retribution.

Now consider how other nations would react to our condemnations. For nearly 30 years, we have consistently refused to ratify a treaty, the Genocide Convention, which condemns these very actions. Would it be unreasonable for other nations to label our disapproval hypocritical? I doubt it.

Of course, I am aware that countless groups within this country have supported the treaty. Every President since the drafting of the treaty has given the same support. And I would assert that the great majority of Americans feel the same way. Yet, the fact remains that through the Senate's failure to ratify the treaty, the United States has officially failed to condemn acts of genocide. This reluctance has not been unnoticed by the rest of the world.

Failure to ratify the treaty also places us in a difficult position with any genocide trials which might result. The Genocide Treaty prescribes what does and does not constitute genocide. This insures that there is no de facto punishment. It is a fair method for trying those accused of genocide; by failing to ratify the treaty, we have failed to endorse this sound procedure.

To prevent the embarrassing situation I have presented, it is necessary for us to ratify the Genocide Treaty. Eighty-three countries have gone on record as being unalterably opposed to this abhorrent crime. Let us be included in this group.

PARAQUAT-CONTAMINATED MEXICAN MARIHUANA POSES SERIOUS HEALTH RISK TO MANY AMERICANS

Mr. PERCY. Mr. President, recent reports have come to my attention, and have now been made available to the public, indicating that more than 20 percent of the samples of marihuana seized at the Mexican border are contaminated with the herbicide, paraquat; that when analyzed, these samples are showing increasingly higher amounts of paraquat residues; that tests now conclusively established that the highly toxic paraquat is in fact found in the smoke of sprayed marihuana which is inhaled into the human body; and that such inhalation, particularly with prolonged exposure, may seriously impair the ability of the lungs to absorb oxygen—a condition known as fibrosis.

The U.S. Government has provided the Government of Mexico with millions of dollars—some $40 million over the last 3 years—for equipment and technical assistance related to the spraying of poppies with herbicides. Much of the funds have gone toward the purchase of planes and spraying equipment, the training of personnel, and repair and maintenance expenses—all, in turn, used by the Mexica Government not only for poppy eradication, but also for the spraying of marihuana fields. Mexican marihuana, which comprises about 60 percent of the hundreds of tons of marihuana brought into this country annually, is being sprayed with paraquat.

In May 1977, I requested information from Secretary of State Vance concerning the spraying of Mexican marihuana and the U.S. involvement in such programs. Pursuant to this request, an interagency meeting was held under the auspices of the White House Office of Drug Abuse Policy (ODAP), which included representatives from the National Institute on Drug Abuse (NIDA), the Department of State, the Drug Enforcement Administration (DEA), the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), and the Department of Agriculture for the purpose of developing a plan for paraquat testing. The meeting was chaired by Dr. Peter Bourne, the very able Director of ODAP and Special Assistant to President Carter.

As an outgrowth of that session, tests were designed to determine if the smoking or consumption of paraquat-tainted marihuana posed a serious health hazard to a portion of the 13 million regular marihuana users in this country.

Now, 10 months later, these tests, conducted by the National Institute on Drug Abuse, have produced definitive and highly disturbing results. In a March 12, 1978 release, HEW Secretary Joseph Califano, Jr., reported that, based upon samples actually seized, approximately 21 percent of the marihuana now coming into this country is contaminated with paraquat. The maximum level of contamination which EPA currently allows in this country is 0.05 parts per million. Yet, the NIDA reports disclose that some paraquate residues on Mexican marihuana are above 2,200 parts per million—one batch tested at as high as 2,264 ppm. That is 40,000 times the EPA tolerance level. The average approximated 450 ppm.

Surely, the hazards of such levels of paraquat in marihuana, and the associated risks affecting so large a segment of the American public, including millions of its younger citizens merit an immediate response by this Government.

Secretary Califano issued a warning that marihuana contaminated with the herbicide paraquat could lead to permanent or irreversible lung damage for regular and heavy users of marhauna, and conceivably for occasional users as well. The new findings clearly indicate the need for swift action on the part of this Government to insure the health and welfare of a significant number of our citizens. These citizens are endangered as a result of our own Government's involvement, however direct or

indirect, in Mexico's program to spray marihuana fields with paraquat. The health risk is evident and it is serious: we cannot afford to wait for another protracted period before doing everything possible to induce the Mexican Government to terminate the use of paraquat in its spraying program, or to substitute a safer herbicide.

Such a safer herbicide does not now appear to be available. To wait any length of time before one is identified—without in the interim doing anything to urge Mexico to suspend its current paraquat spraying program—could needlessly endanger a large segment of our population. This administration, through the Department of State, should do everything possible to get the Mexican Government to act responsibly and with dispatch in this respect. Having met yesterday morning on this matter with administration officials, I am not persuaded that, as a government, we have done or are doing everything we can.

On the other hand, having received a response 2 days ago from Secretary of State Cyrus Vance to my letter of last week, I am hopeful that his own expressed concern for the problem and his assurance that he "will do everything possible to resolve it" signals that corrective action is forthcoming. I trust that his message will get through to all segments of the State Department and the administration which may have a role in addressing this concern. I was most disturbed, last Friday evening, March 10, 1978, to hear Secretary Vance's special assistant for narcotics matters tell a nationwide NBC-TV audience that she felt the Department had no responsibility to deal with this matter since the drug involved, marihuana, was illegal anyway. This would seem to overlook reality. To Secretary Vance's credit, his direct response acknowledges the responsibility of the United States in this regard, and his personal expression of concern belies the earlier position taken by his aide.

Mr. President, so that the background of this problem is clearly stated, I ask unanimous consent to have printed in the RECORD the following materials relevant to this matter: My correspondence with the Department of State and with the White House Office of Drug Abuse Policy; the warning issued last week by DHEW Secretary Joseph Califano, upon being apprised by NIDA of the new, disturbing test results; the preliminary report of DHEW, entitled: "Contamination of Marihuana with Paraquat"; a White House press release dated December 9, 1977, which dealt with the problem.

I also ask unanimous consent to append to my remarks a copy of an article by Jeffrey Smith, from the February 24, 1978, edition of Science magazine, entitled, "Spraying of Herbicides on Mexican Marihuna Backfires on U.S.". This excellently researched article provides considerable information on the herbicide paraquat, the history of its use, and important background on this subject. And finally, I also include a fine article by Ken Bode from the March 18, 1978, edition of the New Republic magazine, entitled "Poisoned-Marihuana."

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

HEW NEWS

HEW Secretary Joseph A. Califano, Jr. today warned that marihuana contaminated with herbicide Paraquat could lead to permanent lung damage for regular and heavy users of marihuana, and conceivably for other users as well.

The Secretary issued the warning based on preliminary studies conducted by HEW's National Institute on Drug Abuse. Paraquat is a herbicide which is sprayed on marihuana plants in Mexico to destroy them, under a program operated and funded by the Mexican government. The contaminated marihuana, which may be disguised for street sales by mixing it with other marihuana, is not easily detected by the average user.

Secretary Califano said, "The report's preliminary findings suggest that if an individual smokes three to five heavily contaminated marihuana cigarettes each day for several months, irreversible lung damage will result. The report cautions, however, that there could also be a risk of lung damage for individuals who use marihuana less often or in smaller amounts. Although these results are preliminary, the report concludes that Paraquat contamination may pose a serious risk to marihuana smokers."

Secretary Califano indicated that a report on the preliminary findings has been sent to the White House Office of Drug Abuse Policy, the Departments of State, Justice, and Agriculture, and the Environmental Protection Agency, to permit these agencies to investigate whether there might be alternative herbicides which might be considered as potential substitutes for Paraquat.

Marihuana sprayed with Paraquat can be quickly harvested before the plant dies and in such cases harvested marihuana contaminated with Paraquat may find its way into this country. Roughly 60 percent of marihuana in the United States is illegally imported from Mexico. During the past year, concern has been expressed by the public over the health hazards posed by Paraquat contaminated marihuana.

In chemical analyses of 63 marihuana samples confiscated in the Southwestern United States by the Drug Enforcement Administration from October 1976 through late 1977, the National Institute on Drug Abuse found 13 samples (21 percent) to be contaminated with Paraquat with an average level of 450 parts per million.

Paraquat has been used in this country since the early 1960s for agricultural purposes. However, it does not persist in the soil and presents little hazard when used in the amounts precribed for agricultural crops. The maximum level of contamination that is permitted for domestic uses is 0.05 parts per million, which is far below the levels found in the marihuana samples tested.

CONTAMINATION OF MARIHUANA WITH PARAQUAT: PRELIMINARY REPORT

MARCH 11, 1978.

Since 1975, the Mexican Government has operated a marihuana eradication program. The principal herbicide employed in this program is Paraquat 1,1′ dimethyl-4,4′ bipyridinium dichloride, a chemical patented in England and manufactured in this country and in Mexico. Paraquat is sprayed from aircraft onto marihuana plants, and the herbicide interacts with sunlight to cause the plants to die within the course of roughly forty-eight hours. This eradication program is operated and funded by the Mexican Government.

Paraquat has also been used in this country since the early 1960's for agricultural purposes. The most common use of Paraquat is as a means of cleaning the seedbed before planting crops, but it is also employed for such purposes as weed control in fruit orchards and as an aid in harvesting mature plants such as cotton and soybeans. Paraquat does not persist in the soil and presents little hazard when used in prescribed amounts. It is one of 23 herbicides which the Environmental Protection Agency (EPA) is proposing to restrict only to trained farmers and users. The use of Paraquat on food crops as a direct harvesting aid is not recommended by the EPA. Use in orchards for weed control can result in some contamination of the fruit, but this contamination must not exceed 0.05 ppm prior to marketing.

Paraquat in concentrated form is highly toxic and has been responsible for at least 25 deaths in the United States due to accidental poisoning. It tends to concentrate in lung tissue whether it is ingested or inhaled The toxic reaction with the lung produces a condition called fibrosis, which reduces the capacity of the lung to absorb oxygen. Inhalation of Paraquat creates a greater risk of lung damage than ingestion of an identical amount.

During the past year, concern has been expressed about the possibility that Paraquat-contaminated marihuana was entering the United States and might pose a health hazard to marihuana users. Marihuana sprayed with Paraquat can be quickly harvested before the plant dies and in such cases harvested marihuana contaminated with Paraquat may find its way into this country. Roughly 60 percent of marihuana in this country is imported from Mexico.

As a result of this concern, a study was initiated last summer at the National Institute on Drug Abuse to answer two specific questions: (1) Is contaminated material entering the country in any significant amount; and (2) What are the chemical constituents of the smoke from Paraquat-contaminated marihuana which might create health risks beyond those presently associated with marihuana smoking.

STUDY RESULTS

These studies have provided the following data:

1. One hundred samples of marihuana confiscated by the Drug Enforcement Agency have been chemically analyzed for Paraquat. The average weight of the seizures from which these samples were taken was 699 lbs. All of the samples which were tested for Paraquat came from the Southwest United States, the area where contaminated samples are most likely to be found.

Thirteen of these were unambiguously identified as contaminated with Paraquat. All were confiscated after October 1976, and constitute 21% of the 63 samples tested that were confiscated after that date. The contamination ranged from three to 2,264 parts per million (ppm), with an average contamination of 452 ppm. This level far exceeds the 0.05 ppm level that is tolerated for domestic uses.

Since the sampling was not random in a statistical sense, no clear extrapolation of this data can be made to estimate the total amount or distribution of Paraquat-contaminated marihuana in the United States. No attempt was made to design a statistically valid random sample selection since the intent was only to answer the question of whether contaminated material was entering the country and the approximate level of its contamination.

2. Marihuana plant material which was treated with a Paraquat solution in order to produce a "contamination" level of approximately 10,000 ppm was burned in an apparatus designed to collect all the smoke produced. This artificially high concentra-

tion was prepared to expedite the analytical procedures. The apparatus is constructed of glass and allows the plant material to burn in an air atmosphere at a temperature similar to that of a marihuana cigarette. Although this method of burning is not exactly the way marihuana burns in a cigarette, it is sufficiently analogous to provide data which can be generally related to the real smoking situation.

The smoke was subjected to chemical analysis and it was determined that the major compound in the smoke resulting from the presence of Paraquat was a compound called bipyridine, which is formed from the chemical breakdown of Paraquat when it is burned. Bipyridine is a compound found in tobacco smoke, and is not itself likely to contribute significantly to the toxic effect of marihuana smoke.

However, it has also been determined that a small amount of Paraquat is carried in the smoke, although the exact amount of Paraquat resulting from the burning of plant material at a specific contamination level has not yet been determined. Efforts to obtain more exact determinations are in progress. However, rough estimates from the data in hand suggest that approximately 50 to 250 nanograms of Paraquat can be expected to be present in the smoke from a single marihuana joint contaminated at 450 ppm Paraquat. Analysis is also being carried out on the smoke from Mexican-variety marihuana grown at the United States Department of Agriculture and treated with Paraquat under simulated field conditions. Only when this analysis is complete will it be certain that the conclusions from the 10,000 ppm material discussed above are completely valid.

PRELIMINARY CONCLUSIONS

1. Considering the low-dose, chronic studies done in animals, it appears that the oral administration of marihuana treated with Paraquat (e.g., in brownies) probably creates little hazard. An individual would have to ingest approximately two full ounces of marihuana every day for two years (at contamination levels of 2,000 ppm) to reach the lowest dose level where cell damage has been observed in animals.

2. Smoking marihuana containing paraquat presents the greatest potential hazard. Studies of animal inhalation and of agricultural workers engaged in repeated spraying of Paraquat, when combined with other evidence, suggest that there exist certain risks to the marihuana smoker.

First, heavy users of marihuana run a possible risk of fibrosis which could be clinically measurable if the marihuana they smoke is contaminated with Paraquat. A rough estimate can be made that an individual who smokes three to five marihuana cigarettes each day could suffer measurable lung impairment after several months if the marihuana contained at least 450 ppm of Paraquat. It is less likely, though not inconceivable, that clinically measurable damage could be suffered by individuals who consume marihuana in smaller quantities, less regularly, or with lower levels of Paraquat-contamination. These risks of suffering fibrosis—which is an irreversible condition—must be considered against the use patterns of marihuana in this country. Recent surveys conducted by the National Institute on Drug Abuse suggest that nearly nine million Americans have used marihuana over 100 times in their life. Thus, contamination of marihuana with Paraquat may pose a serious additional risk for marihuna smokers.

Second, adverse effects on the lungs from the tar in marihuana smoke have been documented in the scientific literature. It is possible that the effects are increased by the contamination of marihuana with Paraquat, but there are no clear data presently available on this point.

There is no evidence at present that Paraquat is carcinogenic to lung tissue, but studies in this area are incomplete.

A final report of the technical details of these studies will be prepared within the next four to six weeks and provided to the Departments of State, Justice, and Agriculture, the Environmental Protection Agency, and the Office of Drug Abuse Policy.

THE SECRETARY OF STATE,
Washington, D.C., March 15, 1978.

Hon. CHARLES H. PERCY,
Ranking Minority Member, Subcommittee on Investigations, Committee on Governmental Affairs, U.S. Senate

DEAR SENATOR PERCY: Thank you for your letter of March 9 in which you expressed your concern that Mexican grown marijuana illegally entering the United States and sprayed with the herbicide paraquat in the Mexican eradication program could be harmful for users of marijuana in the United States.

In response to your letter to me of May 6, 1977, on this potential danger to American marijuana users, the Department indicated that it shared your concern that the means employed to control illicit drug abuse and international narcotics traffic do not result in individual suffering or ecological damage.

An interagency inquiry into the problem was authorized by the White House in May 1977. As you know, Secretary Califano released the preliminary findings of the study on March 11. The report concludes that paraquat contamination may pose a serious risk to marijuana smokers. Secretary Califano is sending copies of the report to the Departments of State, Justice, and Agriculture, and the Environmental Protection Agency to determine what action they might take in regard to reducing the health hazard of paraquat being sprayed on marijuana.

In view of the conclusions of the interagency study, the findings will be made available promptly to the Government of Mexico. Additionally, information concerning alternative herbicides which might be substituted for paraquat in the Mexican eradication program and which pose less of a health hazard will be passed to the Mexican Government.

On the basis of the excellent cooperation demonstrated by the Mexican Government in carrying out its international treaty obligation in narcotics control, we can assume that Mexico will examine the results of the new HEW study carefully with appropriate consideration for any health hazards that may affect its citizens or citizens of any other country.

The Mexican Government's decision in November 1975 to use aerially sprayed herbicides followed a careful study of the herbicides selected, 2-4-D against opium poppies and paraquat against marijuana, with consideration that the herbicides should be safe for man and environment, as well as effective in destroying the illegally grown plant.

As you know, the Governments of Mexico and the United States are parties to the Single Convention on Narcotic Drugs of 1961, which specifies in Article 22 as amended, that a party prohibiting cultivation of the opium poppy or the cannabis plant shall take appropriate measures to seize any plants illicitly cultivated and to destroy them. Thus, Mexico has taken seriously its obligation to destroy narcotics plants, but its Government has made it clear that in attempting to alleviate the harmful effect of illicit drugs, it also intends that its narcotics control efforts would be carried out in a manner that would avoid an adverse effect on the ecology or the health of its citizens.

The primary interest of the U.S. Government in supporting the Mexican eradication program through international narcotics assistance is to reduce the movement of illicit heroin entering the United States. The Mexican eradication effort against opium poppies is showing a significant reduction in heroin in the United States based on declining heroin overdose deaths, increased price levels, and declining purity levels based on hercin seizures. Consequently, the program is reducing drug abuse in the United States. This progress, which is obviously in our best interests, must be maintained along with efforts being made to reduce the health hazard of paraquat contamination of marijuana.

You may be assured that I personally share your concern with this problem and will do everything possible to resolve it.

Sincerely,

CYRUS VANCE.

COMMITTEE ON GOVERNMENTAL AFFAIRS, SENATE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
Washington, D.C., March 9, 1978.

Hon. CYRUS R. VANCE,
Secretary, Department of State,
Washington, D.C.

DEAR MR. SECRETARY: Recent reports have come to my attention indicating that more than 20 percent of the samples of marijuana seized at the Mexican border are contaminated with the herbicide paraquat; that when analyzed, these samples are showing increasingly higher amounts of paraquat residues; that tests now conclusively establish that the highly toxic paraquat is in fact found in the smoke of sprayed marijuana which is inhaled into the human body; and that such inhalation, particularly with prolonged exposure, may seriously impair the ability of the lungs to handle oxygen—a condition known as fibrosis.

I wrote you on May 6, 1977, requesting information on the United States' involvement in the spraying of the toxic herbicide, paraquat, on Mexican marijuana fields. On July 18, 1977, I wrote Dr. Peter Bourne, Special Assistant to the President, urging him to expedite the conduct of tests aimed at determining the health risks associated with paraquat-treated marijuana. By December, the White House reported that samples seized at the border showed "about 50 parts per million (ppm)" of paraquat. The White House release further stated "The absolute maximum amount of paraquat likely to be found on plant material is about 500 parts per million." But Dr. Richard Hawks—the official-in-charge of the paraquat study being conducted by the National Institute for Drug Abuse—has recently reported that current samples are showing up to 655 ppm; and that with each batch of new samples, the amount of paraquat-contamination appears to be increasing. Informally, reports have reached me indicating that government-seized Mexican marijuana coming into this country has been found to contain as high as 2,200 ppm of paraquat contamination. Surely, the hazards of such levels of paraquat in marijuana, and the associated risks involved for a large segment of the American public, merit immediate and high-level response. Yet it has now been more than ten months since I first brought this problem to your attention and almost eight months since my July letter to Dr. Bourne urging that the government's inquiry into the paraquat problem be expedited because of the potential for serious harm to American citizens. With each passing day, the matter takes on more distressing proportions.

According to Dr. Hawks, we still do not know of the precise risk such marijuana contamination poses, but the potential risk is serious. My office was informed late last week that toxicity reports on paraquat-treated marijuana, when inhaled through smoking, are not conclusive and a more refined test was required. I have been informed as of today that subsequent testing indicated that paraquat traces are indeed trans-

mitted in the smoke. At the same time, it appears that studies conducted on paraquat-treated marijuana which might be consumed report only what doses would be lethal. Clearly, sub-lethal doses might well cause permanent damage—e.g., to the brain or lungs—to some proportion of the 13 million Americans who, by government estimates, are regular marijuana users. Yet, according to Dr. Hawks, none of the tests currently being conducted or which could be conducted will be able to tell us anything about the sub-lethal risks involved when persons consume marijuana contaminated with the highly toxic paraquat. Whatever information we still do not have, as a result of recent findings, we now know that no research will be able to tell us that paraquat is not a hazard to human health.

Whatever the reasons, we now know that more paraquat-tainted marijuana containing increasingly higher levels of paraquat residues are entering the United States and being sold to unsuspecting users and that there exists a clear risk to human health, of our own making. And yet, no action is being taken to induce the Mexican government to halt the use of paraquat in its spraying program, or to substitute a safer herbicide.

In light of recent developments, I believe that the United States Government should undertake immediately to safeguard the health and welfare of a significant number of our citizens who may be endangered as a result of this government's involvement, however direct or indirect, in Mexico's program to spray marijuana fields with paraquat. Without question there is a duty owed to those citizens when our government is acutely aware of hundreds of tons of marijuana crossing the border from Mexico and has lent behind-the-scenes assistance to the spraying effort which causes the marijuana to be a risk to human health.

Parenthetically, I believe that the Government of Mexico may well want to reconsider its paraquat program in view of the possible risks of lung damage to peasant farmers, and to officials in the spraying program itself who are handling this substance.

I would like your immediate response to ascertain why, in the face of an unknown but possibly serious health risk, this government has not, to date, acted with reasonable dispatch to eliminate the risk, and what actions you propose to take at this critical time.

Sincerely,

CHARLES H. PERCY,
Ranking Minority Member.

COMMITTEE ON GOVERNMENTAL AFFAIRS, SENATE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
Washington, D.C., May 9, 1978.

Hon. PETER G. BOURNE, M.D.,
Special Assistant to the President, The White House, Washington, D.C.

DEAR DR. BOURNE: Recent reports have come to my attention indicating that more than 20 percent of the samples of marijuana seized at the Mexican border are contaminated with the herbicide paraquat; that when analyzed, these samples are showing increasingly higher amounts of paraquat residues; that tests now conclusively establish that the highly toxic paraquat is in fact found in the smoke of sprayed marijuana which is inhaled into the human body; and that such inhalation, particularly with prolonged exposure, may seriously impair the ability of the lungs to handle oxygen—a condition known as fibrosis.

On July 18, 1977, I wrote urging you to expedite the conduct of tests aimed at determining the health risks associated with paraquat-treated marijuana. By December, your office reported that samples seized at the border showed "about 50 parts per million (ppm)" of paraquat. The White House release further stated "The absolute maximum amount of paraquat likely to be found on plant material is about 500 parts per million." But Dr. Richard Hawks—the official-in-charge of the paraquat study being conducted by the National Institute for Drug Abuse—has recently reported that current samples are showing up to 655 ppm; and that with each batch of new samples, the amount of paraquat-contamination appears to be increasing. Informally, reports have reached me indicating that government-seized Mexican marijuana coming into this country has been found to contain as high as 2,200 ppm of paraquat contamination.

Surely the hazards of such levels of paraquat in marijuana, and the associated risks involved for a large segment of the American public, merit immediate and high-level response. Yet it has now been more than ten months since I first brought this problem to the attention of Secretary of State Cyrus Vance and almost eight months since my July letter to you urging that the government's inquiry into the paraquat problem be expedited because of the potential for serious harm to American citizens. With each passing day, the matter takes on more distressing proportions.

According to Dr. Hawks, we still do not know of the precise risk such marijuana contamination poses, but the potential risk is serious. My office was informed late last week that toxicity reports on paraquat-treated marijuana, when inhaled through smoking, are not conclusive and a more refined test was required. I have been informed as of today that subsequent testing indicated that paraquat traces are indeed transmitted in the smoke. At the same time, it appears that studies conducted on paraquat-treated marijuana which might be consumed report only what doses would be lethal. Clearly, sub-lethal doses might well cause permanent damage—e.g., to the brain or lungs—to some proportion of the 13 million Americans who, by government estimates, are regular marijuana users. Yet, according to Dr. Hawks, none of the tests currently being conducted or which could be conducted will be able to tell us anything about the sub-lethal risks involved when persons consume marijuana contaminated with the highly toxic paraquat. Whatever information we still do not have, as a result of recent findings, we now know that no research will be able to tell us that paraquat is not a hazard to human health.

Whatever the reasons, we now know that more paraquat-tainted marijuana containing increasingly higher levels of paraquat residues are entering the United States and being sold to unsuspecting users and that there exists a clear risk to human health, of our own making. And yet, no action is being taken to induce the Mexican government to halt the use of paraquat in its spraying program, or to substitute a safer herbicide.

In light of recent developments, I believe that the United States Government should undertake immediately to safeguard the health and welfare of a significant number of our citizens who may be endangered as a result of this government's involvement, however direct or indirect, in Mexico's program to spray marijuana fields with paraquat. Without question there is a duty owed to those citizens when our government is acutely aware of hundreds of tons of marijuana crossing the border from Mexico and has lent behind-the-scenes assistance to the spraying effort which causes the marijuana to be a risk to human health.

Parenthetically, I believe that the Government of Mexico may well want to reconsider its paraquat program in view of the possible risks of lung damage to peasant farmers, and to officials in the spraying program itself who are handling this substance.

I would like to meet with you as soon as possible to ascertain why, in the face of an unknown but possibly serious health risk, this government has not, to date, acted with reasonable dispatch to eliminate the risk, and what actions you propose to take at this critical time.

Sincerely,

CHARLES H. PERCY,
Ranking Minority Member.

THE WHITE HOUSE,
Washington, December 9, 1977.

In response to recent concern that Mexican marihuana plants which have been sprayed with Paraquat might be harvested and imported into the U.S., the Office of Drug Abuse Policy has issued the following statement.

While we do not at present time see any major health hazard associated with Paraquat-treated marihuana, we have directed the National Institute on Drug Abuse to conduct research to determine if marihuana contaminated with Paraquat is being imported and, if so, whether its use could cause injury to marihuana users.

Samples of marihuana confiscated in the Southwest Region of the United States by the Drug Enforcement Administration were analyzed by the National Institute on Drug Abuse. Out of 45 samples, six were found to be contaminated with Paraquat. These samples, presumed to be from Mexico because of both the chemical analysis and their nearness to the border, averaged 900 pounds in weight.

Lee Dogoloff, Deputy Director, said "We wish to make this issue public. Marihuana which has been sprayed with Paraquat appears damp, yellowish and sickly looking, and may have spots similar to burn holes. Once manicured and mixed with untreated material, it becomes difficult to recognize and has no characteristic smell."

Since late 1975, the Mexican Government has been using Paraquat to destroy illegal marihuana fields. While the U.S. has provided both equipment and technical assistance to the Mexican Government for the eradication of illegal poppy fields, it is not participating in the marihuana eradication program. The Paraquat for this program was purchased by the Mexican Government in Europe.

Studies by the National Institute on Drug Abuse on the smoke from marihuana sprayed with Paraquat are still being conducted with preliminary results due in January 1978.

BACKGROUND

Paraquat is a commonly used herbicide which has been employed by the U.S. and Mexico since the early 1960's and has been approved by the EPA for several purposes. The most common application of Paraquat is as a means of cleaning the seedbed before planting crops, but it is also employed for such things as weed control in fruit orchards and as an aid to harvesting mature plants such as cotton and soybeans. Paraquat does not persist in the soil and presents no hazard when used in prescribed amounts. It is one of 23 herbicides which the EPA is proposing to restrict to trained farmers and users only.

Paraquat is highly toxic, can be fatal if swallowed in concentrated form, and has no known antidote.

There has been concern recently that some of the Mexican marihuana plants which have been sprayed with Paraquat might be harvested and imported into the U.S. before the herbicide has destroyed the plants. This concern has led the Office of Drug Abuse Policy to conduct research to determine if marihuana contaminated with Paraquat is being brought into the U.S., and, if so, whether it could cause harm to marihuana users.

Samples of marihuana confiscated in the Southwest Region of the United States by the Drug Enforcement Administration (DEA)

were analyzed by the National Institute on Drug Abuse (NIDA). Out of 45 samples, six were found to be contaminated with Paraquat. These samples, presumed to be from Mexico because of both the chemical analysis and their nearness to the border, averaged 900 pounds in weight.

Studies by the National Institute on Drug Abuse on the effects of ingested Paraquat have shown the following:

The absolute maximum amount of Paraquat likely to be found on plant material is about 500 parts per million (ppm). The amounts actually found on the confiscated marihuana were about 50 ppm.

At a rate of 500 ppm, a person would have to consume one pound of marihuana within a few hours for it to be fatal; at a level of 50 ppm, ten pounds would have to be ingested over a short period of time for fatal results.

Studies by NIDA on the smoke from marihuana sprayed with Paraquat are now being conducted. Included in the studies will be the analysis of smoke for the presence of toxic substances which might result from burning or smoking the Paraquat-laced marihuana. While previous studies on Paraquat sprayed on plants such as alfalfa found that the herbicide is not present in the smoke, it is not known whether this is true of marihuana. Smoking studies in rats will begin shortly to determine what, if any, toxic reactions occur with Paraquat-treated marihuana.

QUESTIONS AND ANSWERS ON MARIHUANA AND PARAQUAT

Q. If marihuana treated with Paraquat is eaten, in brownies for example, will it be fatal and how much will it take?

A. Since the amount of marihuana which has to be eaten for a lethal dose is between 1 and 10 pounds, it is unlikely that anyone could possibly ingest a lethal dose in food. If, for instance, one ounce of marihuana were used to prepare 2 pounds of brownies, 32 to 320 pounds would have to be eaten within a short period of time to cause death.

Q. What are the effects of smoking Paraquat-treated marihuana?

A. At the present time little is known about smoke toxicity. Studies conducted by ICI (the manufacturers of Paraquat) have shown that no Paraquat is detectable in the smoke collected from burning Paraquat-treated field crops.

The National Institute on Drug Abuse (NIDA) is at present conducting studies of smoke collected from burning marihuana treated with Paraquat. The question remains to be answered whether the Paraquat is being converted by the heat of burning into other toxic substances. NIDA hopes to have preliminary study results in January.

Q. How can street marihuana that has come from Paraquat-treated fields be recognized?

A. When Paraquat is applied to plants they quickly turn yellow and dry out. Sometimes spots similar to burn holes are noticeable on the leaf. This process only takes 1–3 days so the marihuana must be harvested soon after spraying and before the plants become so dry as to be unmanageable. Material coming into the country in large lots therefore appears damp, yellowish, and sickly looking.

Recognizing Paraquat-treated marihuana in street samples is more difficult since by this time the material may have been manicured considerably and possibly mixed with untreated material. No characteristic smell is associated with Paraquat so this is not a means of detection.

Q. What symptoms might be noticed after smoking or eating marihuana containing Paraquat?

A. No information is at present available concerning human symptoms to be expected after smoking Paraquat. Symptoms to be expected after oral ingestion would probably only be manifested if the pure herbicide were swallowed.

Q. Why was Paraquat originally chosen as the herbicide of choice to be used to eradicate marihuana fields?

A. Studies conducted in the early 1970's demonstrated that Paraquat was highly effective in quickly killing marihuana plants and presented a minimum of environmental consequences.

THE WHITE HOUSE,
Washington, August 2, 1977.

Senator CHARLES H. PERCY,
U.S. Senate,
Washington, D.C.

DEAR SENATOR PERCY: Thank you for your letter of July 18 concerning research on Paraquat toxicity. Please be assured that we share your concern and consider this an important research issue. I would like to detail for you the steps which have been taken and are planned to develop this project.

It was decided at our May 27 meeting to attempt to resolve certain questions concerning Paraquat's potential danger to marijuana smokers. To this end, I requested that the National Institute on Drug Abuse (NIDA) prepare a research plan which could be implemented to settle some of these concerns. The plan was presented on June 3, and I subsequently, discussed the project with Mr. Dodson of your office on June 6. I decided, in view of the potential danger to U.S. citizens, that the project should be implemented and this decision was communicated to NIDA on June 7.

The research timetable called for an 18-week project to arrive at preliminary conclusions concerning the pyrolysis products of Paraquat on marijuana leaf—those chemical entities which appear in the condensed smoke after a marijuana cigarette is smoked. If safety cannot then be adequately addressed, toxicity studies in rats will be conducted on Paraquat-treated marijuana to assess the potential toxic effects. If necessary, these studies would take an additional 12–14 weeks.

The timetable presented by NIDA is the period of time necessary to complete the project after all the individual stages have been arranged. Any delay is an unavoidable aspect of the need to supplement ongoing contract funding to cover this work, coordinate with the U.S. Department of Agriculture (USDA) for plant-growing and treatment aspects of the project, and to work out the exact details of the experimental procedures necessary to carry out the work. If these details and plans are not carefully formulated at this initial stage, more questions than answers will result from such a project.

You might be interested to learn that scientific representatives of USDA, NIDA, and the Environmental Protection Agency have agreed to the type of marijuana to be used on the experiment and the methods of application and quantity of Paraquat to be applied. Initial experimental details have been worked out and sources established for actual homegrown Mexican marijuana which is necessary for the project. It has also been agreed that Chevron Corporation will supply the Research Triangle Institute with radio-labeled Paraquat for the project.

The appropriate contractual proposals have been solicited and the seeds (Mexican varieties), which were obtained from the University of Mississippi after agreement was reached on varieties of plants necessary and numbers of plants required, planted.

Two modifications have been made to the project as originally conceived at our May 27 meeting. The first is that the confiscated material will be analyzed at the University of Mississippi for the presence of Paraquat. Depending on the amount of Paraguat that is detected on this random screening of marijuana samples from all over the United States, the potential of exposure to Paraquat by a U.S. smoker can be assessed in preliminary fashion. Secondly, the pyrolytic experiments to be carried out will be done initially on manicured (harvested) plant material after application of Paraquat to it. This is not growing plant material, but presumably the data collected on its pyrolysis will carry over to the live plant situation. Since this material is available now, initial data can be generated prior to the availability of the mature grown plants.

To summarize where we stand at this moment:

1. Plants are growing which should be ready for harvest by the end of August.

2. Chemical analysis of the confiscated samples at the University of Mississippi will commence as soon as chemical supplies arrive (2 weeks from now), and some data should be available on these analyses by the end of August with a total of 200–300 analyses completed by the end of September.

3. The contractual arrangements with the Research Triangle Institute of North Carolina are in negotiation, and their full efforts should begin in about 2 weeks.

Thank you for your interest in this important project. If I can be of further assistance, do not hesitate to call me.

Sincerely,

PETER G. BOURNE, M.D.,
Special Assistant to the President.

COMMITTEE ON GOVERNMENTAL AFFAIRS, SENATE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
Washington, D.C., July 18, 1977.

PETER G. BOURNE, M.D.,
Director, Office of Drug Abuse Policy, The White House, Washington, D.C.

DEAR DR. BOURNE: Over ten weeks ago, members of the staff of the Senate Permanent Subcommittee on Investigations, of which I am ranking minority member, called to my attention the possible hazards associated with the use of the herbicide "paraquat" on Mexican marijuana fields. The potential seriousness of this problem was immediately apparent. As you know, thousands of pounds of marijuana cross the Mexican border every month, and there is good reason to believe that a large portion of this marijuana, destined for consumption by U.S. citizens, may be tainted with this highly poisonous chemical. Although I do not condone the use of illegal drugs under any circumstances, I feel that the United States government has a responsibility to ensure that its actions do not forseeably endanger the health and safety of any of its citizens, drug users included.

I understand that, under your direction, a meeting was held at the White House on May 27, to discuss possible means of resolving the uncertainties of paraquat use on drug crops. The outcome of this meeting was a decision to begin certain tests on paraquat and paraquat-treated marijuana, to be conducted under the auspices of the National Institute on Drug Abuse. On June 10, my office received assurances from the Deputy Director of ODAP that these tests would begin "immediately."

On July 8, Subcommittee staff contacted your office to check on the progress of these experiments. Staff was informed that the actual experiments had not yet been started and would not commence for another two weeks, even though six weeks had already passed since the decision to implement this effort.

It is most difficult for me to understand an eight-week delay in such a simple task as the planting of marijuana for test purposes, especially in view of the six to eight-week lead time required to grow the plants to maturity, which is a necessary first-step in this test effort.

I know you share my concern for the health and safety of all Americans. No one should be inadvertently poisoned through the actions or inaction of the United States government. In view of the delays in this project to date, I urge you to do whatever is necessary to expedite the conduct of these important experiments.

Sincerely,

CHARLES H. PERCY,
Ranking Minority Member.

DEPARTMENT OF STATE,
Washington, D.C., May 13, 1977.

Hon. CHARLES H. PERCY,
U.S. Senate,
Washington, D.C.

DEAR SENATOR PERCY: Thank you for your letter of May 6 to Secretary Vance in which you asked for specific information and documentation about the Mexican Government's eradication program in which opium poppy and marihuana fields are sprayed with herbicides.

I have been informed that the Office of the Senior Adviser for Narcotics Matters has been in touch informally with members of your staff concerning these questions. While an initial response has been prepared by that office, a few of your questions will require more time to provide a sufficient reply.

The Department of State shares your concern that the means employed to control illicit drug abuse and international narcotics traffic do not result in individual suffering, or ecological damage. President Carter stated in his message to the U.N. Commission on Narcotic Drugs in February . . . We must combine deep compassion for the victims of addiction with a vigorous attempt to eliminate the world supply of illicit drugs through international cooperation . . .

The Mexican narcotics control effort is directed and controlled by the Mexican Government. The United States Government provides the Mexican Government assistance which includes equipment and technical advisory services, since success in the Mexican program will help reduce the supply of illicit narcotics for the United States market.

You requested a description of the U.S. Government's oversight of the Mexican spraying operations. In addition to oversight provided by the U.S. Embassy in Mexico and the Department's Office of International Narcotics under the Senior Adviser for Narcotics Matters, inspection of the program in Mexico is conducted by the General Accounting Office, the Inspector General of Foreign Assistance, the Drug Enforcement Administration, periodic audit by the Agency for International Development and various concerned Congressional committees.

The oversight definition varies from group to group. The Department of State is concerned with the effectiveness of the program as it relates to the use of the U.S. assistance provided to the Mexican Government, i.e., whether the program is helping to reduce the flow of illicit drugs into the United States. The spraying operation is the core of the eradication effort. All supplementary efforts are directed at insuring effective spraying of the poppy fields, which the Mexican Government has given priority over marihuana fields. Spraying of marihuana takes place primarily during the summer period between the normal harvests of poppies.

The role of the American advisers in the actual spraying operation consists of helping identify the location of poppy fields by the Drug Enforcement Administration's TDY personnel flying reconnaissance flights with Mexican pilots and spotters; U.S. contract flight instructors; maintenance and repair instructors; aviation systems advisers; and support advisory services in operation of multi-spectral poppy field identification systems. Concerning your question of surveillance of the operations, American advisers infrequently accompany Mexican spray flights and often accompany Mexican personnel on subsequent verification missions.

Independent audits of the program are conducted frequently and often overlap. At the present time, representatives of the Congressional Budget Office and the Inspector General's Office for Foreign Assistance are reviewing the program in Mexico. The Department's Inspector General's review of the program begins in a few weeks and the A.I.D. audit should begin in June. The extent to which each of the groups may focus on the detailed technical aspects of the type of herbicide used will vary.

Dr. Walter A. Gentner of the U.S. Department of Agriculture visited Mexico in 1976 when the transition phase between the outgoing and incoming administration took place. His recommendations have been passed to the new administration. To date, the new Attorney General has not desired U.S. technical assistance in developing the use of herbicides which he has stated must be effective in eradication, ecologically safe, and safe for the personnel who participate in the spraying.

Herbicides are selected for the program after these criteria have been examined by specialists from various ministries within the Mexican Government. The herbicides presently employed in the program have been approved by the Mexican Department of Agriculture and are used commercially in agriculture in various parts of Mexico. The United States does not have direct influence over the choice of herbicides.

We have provided technical advisers to consult with the Mexican Government on herbicides and current planning exercises with the Mexicans may result in additional consultation. The Mexican Government purchases and procures the herbicides used in the program. No reimbursement arrangements exist to cover this cost. The United States cannot and does not set standards and specifications for the purchase and handling of herbicides by the Mexican Government. In response to a Mexican request for guidelines to assure safe handling of herbicides, general instructions were prepared on one occasion by the Narcotics Assistance Unit at the U.S. Embassy in Mexico City.

The U.S. Embassy reports that the chemical, paraquat, has been used in 1976 and 1977 only against marihuana, while 2,4-D is used only against opium poppies. We have been advised that in the future, only 2,4-D will be used against both poppies and marihuana because tests showed it was more effective and safer to handle. We will look into this issue further and will advise you.

We only know of the use of 2,4-D and paraquat in the program. It is possible that other herbicides or chemical variations have been used for limited testings.

We are making inquiries regarding the Environmental Protection Agency's position on paraquat. The U.S. Department of Agriculture has advised us informally that handling paraquat in its concentrated form can be harmful. This advice was passed on to the Mexican Government.

The possible toxic consequences of paraquat being accidentally sprayed on Mexican food crops, appears to be a remote possibility. The marihuana fields are located generally far from food crop fields. Reports from the Embassy indicate that marihuana sprayed with herbicides disintegrates quickly into a fine powder rendering it useless for smoking.

The State Department believes that herbicides used in any eradication effort should be safe for man and environment as well as effective in destroying the illegally grown plants. Some evidence is available that paraquat can be harmful to those who prepare and apply paraquat; therefore, we have supported informally the reported decision of the Mexican Government to use in the future only 2,4-D. We shall make inquiries on the progress of this decision and advise you.

Concerning your request for all State Department correspondence, cable traffic, agency memoranda, and other documents, from January 1975 to the present, covering the use of herbicides on drug crops in Mexico, we will begin the search immediately and provide the documentation within a matter of days.

Sincerely,

DOUGLAS J. BENNET, JR.,
Assistant Secretary for
Congressional Relations.

COMMITTEE ON GOVERNMENTAL AFFAIRS SENATE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,
Washington, D.C., May 6, 1977.

Hon. CYRUS R. VANCE,
Secretary of State, Department of State,
Washington, D.C.

DEAR SECRETARY VANCE: For the past few years, the Permanent Subcommittee on Investigations has actively monitored the efficiency and effectiveness of federal drug law enforcement. As ranking minority member of this Subcommittee, I have taken a special interest in this subject.

In conjunction with the Subcommittee's continuing oversight of federal efforts to halt the flow of illegal drugs across the Mexican border, the Subcommittee is interested in the joint United States-Mexican program to cut off drug supplies at the source by spraying Mexican marijuana and poppy fields with chemical herbicides. In this regard, I would appreciate your providing me with the following information and any documentation pertaining thereto:

1. Please describe the United States government's oversight of the Mexican spraying operations. What role do American advisers play in the actual spraying operations and in the surveillance of those operations? How often are independent audits of this program conducted and when is the next such investigative trip scheduled? Specifically, does the State Department plan a review of the program by a multidisciplined team of experts, as recommended by Dr. Walter Gentner of the U.S. Department of Agriculture in the report on his Fall, 1976, study of the program?

2. How are the herbicides used for the program selected? What influence does the United States have over the choice of herbicides? Does the United States set standards and specifications for the purchase and handling of herbicides by the Mexican government?

3. Is the chemical herbicide paraquat (also known as gramoxone) still used in Mexico on opium poppy plants If not, when and for what reason was its use halted?

4. Is paraquat still used for spraying purposes on marijuana plants? If not, when and for what reasons was its use halted?

5. Have any types of herbicides other than paraquat and 2,4–D been used in this program? Specifically, has 2,4,5–T been used on Mexican drug crops? If other herbicides have been used, why was their use halted?

6. Does the EPA currently consider paraquat safe for use in this program? Has the EPA shifted paraquat to its "rebuttable" list, indicating that there may be some reason to believe that it should not be registered for use in the United States? Has the U.S. Department of Agriculture strongly urged the United States and Mexican governments to discontinue use of paraquat on drug crops? If so, what action has been taken or is contemplated?

7. Has the U.S. government considered the toxic consequences of paraquat sprayed (1) on non-target Mexican food crops intended for local consumption or for export to the U.S. or elsewhere? and (2) on marijuana plants which are harvested after spraying.

illegally exported into the United States, and subsequently smoked or consumed by American users of the drug?

8. What is the present position of the State Department on the use of paraquat in this program by Mexican authorities? Has the State Department made any effort to stop or urge discontinuance of the use of this chemical by the Mexican government? If so, please describe these efforts and the Mexican government's response to them.

Please transmit all State Department correspondence, cable traffic, agency memoranda, and other documents, from January 1975 to the present, concerning the use of herbicides on drug crops in Mexico. This should include but not be limited to all correspondence with the Department of Agriculture and the Mexican government.

Your prompt assistance and reply by Friday, May 13, 1977, will be greatly appreciated. Mr. Stuart M. Statler, Chief Counsel to the Minority, is available to provide all necessary assistance to your staff and can be reached at 224-9157.

Warmest personal regards,

CHARLES H. PERCY,
Ranking Minority Member.

[From Science magazine, Feb. 24, 1978]

SPRAYING OF HERBICIDES ON MEXICAN MARIJUANA BACKFIRES ON U.S.

In the mountainous, inaccessible regions of Mexico, over an area that comprises more than one-fourth of the national territory, Mexican farmers carefully cultivate fields of opium poppies and marijuana. Each year, more than 2500 tons of that marijuana and 5000 pounds of heroin, an opium derivative, find their way across the border into the hands of pot smokers and heroin addicts in the United States. Customs officials here will admit frankly that they are powerless to prevent it, and authorities in Mexico have fought a notoriously losing battle with farmers who are skillful at locating fertile ground hundreds of miles from highways—and do not hesitate to shoot at soldiers and narcotics agents. In a country where the average yearly income in rural areas is in the range of $200, the modest farmer of opium and marijuana can have an income of $5000.

In the spring of 1975, the Mexican government and their advisers in the U.S. drug enforcement establishment came up with a bright idea: Herbicides, which were successfully used to defoliate large portions of the Southeast Asian jungle during the Vietnam war, could be sprayed on the opium and marijuana fields by Mexican pilots in sophisticated American helicopters. Infrared aerial photography, another high-technology development of the Vietnam war, could be used by fixed-wing aircraft to track down and pinpoint the location of the fields. By this method thousands more acres and thousands more fields could be wiped out than through the older, slower, ground method of search-and-destroy by burning.

After a brief period of trials and demonstrations before a variety of Mexican and American officials, the program began with the use of a variety of agricultural herbicides, including 2,4,5-T, 2,4-D, and paraquat (Gramoxone by its trade name). Later, paraquat was accepted as the most effective herbicide to use on marijuana, and 2,4-D was judged the most effective for use on opium poppies. Last year, according to government officials, poppy fields covering 14,000 acres and marijuana fields covering 9500 acres were destroyed by airborne spraying. This prompted one U.S. official to pronounce it "the most effective and cost efficient means of decreasing the flow of drugs such as heroin into the United States."

What has followed this comparative success, however, has been a growing criticism of the program by American environmentalists, an exacerbation of existing tensions between the United States and Mexico, and in the words of an American senator, outrage over the fact that no steps were taken to ensure the health of millions of Americans who might be using marijuana harvested immediately after it had been dosed with herbicide.

Concerns about the safety of the paraquat-sprayed marijuana—first expressed in the underground press—have led to a federally funded study of the safety. A warning about paraquat-contaminated pot has been issued by the Office of Drug Abuse Policy in the White House. Dogging the whole affair has been a series of contradictory statements by the State Department, which has tried at nearly every opportunity to minimize the ecological and health risks associated with the program, as well as the American involvement in it.

"What we're dealing with here is a very sensitive issue within the framework of relations between the United States and Mexico," a State Department official told *Science*. "Right now, they are spending an inordinate amount of their resources on a project [the spraying] that essentially benefits the United States. We don't want to disturb that. Moreover, anything that makes it appear that the United States is in any way controlling or directing the program is damaging to the stability of the Mexican political environment. The closer their government is to the United States, the worse it looks in the eyes of the Mexican people and press."

When the office of Senator Charles Percy (R-Ill.) began inquiring about the herbicide-spraying program in May 1977, after a member of his staff saw references to it in the underground press, the State Department was mindful of the diplomatic problem. In its responses to Percy and to the later inquiries of the National Organization for the Reform of Marijuana Laws (NORML), department officials pointed out that "the Mexican narcotics control effort is directed and controlled by the Mexican government." The State Department also asserted that the herbicides used in Mexico—after having been selected by the Mexicans with complete independence—do not pose any environmental or human health risks: "Reports from the [American] embassy indicate that marihuana sprayed with herbicide disintegrates quickly into a fine powder rendering it useless for smoking." Even the White House drug abuse office, in a statement released on 9 December 1977, asserted that "while the U.S. has provided both equipment and technical assistance to the Mexican government for the eradication of illegal poppy fields, it is not participating in the marihuana eradication program."

However, these claims appear to be contradicted by the scope of U.S. assistance to the program and by the contents of several State Department documents relating to to herbicide spraying. Although the U.S. claims, for example, that the herbicide program is Mexican-directed and controlled, it seems clear it could not function as it does without American approval: Since 1973, this country has provided $40 million in direct funding for the program, most of which has been used to purchase 41 American-made Bell helicopters and 35 Cessna single- and twin-engined fixed-wing airplanes.

Mexican personnel are trained by flight instructors, maintenance and repair instructors, and aviation systems advisers under contract to the United States. Employees of the Drug Enforcement Administration accompany the Mexicans on flights to identify the fields and assure that they have been destroyed. Four government agencies oversee the operation: the State Department, through the U.S. Embassy in Mexico, and its Office of International Narcotics; the Drug Enforcement Administration; the General Accounting Office; and the Agency for International Development.

This participation and oversight, moreover, clearly has extended to the marijuana eradication program: A report filed by John Ford, an employee of the State Department who was sent to help set up the spraying program, contains several references dated October 1975 to observations he made and advice he provided on the spraying of paraquat on marijuana fields.

The importance of the contradictions in the activities and public statements of the government lies in the influence that the State Department's denial of a U.S. role had in delaying an investigation of the environmental and human health effects of the herbicide-spraying program. Concern over those effects first arose simply because of paraquat's inherent toxicity to humans and plants. As the label on it states, "one swallow can kill," and there is no known antidote. Ingestion or inhalation of one-tenth of an ounce is sufficient to damage major internal organs and result in a painful death after 24 hours. In fact, more than 100 persons in the United States have died from ingesting paraquat by accident or to commit suicide. Most of the deaths have occurred in Texas and California, where paraquat has been used to kill weeds and clear land, according to a scientist at the National Institute of Drug Abuse.

Despite its toxicity to humans, paraquat does not persist in the environment—it breaks down when it contacts soil—which made it initially attractive to the Mexicans. To the American critics of its use on marijuana, however, that major attribute is more than offset by the way it acts to destroy plants. When sprayed in the air, paraquat sticks to the leaves of plants, desiccating them through a chemical reaction with the leaves' surfaces, with sunlight as the catalyst. Thus, for the plant to be completely destroyed, it must sit for a day and probably two in bright sunlight. The potential hazard to users of marijuana is created whenever the crop is harvested by the farmer on the same day it is sprayed. Once harvested and pressed into bricks for shipment across the border, the leaves are out of the sun, the plant stops its deterioration, and the herbicide remains largely intact on the marijuana.

STATE DEPARTMENT DENIAL

Initial inquiries from Percy and NORML about the possibility of this occurring or having occurred were deflected by the State Department with a denial of any responsibility for the program. Eventually, in response to persistent inquiries by Percy, the White House drug abuse office convened a meeting in May 1977 of representatives of eight federal drug enforcement and health agencies to discuss the issue. Then a different obstacle arose. Several of the officials balked at the idea of investigating potential risks associated with use of a contraband substance. According to Percy, they said in effect: "So who cares, what responsibility does our government have for dope smokers who might be poisoned by paraquat?" Although Percy himself had carefully expressed his disapproval of "the use of illegal drugs under any circumstance," he firmly expressed his belief that "the United States government has a responsibility to ensure that its actions do not foreseeably endanger the health and safety of any of its citizens, drug users included."

This view was shared by presidential assistant Peter Bourne, the director of the Office of Drug Abuse Policy, who pointed out that any intake of paraquat-treated marijuana by U.S. citizens would be a direct result of the

U.S.-supplied spraying operation. Following the meeting, Bourne directed the National Institute on Drug Abuse (NIDA) to conduct a $35,000 study to determine if marijuana contaminated with paraquat actually was being imported, and if so, whether it could cause injury to those who used it.

To answer the first question, NIDA obtained 71 samples of marijuana confiscated during major drug busts in the southwestern region of the United States and had them analyzed by researchers at the University of Mississippi. Richard Hawks, a chemist at NIDA who is directing the research, makes no claims that the samples are representative of all the marijuana that comes across the border, but he said that researchers found paraquat on 10 percent of the samples, and "by itself, that was positive proof that paraquat-laden marijuana is being imported."

For the second portion of the study, marijuana plants were grown by the Department of Agriculture at a laboratory in Beltsville, Maryland, where they also were treated with paraquat. Scientists at the Research Triangle Institute in North Carolina then burned the marijuana and subjected the smoke condensate to chemical analysis. The researchers already knew that a hazardous amount of the herbicide was unlikely to be inhaled by the user as a part of the smoke, but it was unclear whether or not the heat of the burning converted paraquat into another toxic substance. Tests of the smoke condensate using mass spectrometry have yet to be carried out, but the preliminary results of tests using a slightly less accurate method indicate that the herbicide is broken down into bipyridine, which commonly exists in tobacco smoke and will not hurt the user, according to Hawks.

According to NORML, however, the government cannot be sure that paraquat-laden marijuana poses no health hazard unless a study is made of the effects of eating small amounts of it baked in cookies or brownies—a means of administration employed by a small but essentially unknown proportion of the estimated 15 million regular marijuana users in the United States. Using several rather arbitrary statistical measures of the concentration of the herbicide in imported marijuana and the distribution of marijuana in a batch of brownies, NIDA has calculated that a person would have to consume 32 pounds of brownies—containing 1 pound of the sprayed marijuana—over a short period of time to ingest a lethal dose of paraquat. But the agency does not know whether eating a portion of that amount would have less than fatal but still toxic results, according to Hawks. "We have no plans whatever to look at the effects of ingesting a sublethal dose," Hawks added.

One indication of the potential toxicity of ingesting it may be the fact that the concentrations of paraquat found on the imported samples analyzed by NIDA were between 3 and 650 parts per million. These concentrations uniformly exceed the tolerance levels set for the Environmental Protection Agency for paraquat on foodstuffs, which are in the range of 0.05 to 0.10 part per million. Moreover, "because of paraquat's inherent toxicity and studies that indicate it can cause birth defects," the EPA has placed it on a list of candidates for hearings that may lead to those tolerance levels being reduced, or to a removal of the herbicide from the U.S. market for use in connection with agricultural commodities, an EPA spokesman told *Science*.

Keith Stroup, the director of NORML, believes that NIDA should study not only the hazards of eating paraquat-laden marijuana, but that it should also look into the possibility that heroin may be coming across the border laden with toxic amounts of the herbicide 2,4-D. The chemical works by interfering with the normal growth cycle of a plant, causing it to wither in 36 to 48 hours. Although it is not considered to be as toxic as paraquat, it also has been placed on a list of candidates for hearings that may lead to use restrictions or to its removal from the market; studies have indicated that it may cause mutations and cancer. So far, NORML has been the only group to express any interest in the possibility that it has contaminated imported heroin; ensuring that addicts do not face such a hazard does not seem to be a popular cause. The State Department responds confidently that "because heroin is already injurious to health, we don't consider that [the possibility of herbicide-laden heroin reaching users in this country] to be a problem."

NORML believes that a first step toward changing State Department support of the herbicide-spraying program would be to force the department in federal court to file an environmental impact statement, placing the ramifications of the spraying program on the public record. Impact statements are required under the National Environmental Policy Act (NEPA) for "major federal actions significantly affecting the quality of the human environment" in the United States. The State Department contends that no statement is required for the herbicide program because it is outside the U.S., under the formal control of the Mexicans, and bereft of any direct U.S. subsidy for the herbicides themselves.

Many Washington environmentalists, on the other hand, believe that such a statement is required. Their view is based partly on a 1975 suit by the Environmental Defense Fund that forced the Agency for International Development to file the statements on its pesticide programs in foreign countries because of their potential impact here. Moreover, the herbicide-spraying program in Mexico appears to be a prime example of the type of issue that impact statements are designed to illuminate. The State Department from the start knew, for example, that marijuana treated with paraquat was likely to be harvested quickly by the Mexicans; reports filed by John Ford noted that some of the plots that had been selected for the initial trials were harvested in the same day they were sprayed. The State Department also knew that paraquat is an extremely hazardous herbicide with which to work. In early 1975, an official of the Agricultural Research Service in the Department of Agriculture wrote to the State Department to express his concern over the intention of the Mexicans to use the herbicide, because of the hazards present for those who administered it. If a statement had been filed at the inception of the program, the State Department would have been forced to consider these ramifications and explain them in a public document, critics have pointed out.

Despite the apparent strength that these arguments would have in court, there is some reluctance by the environmentalists to take the case there. Currently, they are engaged in a running battle with agencies of the federal government that oppose a proposal by the Council on Environmental Quality, a White House office, to extend the NEPA requirements for filing impact statements to U.S.-supported actions that will have an effect only *within* the environment of a foreign country. Bringing a federal agency to court over an existing NEPA requirement in a case that hinges primarily on concern for the welfare of U.S. pot smokers and heroin addicts, at the same time a battle is taking place over proposals to extend those requirements, apparently is not considered sound strategy. Some groups also feel that the two issues—concern for U.S. pot smokers and the need for broader use of impact statements—should be kept apart.

Whatever the reason, this lack of action leaves unsolved several confusing mysteries that surround the affair. One is whether or not the State Department actually has exerted any pressure on the Mexicans to substitute another herbicide for paraquat. Richard Dugstad, a policy officer in the State Department's Office of International Narcotics, was quoted recently in the Washington Post as saying, "We have done nothing to discourage the use of paraquat by the Mexican government." But this contradicts what the State Department, in a letter to Senator Percy dated 13 May 1977, said: "We have supported informally the reported decision of the Mexican government to use in the future only 2,4-D" on marijuana plants. Dugstad now states that he was quoted out of context by the Post. The letter to Percy also states that "we have been advised that in the future, only 2,4-D will be used against both poppies and marihuana because tests showed it was more effective and safer to handle." Dugstad recently told Science, however, that "the Mexicans are staying with the present system of using paraquat on marijuana and 2,4-D only on opium poppies," because of continuing experience that shows each herbicide to be most effective on the plants that are sprayed with it now. He added a rhetorical question that prompts greater uncertainty: "Is it really appropriate for the U.S. to direct another government to use one chemical instead of another?"

Another unanswered question is whether the Mexicans are using herbicides besides paraquat and 2,4-D on opium poppies and marijuana. A report filed in 1976 by Walter Gentner, an employee of the U.S. Agriculture Department who went to Mexico to observe the operation, states that he saw the herbicide 2,4,5-T, a toxic chemical that may cause cancer, in a shed where other herbicides were stored. He suggested then that a special investigation be initiated, but up to now none has been conducted. Dugstad said that "to the best of our knowledge, no herbicides besides paraquat and 2,4-D are being used by the Mexicans."

In a sense, the uncertainty of this statement is understandable. The State Department has been caught between the proverbial rock and a hard place in this affair, which is fraught with international political complications and the potential for exposure of an error in U.S. policy. To admit at the start that paraquat-laden marijuana posed a health hazard for users in the United States would have been to admit that the Mexicans had not made the wisest choice of chemicals and, moreover, that despite the best application of American ingenuity and good intentions, heroin and marijuana are continuing to flow across the border in quantities that pose a hazard to U.S. citizens. What seems clear now, however, is that unless the State Department immediately places all of its cards on the table for everyone to see, its own credibility and wisdom, and possibly its good intentions, will remain in question.

[From the New Republic, Mar. 18, 1978]

POISONED MARIJUANA

Every year more than 2,500 tons of Mexican marijuana finds its way into the United States, accounting for perhaps 70 percent of the total consumed here. In analyzing samples of marijuana seized in major drug busts in the southwest since October 1976, the National Institute for Drug Abuse has discovered that more than 20 percent is contaminated by a chemical called paraquat, which is a toxic defoliant.

Where the chemical is coming from is no secret. It is traceable directly to a program jointly conceived by the Mexican government and U.S. drug enforcement advisers under which opium and marijuana fields in Mexico are sprayed from helicopters with paraquat and other agricultural herbicides similar, and in some instances identical, to those used to defoliate the jungle during the Vietnam war. As in Southeast Asia, hidden

marijuana and opium fields are located by infrared aerial photography.

The program was originally designed to destroy Mexican opium, which is the source of about 5,000 pounds of heroin each year. According to the State Department, spraying marijuana as well was entirely the idea of the Mexicans. To be sure, the chemical paraquat is highly effective in eradicating marijuana—if the plants are allowed to sit in the sunlight and open air for a day or two after spraying while the herbicide does its work. But the Mexican peasants who cultivate the stuff in inaccessible mountain fields are inspired by a stiff entrepreneurial spirit. After the helicopters depart, they simply hustle out and harvest the freshly sprayed plants, immediately squeezing the leaves into bricks before decomposition can begin. Thus more and more frequently the marijuana that is sold in this country has the poisonous chemical in it.

It's not clear just how harmful marijuana laced with paraquat is. According to the February 24 issue of Science magazine, which has carried the most thorough examination of the problem to date, the paraquat label states that one swallow can kill and there is no known antidote. According to Science, "ingestion or inhalation of one-tenth of an ounce is sufficient to damage major internal organs and result in a painful death after 24 hours."

However, NIDA testing of paraquat-laden marijuana—ordered by President Carter's Special Assistant for Health Issues, Peter Bourne—indicated that at the levels of concentration initially found on the imported samples, no hazardous amount was likely to be inhaled as part of the smoke from a marijuana cigarette nor a lethal amount ingested by eating marijuana cookies or brownies. But levels of paraquat concentration have increased dramatically in dope from recent seizures—up from six to 50 parts per million to highs of 2,000 per million. Furthermore, no one really knows whether there is any harmful effect from ingesting amounts too small to make you ill on the spot. The Environmental Protection Agency has warned that the chemical can cause birth defects, and all the concentration of paraquat turned up in the Mexican marijuana greatly exceed the tolerance levels set by that agency.

Dr. Lester Grinspoon of Harvard Medical School, the author of Marijuana Reconsidered, points out, "There's no way for a consumer to know that his grass is poisoned or by how much. Nor is there any way to complain about it, because the government is putting the poison in. Whatever needs to be done to reverse this should be done immediately. The Drug Enforcement Agency should move to stop the spraying program."

Peter Bourne of the White House takes a more casual view. "I'm not sure there's any demonstrable health hazard of any consequence," he says. "People who disagree with that do so on a largely emotional basis without any scientific substantiation. I mean, we have nobody coming into hospital emergency rooms with toxic effects."

People also disagree about how much the U.S. government is responsible for the marijuana spraying. The official State Department position is that the entire operation is Mexican and it is important for their local politics that it be perceived to be so. We provide funds only for opium eradication. The Mexicans extended it to marijuana on their own, almost as a favor to us, it would seem. "Right now they are spending an inordinate amount of their resources on a project that esentially benefits the U.S.," a State Department official told Science. "We don't want to disturb that." State also insists that we have no direct influence over the choice of herbicides used in the program.

On the other hand, over the past five years, the U.S. government has provided $40 million in direct funding for the program, most of which has gone for the purchase of helicopters and other aircraft for spraying and reconnaissance. We've also trained aviators and mechanics, actually operating the infared photographic equipment and advised in the use of chemicals. Drug Enforcement Administration officials often accompany Mexicans on the flights. The State Department has asserted that we allow the Mexicans to use the helicopters to spray marijuana only because we would have to maintain them in the poppy offseason anyway.

Opinions differ about what obligations the U.S. government now has in all this. The National Organization for Reform of Marijuana Laws (NORML) believes that all U.S. involvement should be stopped until it is conclusively proved that the chemicals used in both the poppy and marijuana programs are not putting poisons into grass or heroin consumed in this country. Illinois Senator Charles Percy, who has kept a constant pressure on government drug enforcement authorities for nearly a year takes a similar, if softer, position. Percy says, "The United States government has a responsibility to ensure that its actions do not foreseeably endanger the health and safety of any of its citizens, drug users included."

At the other end of the spectrum, some US drug enforcement officials believe that the government has no obligations whatever: marijuana is illegal and the government has no responsibility to assure that illegal activities are safe. But if there is some danger, it is the direct result of US-supported spraying operations. That much even Peter Bourne is prepared to concede. Does that imply any further obligation? "I don't think so," Bourne says. "If the risk exists the guy still has the option not to smoke the grass to begin with."

As far as the Carter White House is concerned, the little matter of poisonous paraquat on Mexican marijuana is "not a policy question." The US government does not intend to suspend the spraying program, or even to recommend to the Mexicans that safer chemicals be used. It has done little to publicize the potential danger since it was discovered. Bourne says, "It's a health issue comparable to cigarettes, and we have instructed HEW accordingly."

Mr. PROXMIRE. Mr. President, I ask unanimous consent that the Senate return to executive session, and I suggest the absence of a quorum.

The PRESIDING OFICER. The Senate is automatically back in executive session. The clerk will call the roll.

The legislative clerk called the roll.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the quorum call be rescinded.

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

ROUTINE MORNING BUSINESS

(Routine morning business transacted and additional statements submitted are as follows:)

COMMUNICATIONS

The PRESIDING OFFICER laid before the Senate the following communications, together with accompanying reports, documents, and papers, which were referred as indicated:

EC–3096. A communication from the Secretary of Transportation, transmitting the third annual report of activities related to the Deepwater Port Act of 1974, covering the fiscal year October 1, 1976 through September 30, 1977; to the Committee on Commerce, Science, and Transportation, the Committee on Environment and Public Works, and the Committee on Energy and Natural Resources, jointly, by unanimous consent.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that a communication transmitted by the Secretary of Transportation, relative to the third annual report under the Deepwater Port Act of 1974, be referred jointly to the Committee on Commerce, Science, and Transportation, the Committee on Environment and Public Works, and the Committee on Energy and Natural Resources.

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

EC–3097. A communication from the Under Secretary of Defense, transmitting, pursuant to law, a report of Independent Research and Development and Bid and Proposal costs; to the Committee on Armed Services.

EC–3098. A communication from the Under Secretary of Defense, transmitting, pursuant to law, Contractor IR&D and B&P Advance Agreements Negotiations completed during Government FY 1977 and Independent Research and Development and Bid and Proposal Costs incurred by Major Defense Contractors in the Years 1976 and 1977; to the Committee on Armed Services.

EC–3099. A communication from the Director, Defense Security Assistance Agency, reporting, pursuant to law, concerning the Department of the Army's proposed Letter of Offer to Korea for Defense Articles estimated to cost in excess of $25 million; to the Committee on Armed Services.

EC–3100. A confidential communication from the Director, Defense Security Assistance Agency, reporting, pursuant to law, concerning the Department of the Army's proposed Letter of Offer to NATO for Defense Articles estimated to cost in excess of $25 million; to the Committee on Armed Services.

EC–3101. A communication from the Deputy Assistant Secretary of Defense (Installations and Housing), reporting, pursuant to law, on 33 construction projects to be undertaken by the Army National Guard and the U.S. Army Reserve; to the Committee on Armed Services.

EC–3102. A communication from the Chairman, Board of Governors of the Federal Reserve System, transmitting, pursuant to law, the third Annual Report of the Board of Governors of the Federal Reserve System on its functions with respect to Section 18(f) of the Federal Trade Commission Act; to the Committee on Banking, Housing, and Urban Affairs.

EC–3103. A communication from the Secretary of Commerce, transmitting a draft of proposed legislation to amend the Act of July 19, 1940 to authorize additional appropriations, and for other purposes; to the Committee on Commerce, Science, and Transportation.

EC–3104. A communication from the Secretary of Transportation, transmitting, pursuant to law, a report on the utilization of the authority granted in 14 USC 475(a), (b), (c) and (d), to designate and rent inadequate quarters, lease housing, and hire quarters; to the Committee on Commerce, Science, and Transportation.

EC–3105. A communication from the Acting Secretary of Commerce, transmitting a draft of proposed legislation to amend section 406 of the Fishery Conservation and Management Act of 1976 to extend the authorization for appropriations for fiscal years

1979 and 1980; to the Committee on Commerce, Science, and Transportation.

EC–3106. A communication from the Secretary of Transportation, transmitting a draft of proposed legislation to amend the Federal Railroad Safety Act of 1970 and the Rail Passenger Service Act to authorize additional appropriations and for other purposes, and to amend other rail safety Acts, the Railroad Revitalization and Regulatory Reform Act of 1976, and the Department of Transportation Act; to the Committee on Commerce, Science, and Transportation.

EC–3107. A communication from the Comptroller of the currency, transmitting, pursuant to law, the Annual Report of the Consumer Affairs Division of the Comptroller of the Currency for calendar year 1977; to the Committee on Commerce, Science, and Transportation.

EC–3108. A communication from the Chairman, Interstate Commerce Commission, transmitting, pursuant to law, a report on the effectiveness of the Rail Passenger Service Act of 1970 (Public Law 91–518); to the Committee on Commerce, Science, and Transportation.

EC–3109. A communication from the Secretary of Transportation, transmitting a draft of proposed legislation to amend section 2632 of title 10, United States Code, to provide the Secretary of the department in which the Coast Guard is operating with the authority to transport Coast Guard employees to and from certain places of employment; to the Committee on Commerce, Science, and Transportation.

EC–3110. A communication from the Assistant Secretary of the Interior, transmitting a draft of proposed legislation to amend Section 5(a) of the Wild and Scenic Rivers Act by designating a segment of the North Umpqua River in Oregon and its tributary Steamboat Creek for study as potential additions to the National Wild and Scenic Rivers System; to the Committee on Energy and Natural Resources.

EC–3111. A communication from the Acting General Counsel, Department of Energy, reporting, pursuant to law, notice of a meeting related to the International Energy Program; to the Committee on Energy and Natural Resources.

EC–3112. A communication from the Administrator, Energy Information Administration, Department of Energy, transmitting, pursuant to law, a report of monitored changes in the refiner distribution and market shares of the statutory categories of refined petroleum products; to the Committee on Energy and Natural Resources.

EC–3113. A communication from the Acting Administrator, United States Environmental Protection Agency, transmitting, pursuant to law, a report on actions taken by the Environmental Protection Agency and other Federal agencies to regulate sources of halocarbon emissions; to the Committee on Environment and Public Works.

EC–3114. A communication from the Chairman, National Professional Standards Review Council, Public Health Service, Department of Health, Education, and Welfare, reporting, pursuant to law, on the National Professional Standards Review Council (NPSRC); to the Committee on Finance.

EC–3115. A confidential communication from the Director, Defense Security Assistance Agency, transmitting, pursuant to law, a report on the impact of United States foreign arms sales and transfers on United States defense readiness and national security; to the Committee on Foreign Relations.

EC–3116. A communication from the Administrator, Agency for International Development, Department of State, transmitting, pursuant to law, a report regarding activities carried out under Section 121 of the Foreign Assistance Act of 1961, as amended, on the Sahel Development Program; to the Committee on Foreign Relations.

EC–3117. A communication from the Assistant Legal Adviser for Treaty Affairs, Department of State, transmitting, pursuant to law, international agreements other than treaties entered into by the United States within sixty days after the execution thereof; to the Committee on Foreign Relations.

EC–3118. A confidential communication from the Comptroller General of the United States, transmitting, pursuant to law, a report on major issues of the FFG–7 Guided Missile Frigate Shipbuilding Program; to the Committee on Governmental Affairs.

EC–3119. A confidential communication from the Comptroller General of the United States, transmitting pursuant to law, a report on the next-generation aircraft carrier: the CVV and other alternatives; to the Committee on Governmental Affairs.

EC–3120. A secret communication from the Comptroller General of the United States, transmitting, pursuant to law, a report on the major issues of the Stinger Surface-to-Air Missile Program; to the Committee on Governmental Affairs.

EC–3121. A confidential communication from the Comptroller General of the United States, transmitting, pursuant to law, a report on the major issues of the Advanced Attack Helicopter Program; to the Committee on Governmental Affairs.

EC–3122. A communication from the Deputy Assistant Secretary of Defense (Administration), transmitting, pursuant to law, a Department of the Navy proposal, with supporting documentation, to alter two existing Navy record systems; to the Committee on Governmental Affairs.

EC–3123. A communication from the Administrator, Health Care Financing Administration, Department of Health, Education, and Welfare, transmitting, pursuant to law, a report on a new system of records, "Medicare Second Surgical Opinion Experiments HEW–HCFA–OPPR–09–70–0001"; to the Committee on Governmental Affairs.

EC–3124. A communication from the General Counsel, Foreign Claims Settlement Commission of the United States, transmitting, pursuant to law, a report of its compliance with the Government in the Sunshine Act (Public Law 94–409); to the Committee on Governmental Affairs.

EC–3125. A communication from the Acting Staff Director, United States Commission on Civil Rights, transmitting, pursuant to law, a report on its administration of the Freedom of Information Act for calendar year 1977; to the Committee on the Judiciary.

EC–3126. A communication from the Director, United States Information Agency, transmitting, pursuant to law, a report on its administration of the Freedom of Information Act; to the Committee on the Judiciary.

PETITIONS

The PRESIDING OFFICER laid before the Senate the following petitions, which were referred as indicated:

POM–538. A resolution adopted by the Legislature of the State of Massachusetts; to the Committee on the Budget:

"RESOLUTION

"Whereas, The domestic needs of our nation will never receive the major attention they deserve, or the financing they require, until there is a re-ordering of our national priorities; and

"Whereas, The amount of expenditures for the Pentagon is excessive, and unrelated to our actual foreign policy and defense needs; and

"Whereas, The attitude exists among some in the administration and Congress that Pentagon expenditures, regardless of their size and merit, must be reduced; and

"Whereas, If we eliminate the items which are fixed by law and contractual obligation, including such items as social security and railroad retirement, which are financed by separate payroll taxes, unlike defense expenditures and which come out of general revenues, and eliminate fixed costs such as interest payments or pensions, we find that only twenty-six per cent of the national budget is subject to appropriations controlled by Congress as reported by the budget office of the United States Congress; and

"Whereas, Of that twenty-six per cent, eighteen per cent goes to the military, including military foreign aid, and only eight per cent for domestic civilian needs; and

"Whereas, Responsible policy requires that if we advocate increased domestic and social spending, we must indicate where such funds must come from; now therefore, be it

"*Resolved*, That the Massachusetts Senate urges Congress to redress the imbalance between domestic expenditures and expenditures for the Pentagon by recognizing that the social defense of this nation is at least as important to the national defense as is our military defense, and by supporting the transfer of funds from military spending to human needs programs through the congressional budget process; and be it further

"*Resolved*, That copies of these resolutions be transmitted forthwith by the Clerk of the Senate to the President of the United States, the presiding officer of each branch of the Congress, and to the members thereof from the commonwealth."

POM–539. A resolution adopted by the Legislature of the State of Pennsylvania; to the Committee on Foreign Relations:

"RESOLUTION

"Whereas, For over six decades through two world wars and an intense civil war to hold back communism, Greece has been a fighting ally and friend of the United States, and is now an indispensable ally and the symbol of democratic government in Eastern Europe; and

"Whereas, Greece is essential to the security of the United States and the Free World in the Mediterranean area and is essential for the safeguarding of the Sixth Fleet in the Mediterranean; and

"Whereas, Turkey has attacked, seized and continues to occupy the independent island nation of Cyprus, by illegal use of United States supplied military weapons in violation of the United States Foreign Military Assistance and Sales Acts, and in violation of four United Nation Resolutions; and

"Whereas, The humanitarian crisis on Cyprus, involving 200,000 Cypriot refugees, grow's increasingly more desperate, as the prospects for a negotiated settlement appear dim; and

"Whereas, President Carter has declared that the United States foreign policy shall be committed to the protection of human rights, and he has proceeded to withdraw United States aid from nations which have persisted in violation of human rights, such as Turkey has committed, and is continuing to commit, against the people and the nation of Cyprus; now therefore be it

"*Resolved*, That the Senate of the Commonwealth of Pennsylvania urges the President and the Congress of the United States to exert their best efforts towards a just resolution of the Cyprus conflict, to effectuate a removal of all foreign troops from Cyprus, to restore the 200,000 suffering Cypriot refugees to their homes, and to restore to the people of Cyprus the right of self-determination; and be it further

"*Resolved*, That the Senate of the Commonwealth of Pennsylvania urges the Presi-

dent and the Congress of the United States to give generous support to the Cypriot refugees, and to continue to support Greece by annual aid authorizations and to continue the embargo on arms to Turkey until such time as Turkey acts to resolve the Cyprus conflict; and be it further

"Resolved, That copies of this resolution be transmitted to the President of the United States and to the presiding officer of each House of Congress of the United States and to each Senator and Representatives from Pennsylvania in the Congress of the United States."

POM–540. A concurrent resolution adopted by the Legislature of the State of South Dakota; to the Committee on Human Resources:

"HOUSE CONCURRENT RESOLUTION NO. 1016

"Whereas senior citizens are a valuable resource to the communities of this country because they are capable of providing vital services to all the citizens of the community; and

"Whereas, in the golden years of their lives, these citizens can convey their experiences for the benefit of the entire community;

"Whereas, the Retired Senior Volunteer Program is a federally and locally funded action program providing a dual benefit to the community by creating meaningful retirement roles to senior citizens through community volunteer services and providing needed volunteer help to the community; and

"Whereas, there are 1,800 volunteers serving in the nine Retired Senior Volunteer Programs in this state; and

"Whereas, this state has received 327,566 hours of volunteer service in one year from these programs; and

"Whereas, this assistance would have impacted state and local governments in the amount of $753,401.80 had they been required to hire such services;

"Now, therefore, be it resolved, by the House of Representatives of the Fifty-third Legislature of the state of South Dakota, the Senate concurring therein, that the state of South Dakota deeply appreciated the contributions of the Retired Senior Volunteer Program and requests that the Congress support full funding for such program; and

"Be it further resolved, that copies of this Resolution be sent to President Carter, the Chief Clerks of the United States House of Representatives and Senate, the South Dakota Congressional Delegation, and Jo Ann Eisenbeisz, Director of the South Dakota Retired Senior Volunteer Program."

POM–431. A memorial adopted by the Legislature of the State of Arizona; to the Committee on the Judiciary:

"HOUSE MEMORIAL 2002

"Whereas, each year thousands of persons are sentenced by state courts to prison for the commission of crimes; and

"Whereas, the current habeas corpus actions in federal court allow each defendant to demand an individual reexamination of each issue in a case and there is no requirement that all such issues be raised in one appellate action; and

"Whereas, the court system of this country is deluged with thousands of cases on appeal; and

"Whereas, the backlog of cases causes hardships on victims and defendants alike; and

"Whereas, excessive appeals result in the expenditure of millions of dollars in legal investigative and court costs and tend to thwart and defeat justice.

"Wherefore your memorialist, the House of Representatives of the State of Arizona, prays:

"1 That Congress give its most earnest consideration to the prompt enactment of legislation to require the consolidation of issues based on habeas corpus relief into one appeal.

"2. That the Secretary of State of the State of Arizona transmit copies of this Memorial to the President of the United States, the President of the United States Senate, the Speaker of the House of Representatives of the United States and to each Member of the Arizona Congressional Delegation."

REPORTS OF COMMITTEES SUBMITTED DURING THE RECESS

Pursuant to order of March 16, 1978, the following reports of committees were submitted during the recess:

Mr. DOLE, from the Committee on Agriculture, Nutrition, and Forestry, without amendment:

S. Res. 417. An original resolution waiving section 303(a) of the Congressional Budget Act of 1974 with respect to the consideration of S. 2481. Referred to the Committee on the Budget.

S. Res. 418. An original resolution waiving section 402(a) of the Congressional Budget Act of 1974 with respect to the consideration of S. 2481. Referred to the Committee on the Budget.

By Mr. DOLE, from the Committee on Agriculture, Nutrition, and Forestry, with an amendment and an amendment to the title:

S. 2481. A bill to provide wheat, feed grain, and cotton producers the opportunity to receive parity prices for the 1978 crop (Rept. No. 95–704).

REPORTS OF COMMITTEES

The following reports of committees were submitted:

By Mr. MAGNUSON, from the Committee on Appropriations, without recommendation:

H.R. 6782. A bill to permit marketing orders to include provisions concerning marketing promotion, including paid advertisement, of raisins and distribution among handlers of the pro rata costs of such promotion (Rept. No. 95–705).

EXECUTIVE REPORTS OF COMMITTEES

The following executive reports of committees were submitted:

By Mr. LONG, from the Committee on Finance:

Herbert L. Chabot, of Maryland, to be a Judge of the U.S. Tax Court.

(The nomination from the Committee on Finance was reported with the recommendation that it be confirmed, subject to the nominee's commitment to respond to requests to appear and testify before any duly constituted committee of the Senate.)

By Mr. CANNON, from the Committee on Commerce, Science, and Transportation:

Elwood Thomas Driver, of Virginia, to be a member of the National Transportation Safety Board.

James B. King, of Massachusetts, to be Chairman of the National Transportation Safety Board.

(The nominations from the Committee on Commerce, Science, and Transportation, were reported with the recommendation that they be confirmed, subject to the nominees' commitment to respond to requests to appear and testify before any duly constituted committee of the Senate.)

By Mr. WILLIAMS, from the Committee on Human Resources:

The following-named persons to be members of the Board of Directors of the Legal Services Corporation:

Cecilia Denogean Esques, of Arizona;
Steven L. Engelberg, of Maryland;
Hillary Diane Rodham, of Arkansas;
Richard Allen Trudell, of California; and
Josephine Marie Worthy, of Massachusetts.

The following-named persons to be members of the National Commission on Employment and Unemployment Statistics:

Bernard E. Anderson, of Pennsylvania;
Glen G. Cain, of Wisconsin;
Jack Carlson, of Maryland;
Michael Harold Moskow, of Illinois;
Rudolph Alphonsus Oswald, of Maryland;
Samuel L. Popkin, of California;
Mitchell Sviridoff, of New York; and
Joan Lawson Wills, of Virginia.

The following-named persons to be members of the Board of Regents of the National Library of Medicine, Public Health Service:

Thomas C. Chalmers, of New York;
Kelly M. West, of Oklahoma;
Samuel Richardson Hill, Jr., of Alabama;
Doris H. Merritt, of Indiana;
Cecil George Sheps, of North Carolina;
James Franklin Williams II, of Michigan; and
Nicholas Edward Davies, of Georgia.

(The nominations from the Committee on Human Resources were reported with the recommendation that they be confirmed, subject to the nominees' commitment to respond to requests to appear and testify before any duly constituted committee of the Senate.)

INTRODUCTION OF BILLS AND JOINT RESOLUTIONS

The following bills and joint resolutions were introduced, read the first time and, by unanimous consent, the second time, and referred as indicated:

By Mr. DOLE:

S. 2760. A bill to revise Public Law 480 Regulations Governing Operations; to the Committee on Agriculture, Nutrition, and Forestry.

By Mr. DOMENICI:

S. 2761. A bill to delegate power to the States, through their State legislatures, to disapprove certain specified activities licensed by the Nuclear Regulatory Commission, and for other purposes; to the Committee on Environment and Public Works.

By Mr. GRAVEL:

S. 2762. A bill to provide for the development of aquaculture in the United States, and for other purposes; to the Committee on Commerce, Science, and Transportation and the Committee on Agriculture, Nutrition, and Forestry, jointly, by unanimous consent.

By Mr. BARTLETT:

S. 2763. A bill to amend the Employee Retirement Income Security Act of 1974, and the Internal Revenue Code of 1954 to improve the administration and fairness of provisions relating to employee benefit plans; to the Committee on Finance and the Committee on Human Resources, jointly, by unanimous consent.

By Mr. BAYH:

S.J. Res. 123. A joint resolution proposing an amendment to the Constitution to provide for election of the President and Vice President of the United States by the national bonus plan; to the Committee on the Judiciary.

STATEMENTS ON INTRODUCED BILLS AND JOINT RESOLUTIONS

By Mr. DOLE:

S. 2760. A bill to revise Public Law 480 regulations governing operations; to the Committee on Agriculture, Nutrition, and Forestry.

(The remarks of Mr. DOLE when he introduced the bill appear earlier in today's proceedings.)

By Mr. DOMENICI:

S. 2761. A bill to delegate power to the States through their State legislatures, to disapprove certain specified activities licensed by the Nuclear Regulatory Commission, and for other purposes; to the Committee on Environment and Public Works.

STATE CONCURRENCE IN SITING OF NUCLEAR WASTE STORAGE

● Mr. DOMENICI. Mr. President, I am today introducing legislation relating to the crucial issue of state concurrence in the siting of nuclear waste storage facilities. Legislation in this area is both timely and necessary, and I am hopeful that my Senate colleagues will give this matter their prompt and careful attention.

Mr. President, the rapidly intensifying interest in solving the problems associated with permanent disposal of the accumulated radioactive nuclear by-products from our defense programs and from operation of commercial light water nuclear reactors has put enormous pressure on the Federal Government to locate and develop safe and environmentally sound long-term storage facilities at the earliest possible date. Release this week of a report by the Department of Energy Task Force for Review of Nuclear Waste Management, headed by John M. Deutch, Director of DOE's Office of Energy Research, has further heightened this interest. Among its key recommendations, the task force emphasized the need for development of away-from-reactor interim storage of spent fuel rods, early demonstration of satisfactory long-term storage techniques for spent rod assemblies, timely development of the waste isolation pilot plant planned for storage of certain defense wastes in an area near Carlsbad, N. Mex., and expanded licensing authority for the NRC. All of these recommendations bear heavily on the role and responsibilities of individual States in the nuclear waste field.

The legislation I am introducing today will establish beyond any doubt the right of a State to say "no" to the location within its boundaries of facilities intended for the long-term storage of radioactive nuclear waste materials. This right is limited only by the restriction that the proposed facility be licensable by the NRC. Companion legislation, to be introduced next week, will greatly expand the NRC licensing authority to cover all waste disposal facilities except certain limited activities at facilities associated with the national defense research and development program.

My bill also sets out a step-by-step procedure by which a State can exercise this veto power. The Governor and the State legislature would be promptly notified of the Nuclear Regulatory Commission's decision to allow development of a long-term waste disposal facility in the State. The State would then be given a minimum of 120 days, including 30 days during which the State legislature is in session, to either veto the facility or impose a 1-year moratorium on the project. If the State adopted a moratorium of the project, it would retain the right to veto the facility at any time during the moratorium period. The specific means for exercising the State veto under the bill would be left to the State legislature.

My bill also assures that the State will be given full and timely information on the proposed waste disposal facility and that the State legislature or its representative will have every opportunity to participate in any NRC licensing proceeding concerning development of the facility and to give its advice to NRC on the proposed project. Both the Governor and the State legislature must be given at least 6 months' advance notice of the proposal before any application may be filed with the Nuclear Regulatory Commission. During this period, the State must be given access to all information relevant to the proposal.

The bill also gives the Governor and the State legislature or its representative the opportunity to independently review this information. The scope and form of any reviews by either the Governor or the State legislature would be left to their discretion. In order to carry out its review function, the State legislature would be eligible for funding by the Nuclear Regulatory Commission. An authorization of $500,000 for fiscal year 1979 has been included in the bill for this purpose.

Finally, any advice or findings by the State legislature or its representative based upon its review could be forwarded to NRC where it would be included in the Commission's environmental impact statements on the project. Taken together, these provisions give the States the resources, information and opportunity to participate in the planning, siting and licensing of these waste disposal facilities and to share in the decision-making responsibility for the project.

Mr. President, from the point of view of a State faced with the possibility of Federal action to construct and operate a nuclear waste repository within that State's boundaries the protection offered by this legislation is essential. This is particularly true when the proposed facility is to be located on Federal land where, under current law, the States have limited authority to directly influence Federal actions. The history of nuclear waste repositories in this country is less than exemplary. With current technology we can and must improve upon this record, and, in the process, restore the confidence of our citizens in this Nation's technical capability to solve this critical problem.

Mr. President, under current law the final decision regarding siting of many of these nuclear waste disposal facilities is made by Federal officials who in truth may be more interested in solving a problem quickly and with minimum fuss, rather than in locating the best site. This situation is even more likely to be true today as the pressure on Federal officials to find a solution for nuclear waste disposal intensifies. My legislation will assure that the Federal Government remains honest and open in its dealings with States in this critical area and will assure that the States will have a meaningful role in these decisions.

Mr. President, I would ask unanimous consent that the text of my bill be printed in the RECORD.

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the purposes of this Act are:

(a) to recognize the interests of the States in the siting of facilities to be licensed by the Nuclear Regulatory Commission (hereinafter referred to as the "Commission") for long term storage and disposal operations, including research, development and demonstration operations, for high level radioactive wastes, irradiated nuclear reactor fuel, non-high level transuranium contaminated wastes, or low level radioactive wastes;

(b) to permit a State, through its State legislature, to fully participate in the process for planning, siting, and licensing any such facility to be located in that State; and

(c) to authorize the State, through its State legislature, to disapprove the site selection of any such facility to be located in that State.

SEC. 2. At least six months prior to filing an application with the Commission, any person proposing to apply for a Commission authorization to develop a facility for long term storage and disposal operations, including research, development, and demonstration operations, for high level radioactive wastes, irradiated nuclear reactor fuel, non-high level transuranium contaminated wastes or low level radioactive wastes must publicly notify the Governor and the presiding officers of the State legislature for the State in which the facility is to be located of its intent to file the application. Upon providing any notice of intent required by this section, such person must make available to the Governor and to the State legislature or its designated representative on a continuing basis all information, recommendations, and findings developed by it which are relevant to the intended application. The Commission may not accept any such application from a person who fails to comply with the requirements of this section. Upon receiving any notice of intent required by this section, the Governor and the State legislature or its designated representative may conduct such reviews of the information, recommendations, and findings made available to them as they deem appropriate.

SEC. 3. The Commission shall promptly notify the Governor and the presiding officers of the State legislature upon receipt of any application for a Commission authorization to develop a facility for long term storage and disposal operations, including research, development and demonstration operations, for high level radioactive wastes. irradiated nuclear reactor fuel, non-high level transuranium contaminated wastes, or low level radioactive wastes. The State legislature or its designated representative shall be afforded the opportunity to participate in any Commission proceeding on the application. Such opportunity to participate shall include reasonable opportunity to offer evidence, interrogate witnesses, and advise the Commission regarding the application without requiring the

State legislature or its representative to take a position for or against the granting of the application. The State legislature or its designated representative may also submit advice, recommendations or findings to be included in any environmental impact statement on the application which is prepared by the Commission pursuant to the National Environmental Policy Act of 1969, as amended.

SEC. 4. The Commission shall promptly notify the Governor and the presiding officers of the State legislature upon the issuance of any Commission authorization to develop a facility in that State for long term storage and disposal operations, including research, development and demonstration operations, for high level radioactive wastes, irradiated nuclear reactor fuel, non-high level transuranium contaminated wastes, or low level radioactive wastes. Any such authorization by the Commission shall not take effect for a period of at least 120 days, including at least thirty days during which the State legislature is in session, after the date of the Commission's notification. During such period, the State may (1) by majority vote of the State legislature, postpone the effectiveness of the Commission's authorization to develop the facility for a period of one year from the date of the legislature's action, or (2) in accordance with procedures adopted by the State legislature, immediately disapprove the Commission's authorization to develop the facility. Prior to the expiration of any one-year postponement adopted under this section, the State, in accordance with procedures adopted by the State legislature, may disapprove the Commission's authorization to develop the facility. Any such Commission authorization to develop the facility which is disapproved by a State in accordance with this section shall not take effect.

SEC. 5. The Commission is authorized to make annual grants and to provide other assistance, in accordance with rules and regulations promulgated by the Commission, to any State legislature which elects to conduct reviews of an intended application pursuant to section 2 of this Act. There is authorized to be appropriated to the Commission for this purpose for fiscal year 1979 to remain available until expended $500,000.

SEC. 6. As used in this Act, the term "person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency, any State or political subdivision thereof any political entity within a State, or any other entity.●

By Mr. GRAVEL:

S. 2762. A bill to provide for the development of aquaculture in the United States, and for other purposes; to the Committee on Commerce, Science, and Transportation and the Committee on Agriculture, Nutrition, and Forestry, jointly, by unanimous consent.

NATIONAL AQUACULTURE ORGANIC ACT OF 1978

● Mr. GRAVEL. Mr. President, I am introducing today legislation to focus national attention on the long neglected activity of aquaculture.

Aquaculture is the controlled cultivation of aquatic plants and animals. It is practiced in various degrees of intensity throughout the world and the time is now right for concerted action in the United States.

By introducing the National Aquaculture Organic Act of 1978, I hope to promote the concept of aquaculture by encouraging increased and coordinated activity in this area by public, private, educational, and almost any other seriously interested party.

AQUACULTURE—AN OVERVIEW

The world activity in aquaculture is wide and varied. China has been cultivating fish for over 2000 years. Japan now produces more than 10 percent of its seafood needs through aquaculture. And Russia has been giving aquaculture increased attention.

The United States has been dabbling in various forms of aquaculture for a considerable period of time, but a Library of Congress report (aquaculture—1976—serial No. 94-31) indicates that aquaculture in the United States has grown insignificantly compared to such activities in other parts of the world. The species which are presently receiving the most attention in the United States are salmon, catfish, trout, oysters, crawfish, clams, and shrimp. The potential for increased production of these species, as well as the production of species heretofore uncultured in the United States is very promising.

My home State of Alaska has been involved in the cultivation of fin fish since the late 1800's. With more than 50 percent of the entire U.S. coastline located within the State of Alaska, one can understand why my interest in aquaculture is great. The potential for marine aquaculture development within Alaska is truly incredible, not to mention the vast possibilities for future freshwater-cultivation.

AQUACULTURE—MARKET POTENTIAL

World fishery resources were once thought to be practically unlimited. This has been clearly shown not to be the case. The world resources are now estimated by some experts to be capable of yielding a maximum global harvest of 100 to 150 million metric tons per year. More conservative estimates rarely exceed 100 million metric tons, including that of the National Oceanic and Atmospheric Administration, which estimates that the 100 million metric ton figure will be met by 1980. This suggests that a world shortage of fish products is possible in the foreseeable future.

World per capita fish consumption has increased over the past several years and in the United States alone has risen to a present level of 12.9 pounds per person per year. Reliable estimates project American consumption to increase to 15.2 pounds by the year 2000. A Library of Congress study has predicted that in the same period of time overall demand for seafood products in the United States, both edible and industrial, is expected to increase by a full 80 percent.

All these indicators suggest that the demand for fish products will only continue to increase in the years to come. With wild fish stock exploitation reaching maximum levels, per capita consumption of fish products on the rise, and the world population expected to increase from a level of 4 billion today to 6 billion by the turn of the century, aquaculture must be viewed as a promising possibility in helping to meet these food demands.

AQUACULTURE—ECONOMIC POTENTIAL

For a nation practically surrounded by water and replete with possible sites for raising inland fish species, fishery imports into the United States are surprisingly high. In 1976 the United States imported 4.6 billion pounds of edible fishery products valued at $1.7 billion, and 1.6 billion pounds of industrial fishery products worth $.5 billion. This adds up to $2.2 billion of American money sent abroad to purchase fishery products. The U.S. fishery exports in 1976 amounted to 241 million pounds, valued at only $330 million.

This leaves a net annual trade deficit of practically $2 billion for foreign fish products. Stated another way, close to 65 percent of fish consumed in the United States is imported from foreign countries.

The studious application of aquaculture techniques could help to reverse this unfavorable balance of trade situation. A promotion of aquaculture will result in the creation of many new jobs, fishery employment on a year-round rather than a seasonal basis, and an overall stability to the historical boom or bust fishery economy.

NATIONAL AQUACULTURE ORGANIC ACT—INTENT

Mr. President, the National Aquaculture Organic Act of 1978 will provide long overdue impetus to the promotion of aquaculture in the United States. My desire is to encourage the development of aquaculture of all types in all parts of the United States. This would include encouraging aquaculture for marine, as well as fresh water, species; for aquatic plants, as well as aquatic animals; for presently cultured species, as well as species as yet untested by the techniques of aquaculture; and for the rehabilitation and enhancement of public fisheries, as well as the promotion of commercial enterprises.

To accomplish these goals, my legislation designates the Department of Commerce as the agency with ultimate responsibility. The Commerce Department will, however, operate in close conjunction with the Departments of Agriculture and Interior, as both those Departments have proven themselves expert in many important aspects of aquaculture.

There are many facets to aquaculture, and I believe no single agency can or should be named the exclusive authority. The better approach is to tap the existing expertise of the several Departments and coordinate all aquaculture efforts through the Department of Commerce.

An Interagency Committee on Aquaculture will be formed to facilitate and coordinate information and activities among the three Departments, as well as all other agencies and parties involved.

My legislation also provides for the formulation of a national aquaculture development plan. This plan, to be drawn up in the year following enactment, will embody concrete suggestions on specific directions and priorities to pursue in the development of aquaculture in the United States.

A grant program will encourage participation in what is generally considered a rather expensive enterprise. These grants will allow the private entrepreneur to get involved in a venture that would otherwise, by virtue of prohibitive startup costs, be reserved for large corporations or the individual of great wealth.

A Federal aquaculture assistance fund is created for three purposes: First, to facilitate aquaculture financing by guaranteeing loans made to aquaculture operations since such loans have historically been unreasonably difficult to obtain; second, to make disaster loans for aquaculture stocks which are destroyed by unavoidable diseases; and third, to provide insurance coverage to aquaculture operations in those instances where insurance is not otherwise available.

NATIONAL AQUACULTURE ORGANIC ACT—COMPARISON TO OTHER AQUACULTURE LEGISLATION

Mr. President, the bill I offer today is in many respects similar to other pieces of aquaculture legislation already introduced in the Senate. S. 1043, introduced by Senator BENTSEN and of which I am a cosponsor, and S. 2218 and S. 2582, introduced by Senators STONE and WEICKER, respectively, all make numerous points which coincide with the proposals I have here. H.R. 9370, a House aquaculture bill that just recently passed that Chamber by a vote of 234 to 130, is also similar in many regards to this piece of legislation.

There are, however, three important new areas which my bill emphasizes, and I should like briefly to explain them.

First, unlike the other aquaculture legislation, I would require that the national aquaculture development plan be formulated at the regional level in advisory subcommittees and finalized at the national level by the National Advisory Committee. In a country as large as ours, with aquaculture interests as varied as they are, regional input for this national plan is an absolute necessity.

To insure adequate input from interests as diverse as shrimp farmers in Florida, salmon ranchers in Alaska, oyster raisers in Maine, and catfish farmers in the Midwest, information must be gathered on a regional basis. Only persons intimately familiar with the regional needs and conditions of the various parts of this country can provide such particularized data.

Second, I add the enhancement and rehabilitation of traditional publicly owned fish stocks as a major goal to be addressed by this legislation. It seems obvious that in addition to encouraging development of commercial aquaculture for the private sector, we should not overlook the desirability of rehabilitating the numerous depleted fish stocks which are of vital importance to the public sector.

The third and final issue of importance is the problem of land and water access for aquaculture facilities. I believe the contributions which aquaculture can make in helping to meet nutritional needs, stimulating commercial activity, and enhancing existing fisheries warrant its being given due consideration in land and water use management deliberations.

Aquaculture is certainly an activity that has been neglected in this country for too long. The numerous benefits to be gained—commercial, nutritional, and conservational, among others—have not yet been fully appreciated. Passage of this legislation will be a positive step toward translating these benefits into tangible realities.

Mr. President, I ask unanimous consent that the text of this bill be printed at this point in the RECORD.

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

S. 2762

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Aquaculture Organic Act of 1978".

SEC. 2. FINDINGS, PURPOSE, AND POLICY.

(a) The Congress finds the following:

(1) The world production of seafood has declined since 1970 and the harvest of some populations of fish and shellfish has exceeded levels of maximum sustainable yield.

(2) Certain stocks of fish and shellfish of importance to the United States are depleted, or are declining, and such depletion or decline has an undesirable impact on both commercial and recreational fisheries.

(3) There is an extensive market for seafood in the United States, but the United States imports in excess of 50 percent of its fish and shellfish for human consumption (which imports are ten times the level of exports), and this dependence on imports as a source of protein makes it difficult to insure continuous supplies and suggests that alternatives such as aquaculture be developed.

(4) Many segments of the world population are now facing serious nutritional deficiencies and food shortages due to adverse climatic conditions and the steady growth of population. These problems will become more severe, and the resulting demand for increased food production will have to be met chiefly through the application of scientific and technological advances from research on aquaculture and other food production systems.

(5) Aquaculture is contributing significantly to world food supplies with production equal to 10 percent of current landings of seafoods and has the potential for increase by a factor of five before the end of this century.

(6) Less than 3 percent of current United States fisheries production results from aquaculture but there is a good potential for expanding production from aquaculture to equal or exceed the worldwide average, thereby helping to provide United States consumers with stable supplies of high quality aquatic foods.

(7) Growth of aquatic plants is a source of food for human and animal consumption as well as a source of industrial materials and energy. The Congress recognizes the importance of developing aquaculture of both plant and animal species.

(8) The stocking of advanced life stages of fish and shellfish produced by aquaculture is a means of rebuilding and augmenting fish and shellfish populations and establishing new fisheries.

(9) The application of aquaculture technology offers opportunities for the recovery of wasted thermal energy, nutrients, and other resources and may be a more efficient use of these resources for food production culture.

(10) Where water, whether fresh, brackish, or marine is suitable for aquaculture, appropriate consideration should be given to the utilization of such water for aquaculture along with the other uses of such water.

((11) Where land-use management policies may inhibit the development of aquaculture facilities in areas suitable for aquaculture, appropriate consideration should be given to the utilization of these areas for aquaculture along with the other uses of such areas.

(12) Current efforts to develop aquaculture in the United States are highly diffuse, and a strong commitment by the Federal Government will make aquaculture more efficient and competitive, thereby stimulating public and private investment and development.

(13) While many scientific and technological problems are unsolved, there is sufficient knowledge to further the development of aquaculture production systems for many species of fish and shellfish.

(14) The development of aquaculture in the United States has been limited by the inability of producers of aquatic species to obtain adequate capital and a reliable source of seed stock.

(15) Aquaculture in the United States has traditionally concentrated on a few aquatic species, but many others have a potential for commercial and other culture. However, the culture of additional species may include a higher degree of risk than the culture of traditional species, especially during the initial stages.

(16) Government programs that help to reduce the risks associated with production of agricultural commodities have not been generally available to producers of those aquatic species in which the risk is high.

(17) The rehabilitation and enhancement of the publicly owned fish and shellfish resources are desirable applications of aquaculture technology as a means to increase the general public benefits to be derived from the utilization of these common property resources.

(18) Extensions of jurisdiction over marine resources by numerous nations have resulted in the exclusion of many fishing nations from traditional fishing areas and created a demand in those nations for aquatic food-stuffs. Aquaculture could supply this new demand.

(19) The Select Committee on Nutrition and Human Needs of the Senate has recommended an increase in the fish consumption of the American family. Aquaculture can help to carry out this recommendation.

(b) The purpose of this Act is to promote aquaculture in the United States by—

(1) declaring a national aquaculture policy;

(2) establishing and implementing a national plan for aquaculture; and

(3) developing programs and encouraging activities:

which will result in the coordination of domestic aquaculture efforts, the conservation of existing aquatic resources, the rehabilitation and enhancement of the publicly owned fish and shellfish stocks, the encouragement of commercial aquaculture activities, the creation of new industries and job opportunities, and other national benefits.".

(c) Aquaculture has a high potential for augmenting existing commercial and sport fisheries, thereby increasing the supply of aquatic protein for both human and animal consumption and assisting the United States in meeting its future food needs and contributing to the solution of world food problems. It is, therefore, in the national interest, and it is the national policy, to encourage the development of aquaculture.

SEC. 3. DEFINITIONS.

As used in this Act—

(1) The term "aquaculture" means the propagation and rearing of aquatic species in controlled or selected environments, including ocean ranching.

(2) The term "aquaculture facility" means any land, structure, or other appurtenance, if such land, structure, and appurtenance is located within the United States, which is

used for aquaculture, including, but not limited to, any laboratory, vehicle, hatchery, rearing pond, raceway, pen, incubator, or other equipment.

(3) The term "aquatic species" means any species, native or introduced, of finfish, mollusk or crustacean or other aquatic invertebrate, amphibian, reptile, or aquatic plant, other than any such species which is primarily used for ornamental purposes.

(4) The term "Fund" means the Federal Aquaculture Assistance Fund established by section 11.

(5) The term "person" means any individual who is a citizen or national of the United States and any corporation, partnership, association, or other entity (including, but not limited to, any community development corporation or fisherman's cooperative) organized or existing under the laws of any State.

(6) The term "Secretary" means the Secretary of Commerce.

(7) The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, the Trust Territory of the Pacific Islands, and any other Commonwealth, territory, or possession of the United States.

(8) The term "United States", when used in a geographical context, means all States.

SEC. 4. NATIONAL AQUACULTURE DEVELOPMENT PLAN.

"(a)(1) Before the close of the 1-year period beginning on the effective date of this Act, the Secretary, after consultation with the Secretary of the Interior and the Secretary of Agriculture, shall prepare a National Aquaculture Development Plan (hereinafter in this Act referred to as the 'plan').

"(2)(A) The Secretary shall, after consultation with the Secretary of the Interior and the Secretary of Agriculture, establish an advisory committee for the purpose of assisting the Secretary in formulating a plan responsive to the various regional needs, interests, and approaches to the concept of aquaculture.

"(B) Such advisory committee shall be composed of regional subcommittees. The subcommittee regions shall be established as follows:

"(i) Eight regional subcommittees shall be created which correspond in geographical composition to the eight regional divisions created under section 302(a) of the Fishery Conservation and Management Act of 1976.

"(ii) Other regional subcommittees shall be created by the Secretary to represent the remaining non-oceanic States which are not a part of the regional subcommittees created by clause (i) of this subparagraph. Such other regional subcommittees shall be established on the basis of the following criteria:

"(I) geographical proximity of States to one another,

"(II) similarity of States in aquacultural activities and potential, and

"(III) other revelant factors.

"(C) Membership of the regional advisory subcommittee from any region must include representatives of at least the following groups, where such groups exist in that region:

"(i) State fish and game department;

"(ii) commercial fishermen;

"(iii) fishfood processors;

"(iv) private sector aquaculture organizations;

"(v) regional fishery management councils;

"(vi) Federal fish and wildlife agency;

"(vii) recreational fishermen; and

"(viii) educational institutions.

"(D) The governors of the various States shall appoint members to the regional advisory subcommittees.

"(E) The members of the regional advisory committees established under subparagraph (B), while away from their homes or regular places of business in the performance of services for the committee, shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5, United States Code.

"(b) The plan shall be formulated at the regional level and coordinated and finalized at the secretarial level. The final plan shall—".

(1) identify those aquatic species (hereinafter referred to in this Act as "priority aquatic species") which the Secretary determines to have a potential for culturing on a commercial or other basis, which determination shall be made by the Secretary after taking into account—

(A) the extent of commercial aquaculture, if any, currently being carried out with respect to such species, and the projected biological and economic feasibility of culturing such species;

(B) the extent to which aquaculture research and development have been undertaken, within the public and private sectors, with respect to such species;

(C) the time and resources which will be required to develop aquaculture technology to the point where such species can be cultured on a commercial or other basis; and

(D) such other factors as the Secretary determines to be appropriate; and

(2) contain an aquaculture development program, prepared by the Secretary, for each priority aquatic species.

(c) The aquaculture development program contained in the plan for each priority aquatic species shall set forth those actions which the Secretary determines should be undertaken, and the period of time within which each such action should be completed, to provide for the culture of each such species on a commercial or other basis. Such actions, with respect to each priority aquatic species, shall include—

(1) such research and development, technical assistance, demonstration, extension education, and training as may be necessary and appropriate regarding—

(A) aquaculture facility and operation,

(B) water quality management,

(C) utilization of waste products (including thermal effluents),

(D) nutrition and the development of economical feeds,

(E) life history, genetics, physiology, and pathology and disease control (including research regarding organisms which may not be harmful to fish and shellfish but are injurious to humans),

(F) processing and market development, and

(G) production management and quality control;

(2) research with respect to the effect of the culture of such species on estuarine and other water areas;

(3) the identification and analysis of any legal or regulatory constraints which may affect the culture of such species;

(4) the development of adequate supplies of seed stock;

(5) the construction, purchase, lease, or acquisition of necessary developmental aquaculture facilities; and

(6) such other actions relating to research and development, technical assistance, demonstration, extension education, and training as such Secretary deems necessary and appropriate.

(d) In preparing an aquaculture development program for any priority aquatic species, and in reviewing any such program pursuant to subsection (f), the Secretary shall, to the extent practicable, take into account any significant action which has been, or which is proposed to be undertaken by any other Federal agency, any State agency, or any person, and which may affect the accomplishment of the program.

(e) Each action under each aquaculture development program prepared under this section for a priority aquatic species shall be implemented, either individually, jointly, or collectively, by the Secretary, the Secretary of the Interior, or the Secretary of Agriculture, as specified by the Secretary in the program on the basis of—

(1) responsibilities vested in the respective Secretaries by law or any executive action having the effect of law (including, but not limited to, Reorganization Plan Numbered 4 of 1970); and

(2) in cases where paragraph (1) does not apply, the experience, expertise, and other appropriate resources which the department, over which the Secretary concerned has jurisdiction, may have with respect to the action required under the program.

(f)(1) The Secretary, in consultation with the Secretary of the Interior, the Secretary of Agriculture, and the chief executive officer of any other Federal agency, any appropriate Regional Fishery Management Council, and any State agency which has significant functions which relate to aquaculture, shall review on an annual basis—

(A) each aquatic species not identified as a priority aquatic species; and

(B) the aquaculture development program established under the plan for each priority aquatic species to determine whether the actions specified in the program are being accomplished on a successful and timely basis.

(2) If as a result of the review conducted pursuant to paragraph (1)(A), the Secretary determines, after taking into account the criteria set forth in subsection (b)(1), that any aquatic species has a potential for culturing on a commercial or other basis the Secretary shall by regulation amend and plan to identify such species as a priority aquatic species and prepare an aquaculture development program for such species pursuant to subsection (c).

(3) If as a result of the review conducted pursuant to paragraph (1)(B), the Secretary finds that—

(A) any action so specified should be revised, the Secretary shall make such revision to the program as he deems necessary and appropriate; or

(B) sufficient progress is not being made with respect to any such program or that actions taken under any such program indicate that culture of the priority aquatic species concerned is doubtful, the Secretary shall cancel the program.

The Secretary shall by regulation amend the plan whenever any revision or cancellation is made pursuant to this subsection.

SEC. 5. FUNCTIONS AND POWERS.

(a) In implementing the aquaculture development program prepared under section 4 for any priority aquatic species, the Secretary, the Secretary of the Interior, or the Secretary of Agriculture, as the case may be, shall—

(1) provide advisory, educational, and technical assistance (including training) with respect to culture of the species to interested public and private organizations and individuals, but in providing such assistance shall, to the maximum extent practicable, avoid duplication of like assistance provided by other Federal agencies;

(2) consult and cooperate with interested persons, Federal, State, and local government agencies, regional commissions, and educational institutions regarding the development of aquaculture technology;

(3) produce, under the authority of section 4(c)(4), and sell at cost seed stock for

the priority aquatic species when privately produced seed stock is unavailable, unreliable, or not sufficient to meet production needs;

"(4) encourage the implementation of aquaculture technology in the rehabilitation and enhancement of the publicly owned fish and shellfish stocks, as well as the promotion of private commercial aquacultural enterprises;

"(5) assist the development of aquaculture by requiring that in areas where multiple land and water uses exist, aquaculture should be viewed as an important use which should be given appropriate consideration; and".

(6) prescribe such regulations as may be necessary to carry out such program.

(b) The Secretary, the Secretary of the Interior, or the Secretary of Agriculture may, incident to such Secretary's implementation of any aquaculture development program—

(1) for the purposes of assessing the biological and economic feasibility of any aquaculture system—

(A) conduct scale tests of the system, and, if necessary for the conduct of any such test, construct, operate, and maintain developmental aquaculture facilities, including, but not limited to, pilot plants for testing laboratory-scale results; and

(B) conduct such other tests or analyses as may be necessary;

(2) develop methods to enhance aquatic species stocks by aquaculture;

(3) carry out such studies and research with respect to aquatic species as may be appropriate regardless of whether such species is or has been identified as a priority aquatic species; and

(4) take such other actions as such Secretary deems necessary and appropriate.

(c) In addition to carrying out such other functions as are required under this Act, the Secretary shall—

(1) establish and maintain an aquaculture information center which shall function as a national clearinghouse for the collection, selection, analysis, and dissemination of scientific, technical, legal, and economic information relating to aquaculture;

(2) conduct appropriate surveys, in coordination with other agencies, of public and private aquaculture being carried out in the United States with respect to each aquatic species for the purpose of acquiring information on acreages, water use, production, culture techniques, and other relevant matters;

(3) arrange for the mutual exchange of information relating to aquaculture with foreign nations; and

(4) conduct a continuing study to determine which existing capture fisheries could be adversely impacted in the marketplace by competition from products produced by commercial aquaculture enterprises significantly aided under this Act, which study shall include an assessment of economic impact by species and by geographical region, and recommended measures to ameliorate any adverse impact. The Secretary shall report to Congress on the findings made under such study no later than 2 years following the effective date of this Act and every 2 years thereafter.

Any production information submitted to the Secretary by any person under paragraph (2) shall be confidential and shall not be disclosed except to the Secretary, the Secretary of the Interior, or the Secretary of Agriculture, as the case may be, for purposes of carrying out this Act, the advisory committee which may be established under section 4(a)(2)(A), or when required under court order. The Secretary shall by regulation prescribe such procedures as may be necessary to preserve such confidentiality, except that the Secretary may release or make public any such information in any aggregate or summary form which does not directly or indirectly disclose the identity or business of any person who submits such information.

(d)(1) The Secretary, the Secretary of the Interior, and the Secretary of Agriculture are each authorized to accept any gift, temporary donation, or devise or bequest of real or personal property, or the proceeds therefrom, or interests therein, for use in carrying out any function that such Secretary may have under this Act. Any such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude, if such terms are deemed by the Secretary concerned to be in accordance with law and compatible with the purpose for which acceptance is sought.

(2) Any gift or bequest of money, and any proceeds from the sale of other property received as a gift or bequest under this subsection, shall be deposited in a separate account in the Treasury and shall be disbursed upon the order of the Secretary concerned.

SEC. 6. COORDINATION OF FEDERAL AGENCY ACTIVITIES REGARDING AQUACULTURE.

(a)(1) There is established the Interagency Committee on Aquaculture (hereinafter in this section referred to as the "Committee") which shall be composed of the following officers or their designees:

(A) The Secretary, who shall be the Chairman of the Committee.

(B) The Secretary of the Interior.

(C) The Secretary of Agriculture.

(D) The Administrator of the Environmental Protection Agency.

(E) The Administrator of the Energy Research and Development Administration.

(F) The Commissioner of Food and Drugs.

(G) The Administrator of the Small Business Administration.

(H) The Chief of Engineers.

(I) The chief executive officer of any other Federal agency and any Regional Fishery Management Council which the Secretary finds to have significant functions which relate, or may relate, to the development of aquaculture.

(2) The functions of the Committee shall be—

(A) to ensure that there is a continuing exchange of information among the agencies represented on the Committee with respect to the nature and status of the programs or projects being carried out by such agencies which relate, or which may relate, to aquaculture in general or to the implementation of the plan; and

(B) to review on a continuing basis the relevant programs and projects of all Federal agencies to determine whether they are being carried out in compliance with subsection (b).

(b) Each Federal agency which has any function or responsibility with respect to aquaculture or has jurisdiction over any activity which affects, or may affect, the achievement of the purposes of this Act, shall, in consultation with the Secretary and to the maximum extent practicable, carry out such function, responsibility, and activity in a manner which is consistent with the purposes of this Act.

(c) Nothing in this Act shall be construed to amend, repeal, or otherwise modify the authority of any Federal officer or any Federal agency to carry out any functions relating to aquaculture which are authorized under any other provision of law.

SEC. 7. CONTRACTS AND GRANTS.

(a) The Secretary may carry out any function under this Act, and the Secretary of the Interior or the Secretary of Agriculture may carry out any function relating to any aquaculture development program which he is specified to implement under the plan, through grants to, or contracts with, any other Federal agency, any agency of any State and, subject to the approval of the State, any agency of any political subdivision thereof, any regional commission, any educational institution, or any other person.

(b) Any contract entered into, or any grant made, pursuant to this section shall contain such conditions and limitations as the Secretary concerned shall by regulation prescribe as being necessary and appropriate to protect the interests of the United States; except that no contract may be entered into, and no grant may be made, pursuant to this section unless the applicant submits with his application therefor a certification from each appropriate State agency and each appropriate local government agency stating that nothing in the laws administered by such agency prevents the carrying out of the project to which the contract or grant will be applied.

(c) The amount of any grant made pursuant to this section may not exceed one-half the estimated cost of the project for which the grant is made.

(d) Any person who receives a grant or contract under this section shall make available to the Secretary concerned and to the Comptroller General of the United States, or any of their authorized representatives, for purposes of audit and examination, any book, document, paper, and record that is pertinent to the funds received by such person under such grant or contract.

SEC. 8. GUARANTEES OF OBLIGATIONS ISSUED FOR AQUACULTURE FACILITIES.

(a)(1) The Secretary may, subject to the provisions of this section, guarantee, or make a commitment to guarantee, the payment of interest on, and the principal amount of, any obligation issued by an obligor for any of the following purposes:

(A) The financing of the construction, reconstruction, or reconditioning of any aquaculture facility (including the financing of the purchase cost of any aquaculture facility to be reconstructed or reconditioned); except that no obligation may be guaranteed under this section later than 2 years after the date of the completion of the construction, reconstruction, or reconditioning of the aquaculture facility involved.

(B) The acquisition of stocks of aquatic species for any aquaculture facility.

(C) The financing of the initial operating expenses of any aquaculture facility.

(D) The financing of marketing operations exclusively for aquaculture products.

(E) The refinancing of any existing obligation issued for any of the purposes specified in subparagraph (A), (B), (C), or (D), whether or not guaranteed under this section, including, but not limited to, any short-term obligation incurred for the purposes of obtaining temporary funds for refinancing. Guarantees and commitments to guarantee may be made under this section without regard to section 3679(a) of the Revised Statutes of the United States (31 U.S.C. 665(a)).

(2) The full faith and credit of the United States is pledged to the payment of all guarantees made under this section with respect to both principal and interest, including any interest, if provided for in the guarantee, which may accrue between the date of default under a guaranteed obligation and the payment in full of the guarantee.

(3) Any guarantee, or commitment to guarantee, made by the Secretary under this section shall be conclusive evidence of the eligibility of the obligation for such guarantee, and the validity of any guarantee, or commitment of guarantee, so made shall be incontestable.

(4) The aggregate unpaid principal amount of all obligations guaranteed under this section and outstanding at any one time shall not exceed $500,000,000.

(b)(1) Obligations guaranteed under this section—

(A) shall have an obligor approved by the Secretary as being responsible and possessing the ability, experience, financial resources, and other qualifications necessary for the adequate operation and maintenance of the aquaculture facilities;

(B) shall be in an aggregate principal amount which does not exceed 87½ percent of the actual cost involved or the depreciated actual cost, as determined by the Secretary;

(C) shall have maturity dates satisfactory to the Secretary, but not to exceed 25 years;

(D) shall provide for payments by the obligor satisfactory to the Secretary; and

(E) shall bear interest (exclusive of charges for the guarantee and service charges, if any) at rates not to exceed such percentage per annum on the unpaid principal as the Secretary determines to be reasonable, taking into account the range of interest rates prevailing in the private market for similar loans and the risks assumed by the Secretary.

(2) In guaranteeing any obligation under this section, the Secretary shall give preference to any person with 40 or fewer employees which, together with its affiliates, is primarily engaged in the business of aquaculture or commercial fishing for aquatic species.

(3) No obligation shall be guaranteed under this section unless the obligor conveys or agrees to convey to the Secretary such security interest as the Secretary may require to reasonably protect the interests of the United States.

(c)(1) The Secretary may charge a fee for any obligation guaranteed under this section, the amount of which shall be established by the Secretary by regulation but which may not exceed one-half of 1 percent per annum of the outstanding principal balance of the obligation. Fee payments shall be made by the obligor to the Secretary when moneys are first advanced under a guaranteed obligation and at least 60 days before each anniversary date thereafter.

(2) The Secretary shall charge and collect from the obligor such amounts as he may deem reasonable for the investigation of the application for any guarantee, for the appraisal of properties offered as security for any guarantee, and for the inspection of such properties during construction, reconstruction, or reconditioning; except that such charges shall not aggregate more than one-half of 1 percent of the original principal amount of the obligation to be guaranteed.

(3) All fees and other amounts received by the Secretary under the provisions of this subsection shall be deposited in the Fund.

(4) Obligations guaranteed under this section, and agreements relating thereto, shall contain such other provisions with respect to the protection of the security interests of the United States (including acceleration and subrogation provisions and the issuance of notes by the obligor to the Secretary), liens and releases of liens, payments of taxes, and such other matters as the Secretary may prescribe.

(d)(1) In the event of a default, which has continued for 30 days, in any payment by the obligor of principal or interest due under any obligation guaranteed under this section, the obligee or his agent shall have the right to demand, at or before the expiration of such period as may be specified in the guarantee or related agreements, but not later than 90 days from the date of each default, payment by the Secretary of the unpaid principal amount of said obligation and of the unpaid interest thereon to the date of payment. Within such period as may be specified in the guarantee or related agreements, but not later than 30 days from the date of such demand, the Secretary shall promptly pay to the obligee or his agent the unpaid principal amount of the obligation and unpaid interest thereon to the date of payment; except that the Secretary shall not be required to make such payment if before the expiration of such period he finds that there was no default by the obligor in the payment of principal or interest or that such default has been remedied before any such demand.

(2) Payments required to be made by the Secretary under paragraph (1) shall be made by the Secretary from the Fund.

(3) In the event of any payment by the Secretary under paragraph (1), the Secretary shall have all rights in any security held by him relating to his guarantee of such obligations as are conferred upon him under any security agreement with the obligor. Notwithstanding any other provision of law relating to the acquisition, handling, or disposal of property by the United States, the Secretary may, under such terms and conditions as the Secretary prescribes or approves, complete, recondition, reconstruct, renovate, repair, maintain, operate, or sell any property acquired by him pursuant to a security agreement with the obligor.

(4) After any default referred to in paragraph (1), the Secretary shall take such action against the obligor or any other parties liable thereunder that, in his discretion, may be required to protect the interests of the United States. Any suit may be brought in the name of the United States or in the name of the obligee and the obligee shall make available to the United States all records and evidence necessary to prosecute any such suit. The Secretary may accept a conveyance of title to and possession of property from the obligor or other parties liable to the Secretary and may purchase the property for an amount not greater than the unpaid principal amount of such obligation and interest thereon. In the event the Secretary receives through the sale of property an amount of cash in excess of any payment made to an obligee under paragraph (1) and the expenses of collection of such amounts, he shall pay such excess to the obligor.

(5) Whoever, for the purpose of obtaining any loan or advance of credit from any person with the intent that an obligation relating to such loan or advance of credit shall be offered to or accepted by the Secretary to be guaranteed, or for the purpose of obtaining any extension or renewal of any loan, advance of credit, or mortgage relating to an obligation guaranteed by the Secretary, or the acceptance, release, or substitution of any security on such a loan, advance of credit, or for the purpose of influencing in any way the action of the Secretary under this section, makes, passes, utters, or publishes, or causes to be made, passed, uttered, or published any statement, knowing the same to be false, or alters, forges, or counterfeits, or causes or procures to be altered, forged, or counterfeited, any instrument, paper, or document, or utters, publishes, or passes as true, or causes to be uttered, published, or passed as true, any instrument, paper, or document, knowing it to have been altered, forged, or counterfeited, or willfully overvalues any security, asset, or income shall be punished by a fine of not more than $5,000, or by imprisonmrent for not more than 2 years, or both.

(e) The Secretary shall promulgate such rules and regulations as may be deemed necessary or appropriate to carry out the purposes and provisions of this section.

(f) For purposes of this section—

(1) The term "actual cost" of an aquaculture facility, as of any specified date, means the aggregate, as determined by the Secretary, of—

(A) all amounts paid by, or for the account of, the obligor with respect to such facility on or before that date; and

(B) all amounts which the obligor is then obligated to pay from time to time thereafter, for the construction, reconstruction, or reconditioning of such facility.

(2) The terms "construction", "reconstruction", or "reconditioning" include, but are not limited to, designing, inspecting, outfitting, and equipping of the aquaculture facility involved.

(3) The term "depreciated actual cost" means the actual cost depreciated on a straightline basis over the useful life of the property involved as determined by the Secretary.

(4) The term "obligation" means any note, bond, debenture, or other evidence of indebtedness issued for one of the purposes specified in subsection (a).

(5) The term "obligee" means the holder of any obligation.

(6) The term "obligor" means any person primarily liable for payment of the principal of or interest on any obligation.

SEC. 9. DISASTER LOANS.

(a)(1) The Secretary may make one or more loans from the Fund to any person if—

(A) an aquaculture facility, or stock of aquatic species at the facility, or both, that is owned by such person is damaged or destroyed as a result of a natural disaster; or

(B) the stock of aquatic species at an aquaculture facility owned by such person is damaged or destroyed by disease, pollution, or contamination (caused by reasons other than a natural disaster or the willful or negligent action of such person).

The purpose of any loan made by the Secretary under this section shall be to accomplish one or more of the following objectives:

(i) The repair, rehabilitation, or replacement of such facility.

(ii) The replacement of aquatic species stock.

(iii) To continue aquaculture operations while any such repair, rehabilitation, or replacement is in progress.

(iv) The purchase, construction, or reconstruction of an aquaculture facility at another location if the Secretary finds that—

(I) the damage to the facility is to extensive that its repair or rehabilitation is impracticable;

(II) the replacement of the destroyed facility at the same location is impracticable; or

(III) the pollution or contamination referred to in subparagraph (B) is likely to persist for such period of time that continued aquaculture operations at the same location are impracticable.

(v) To meet payments of principal and interest on any obligation of such person with respect to the facility or stock so damaged or destroyed for such period of time as the Secretary deems appropriate, taking into account the degree of such damage or destruction.

(vi) To retire in full any such obligation.

(2) No loan may be made under this section for any damage or destruction—

(A) which is fully compensated for by insurance (including insurance paid under section 10) or otherwise; or

(B) for which assistance is available under any other Federal disaster assistance program.

(b) Any loan made pursuant to this section shall—

(1) mature in not more than 20 years;

(2) bear interest at a rate not less than the rate determined by the Secretary of the Treasury taking into consideration the average market yield on outstanding Treasury obligations of comparable maturity;

(3) be approved only upon the furnishing of such security or other reasonable assurance of repayment as the Secretary may require; and

(4) be subject to such other terms and conditions as the Secretary may require to protect the interests of the United States.

(c) The Secretary may consent to the

modification of any term or condition of any loan made under this section, including, but not limited to, reduction of the rate of interest, deferment of any installment of principal or interest, or change in any security requirment.

(d) All payments of principal and interest on loans made under this section shall be deposited into the Fund.

(e) For purposes of this section, the term "obligation" means any note, bond, debenture, or other evidence of indebtedness issued for the purpose of financing (1) the construction, reconstruction, or reconditioning of an aquaculture facility, (2) the initial operating expenses of any such facility, and (3) the acquisition of stock of aquatic species for any such facility.

(f)(1) Whoever makes any statement knowing it to be false, or whoever willfully overvalues any security for the purpose of obtaining for himself or for any applicant and loan under this section, or extension thereof by renewal, deferment of action, or otherwise, or the acceptance, release, or substitution of security therefor, or for the purpose of influencing in any way the action of the Secretary under this section, or for the purpose of obtaining money, property, or anything of value under this section, shall be punished by a fine of not more than $5,000, or by imprisonment for not more than 2 years, or both.

(2) Whoever, with the intent to defraud, knowingly conceals, removes, disposes of, or converts to his own use or to that of another, any property mortgaged or pledged to, or held by, the Secretary pursuant to this section shall be punished by a fine of not more than $5,000, or by imprisonment for not more than 5 years, or both.

(g) No loan may be made by the Secretary under this section for any damage to, or destruction of, any aquaculture facility or stock of aquatic species which occurs on or after the close of the 5-year period beginning on the effective date of this Act.

SEC. 10. INSURANCE AGAINST CERTAIN LOSSES INCURRED IN AQUACULTURE FACILITY OPERATIONS.

(a) As used in this section, unless the context otherwise requires—

(1) The term "direct insurance" means any insurance described in paragraphs (2), (3), and (4).

(2) The term "essential liability insurance" means insurance against all sums which the owner of an aquaculture facility becomes legally obligated to pay as damages because of bodily injury or property damage caused by the aquaculture facility, the operation of such facility, or the aquatic species cultured at such facility.

(3) The term "essential property insurance" means insurance against direct loss of, or direct damage to, the real or personal property of an aquaculture facility caused by perils as they are defined and limited in standard fire policies and extended coverage endorsments thereon as approved by the State insurance authority, and insurance against loss of, or damage to, the real or personal property of an aquaculture facility from such perils as the Secretary by regulation shall specify, including, but not limited to vandalism, malicious mischief, burglary, and theft.

(4) The term "essential stock insurance" means insurance against loss of, or damage to, any aquatic species being cultured at an aquaculture facility due to unavoidable or natural causes, including, but not limited to, drought, pollution, hail, frost, wind, winterkill, freeze, lightning, fire, excessive rain, flood, snow, wildlife, hurricane, tornado, insect or parasite infestation, disease, and such other unavoidable or natural causes as the Secretary by regulation shall specify.

(5) The term "insurer" includes any insurance company or group of companies under common ownership which is authorized to engage in the insurance business under the laws of any State.

(6) The term "owner" means any person having an insurable interest in an aquaculture facility or aquatic species stock.

(7) The term "pool" means any pool or association of insurers in any State which is formed, associated, or otherwise created for the purpose of making insurance more readily available.

(8) The term "reasonable premium rate" means that premium rate determined by the Secretary, which would permit the purchase of any direct insurance coverage by a reasonably prudent person in similar circumstances with due regard to the costs and benefits involved.

(b) The Secretary may by regulation define any technical or trade term necessary in the administration of this section, insofar as any such definition is not inconsistent with the provisions of this section.

(c)(1) The Secretary shall conduct, within 6 months after the effective date of this Act, and annually thereafter, a study to determine whether direct insurance is generally available to owners at reasonable premium rates, through insurers, pools, or a suitable program adopted under State law.

(2)(A) If the Secretary finds, as a result of the study referred to in paragraph (1), that essential property insurance or essential liability insurance is not available at reasonable premium rates in any State and such insurance has not been provided by State action, the Secretary may establish a program to provide such insurance in such State, if the Secretary considers the issuance of such insurance necessary and appropriate to carry out the purposes and policy of this Act.

(B) Any essential property insurance or essential liability insurance issued by the Secretary under this paragraph shall be subject to such terms and conditions, and to such deductibles and other restrictions and limitations as the Secretary deems appropriate; except that the Secretary may not provide essential property insurance or essential liability insurance with respect to—

(i) any aquaculture facility or stock of aquatic species which the Secretary determines to be uninsurable due to the failure of the owner to follow established principles for operating aquaculture facilities or culturing aquatic species, as the case may be; or

(ii) any aquaculture facility which the Secretary determines to lack reasonable protective measures to prevent loss or damage.

(3)(A) If the Secretary finds, as a result of the study referred to in paragraph (1), that essential stock insurance is not available at reasonable premium rates in any State and that such insurance has not been provided by State action, the Secretary shall establish a program to provide such insurance in such State.

(B) Any essential stock insurance issued by the Secretary under this paragraph shall be subject to such terms and conditions and to such deductibles and other restrictions and limitations as the Secretary deems appropriate; except that the Secretary may not provide essential stock insurance with respect to any stock of aquatic species if the Secretary determines such stock to be uninsurable due to the failure of the owner to follow established principles for culturing aquatic species or due to the lack of reasonable protective measures at the aquaculture facility concerned to prevent the loss of, or damage to, the stock being cultured.

(d)(1) In determining the premium rate for any direct insurance offered from time to time under subsection (c) (2) or (3), the Secretary shall consult with persons knowledgeable and experienced in insurance, including, but not limited to, State insurance regulatory authorities, and may take into consideration with respect to the insurance concerned, the nature and degree of risk involved, the protective devices employed, the extent of past and anticipated losses, the prevailing rate for similar coverages, the economic importance of the insurance, and the relative abilities of the particular classes and types of insureds to pay the actual premium for such coverage.

(2)(A) The Secretary may not establish the premium rate for any direct insurance at less than 50 percent of the actual premium rate for such insurance.

(B) For purposes of subparagraph (A), the actual premium rate for any direct insurance offered under this section shall be determined as follows:

(i) If insurance of the same kind is generally offered by insurers or pools in the State concerned, the actual premium rate shall be that rate which the Secretary determines to be the median premium rate for all such insurance so offered.

(ii) If insurance of the same kind is not generally offered by insurers or pools in the State concerned, the actual premium rate shall be that rate which the Secretary determines to be the rate at which insurers or pools in such State would offer such insurance, taking into account actuarially sound principles applicable to the elements making up such rate, including, but not limited to, claim losses, general administrative expenses, acquisition expenses, taxes, license fees, and profits.

In making determinations under clauses (i) and (ii), the Secretary shall consult with the insurance regulatory authority of the State concerned and any rate advisory organization licensed by such State.

Nothing in this section shall be construed to prohibit or require either the adoption of uniform national rates or the periodic modification of the currently estimated reasonable premium rates for any particular coverage, class, State, or risk on the basis of additional information or actual loss experience

(e)(1) The Secretary may enter into any contract, agreement, treaty, or other arrangement with any insurer or pool to provide reinsurance coverage with respect to any direct insurance issued by such insurer or pool, in consideration of payment of such premiums, fees, or other charges by insurers or pools which the Secretary deems to be appropriate, after consultation with persons knowledgeable and experienced in insurance.

(2) Reinsurance issued under this subsection shall reimburse an insurer or pool for its total proved and approved claims for covered losses resulting from providing the direct insurance concerned during the term of the reinsurance contract, agreement, treaty, or other arrangement, over and above the amount of the insurer's or pool's retention of such losses, as provided in such reinsurance, contract, agreement, treaty, or other arrangement entered into under this section.

(3) Such contracts, agreements, treaties, or other arrangements may be made without regard to section 3679(a) of the Revised Statutes of the United States (31 U.S.C. 665 (a)), and shall include any terms and conditions which the Secretary deems necessary to carry out the purposes of this section. The premium rates and terms and conditions of such contracts, agreements, treaties, or other arrangements with an insurer or pool shall be uniform in any one year throughout the country.

(f)(1) All premiums received by the Secretary under this section shall be deposited into the Fund.

(2) The Secretary, in a suit brought in the appropriate United States district court, shall be entitled to recover from any owner, insurer, or pool the amount of any unpaid premium lawfully payable to the Secretary by such owner, insurer, or pool under any

direct insurance or reinsurance issued under this section.

(3) No action or proceeding shall be brought for the recovery of any premium due the Secretary, or for the recovery of any premium paid to the Secretary in excess of the amount due, unless such action or proceeding is commenced within 5 years after the right accrued for which the claim is made; except that, if the insurer has made or filed with the Secretary a false or fraudulent statement or other document with intent to evade, in whole or in part, the payment of premiums, the claim shall not be deemed to have accrued until its discovery by the Secretary.

(g) In order to provide for maximum efficiency in the administration of the insurance and reinsurance program provided under this section, and in order to facilitate the expeditious payment of any claims under such program, the Secretary may enter into contracts with any insurer, pool, or person, for the purpose of providing for the performance of any of the following functions:

(1) The estimation or determination of any amounts of payments for reinsurance or direct insurance claims.

(2) The receipt, disbursement, and accounting for funds in making payments for reinsurance and direct insurance claims.

(3) The auditing of the records of any insurer, pool, or person to the extent necessary to assure that proper payments are made.

(4) The establishment of the basis of liability for reinsurance or direct insurance payments, including the total amount of proved and approved claims which may be payable to any insurer, pool, or owner, and the total amount of premiums earned by any insurer or pool in the respective States from direct insurance or reinsurance.

(5) The provision of assistance in any manner provided for in the contract to further the purposes of this section.

(h) The Secretary may, with the consent of the agency concerned, accept and utilize, on a reimbursable basis, the officers, employees, services, facilities, and information of any Federal agency with respect to any insurance matter which is within the purview of this section.

(i) The Secretary may prescribe regulations establishing the general method or methods by which proved and approved claims for losses are paid under any direct insurance or reinsurance issued under this section. Proved and approved claims shall be paid from the Fund.

(j) The Secretary, in providing any direct insurance or reinsurance under this section may adjust and pay all claims for proved and approved losses covered by such insurance and, upon the disallowance by the Secretary, or upon the refusal of the claimant to accept the amount allowed upon any such claim, the claimant, within one year after the date of mailing of notice of disallowance or partial disallowance of the claim, may institute an action on such claim against the Secretary in the United States district court for the district in which the insured owner or reinsured insurer or pool resides or principally conducts business, and jurisdiction is hereby conferred upon such court to hear and determine such action without regard to the amount in controversy.

(k) The face amount of direct insurance and reinsurance coverage outstanding and in force at any one time under this section shall not exceed $1,000,000,000.

(l) No direct insurance or reinsurance may be issued by the Secretary under this section after the close of the 5-year period beginning on the effective date of this Act.

SEC. 11. FEDERAL AQUACULTURE ASSISTANCE FUND.

(a) There is established in the Treasury of the United States a Federal Aquaculture Assistance Fund. The Fund shall be available to the Secretary as a revolving fund for the purpose of carrying out, and administering, sections 8, 9, and 10. The Fund shall consist of—

(1) any sums appropriated to the Fund;

(2) any fees received by the Secretary in connection with any guarantee made under section 8;

(3) recoveries and receipts received by the Secretary under security, subrogation, and other rights and authorities under sections 8, 9, and 10;

(4) payments of principal and interest received by the Secretary under any loan made under section 9;

(5) premiums paid to, or recovered by, the Secretary for any direct insurance or reinsurance issued by the Secretary under section 10; and

(6) moneys deposited pursuant to the last sentence of subsection (b).

All payments made by the Secretary to carry out the provisions of sections 8, 9, and 10 (including reimbursements to other Government accounts) shall be paid from the Fund, only to the extent provided in appropriation Acts. Sums in the Fund which are not currently needed for the purposes of sections 8, 9, and 10 shall be kept on deposit or invested in obligations of, or guaranteed by, the United States.

(b) If at any time the moneys in the Fund are not sufficient to pay any amount the Secretary is obligated to pay under section 8(d)(1) or any direct insurance or reinsurance claim under section 10, the Secretary shall issue to the Secretary of the Treasury notes or other obligations (only to such extent and in such amounts as may be provided for in appropriation Acts) in such forms and denominations, bearing such maturities, and subject to such terms and conditions as the Secretary of the Treasury prescribes. Such notes or other obligations shall bear interest at a rate determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States of comparable maturities during the month preceding the issuance of such notes or other obligations. The Secretary of the Treasury shall purchase any notes and other obligations to be issued hereunder and for such purpose he may use as a public debt transaction the proceeds from the sale of any securities issued under the Second Liberty Bond Act, as amended, and the purposes for which securities may be issued under such Act, as amended, are extended to include any purchases of such notes and obligations. The Secretary of the Treasury at any time may sell any of the notes or other obligations acquired by him under this subsection. All redemptions, purchases, and sales by the Secretary of the Treasury of such notes or other obligations shall be treated as public debt transactions of the United States. Moneys borrowed under this subsection shall be deposited in the Fund and redemptions of such notes and obligations shall be made by the Secretary from the Fund.

SEC. 12. REPORT AND RECOMMENDATIONS.

Before the close of the 90th day after the close of the 3-year period beginning on the effective date of this Act, the Secretary shall review the operation and effectiveness of the disaster loan program provided for under section 9 and the insurance program provided for under section 10 and shall submit a report thereon to the Congress, together with the recommendation of the Secretary as to whether or not either such program should be continued and, if the Secretary recommends continuation, such suggestions as the Secretary may have for improving the operation and effectiveness of such program.

SEC. 13. AUTHORIZATION OF APPROPRIATIONS.

(a) For purposes of carrying out the provisions of this Act (other than sections 8, 9, or 10), there are authorized to be appropriated, notwithstanding any authorization for appropriations in any other Act in effect before the date of the enactment of this Act—

(1) to the Department of Commerce, not to exceed—

(A) $4,000,000 for the fiscal year 1979,

(B) $15,000,000 for the fiscal year 1980, and

(C) $17,000,000 for the fiscal year 1981;

(2) to the Department of the Interior, not to exceed—

(A) $2,000,000 for the fiscal year 1979,

(B) $7,500,000 for the fiscal year 1980, and

(C) $8,500,000 for the fiscal year 1981; and

(3) to the Department of Agriculture, not to exceed—

(A) $2,000,000 for the fiscal year 1979,

(B) $7,500,000 for the fiscal year 1980, and

(C) $8,500,000 for the fiscal year 1981.

(b) There are authorized to be appropriated, without fiscal year limitation, to the Fund such sums as may be necessary and appropriate for purposes of carrying out sections 8, 9, and 10; but not to exceed $500,000,000 for the purposes of section 8 and not to exceed $250,000,000 for the purposes of section 9.

SEC. 14. EFFECTIVE DATE.

This Act shall take effect October 1, 1978.●

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the bill introduced by Senator BARTLETT to develop aquaculture be referred jointly to the Committee on Commerce, Science, and Transportation and the Committee on Agriculture, Nutrition, and Forestry.

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

By Mr. BARTLETT:

S. 2763. A bill to amend the Employee Retirement Income Security Act of 1974, and the Internal Revenue Code of 1954 to improve the administration and fairness of provisions relating to employee benefit plans; to the Committee on Finance and the Committee on Human Resources, jointly, by unanimous consent.

EMPLOYEE RETIREMENT INCOME SECURITY AMENDMENTS

● Mr. BARTLETT. Mr. President, during the 93d Congress, the Employee Retirement Income Security Act was signed into law and heralded as a major innovation to protect workers from the loss of pension benefits. Since ERISA became law, we have all become aware of the "nightmare" of paperwork and cross interpretations that have been created. The obvious effect has been the ever-increasing number of businesses dropping their pension plans. These figures most graphically describe the chaotic effect of the legislation. Mr. President, I ask unanimous consent that a table be printed in the RECORD which reflects the number of pensions started and number of pensions terminated during the years 1970 through December of 1977.

This data is provided by the Internal Revenue Service and reflects the detrimental effects of what was purported to be one of the most beneficial pieces of legislation in recent years.

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

Retirement plan creations and terminations

Calendar year	Starts	Terminations
1970	32,570	2,306
1971	40,664	3,335
1972	49,335	3,550
1973	59,605	4,130
1974	59,919	4,604
1975	30,043	8,276
1976	25,821	15,859
1977	35,416	15,815

NOTE.—Corporate plans only, self-employed plans would add to totals.

Source: Internal Revenue Service.

Mr. BARTLETT. Mr. President, the obvious nature of the problem, and the comments I have received from Oklahomans, led me to request inputs from attorneys, certified public accounts, business people, and insurance agents for possible development as amendments. The result of these comments is the bill I am introducing today.

The bill addresses the more pervasive problems noted by the groups with which I consulted. It is introduced with the intention of easing the burden on business, but not jeopardizing the protection needed for the employee. The following is a brief description of each section, including its effect and the need for the particular amendment:

Section 1. This section raises the limit of plan assets that may be in one investment from 10 percent to 30 percent. A limit of 10 percent of plan assets in one investment may not create difficulties for a major national firm with a pension plan. However, a small employer who contributes from $3,000 to $5,000 a year to a plan finds it extremely difficult to find profitable investment opportunities for blocks of $300 to $500. The only alternative is to allow the plan assets to accumulate over several years until there is an adequate supply of money to make a reasonable investment.

Section 2. This section eliminates the requirement for payment of plan termination insurance to the Pension Benefit Guarantee Corporation for those plans funded entirely by insurance. The Pension Benefit Guarantee Corporation has no liability for insurer guaranteed benefits as the insurer provides the necessary guarantee. Payments of the premium to the Pension Benefit Guarantee Corporation for such fully insured persons is a waste of plan assets.

Section 3. This section authorizes the Secretary of the Treasury to issue a regulation under which insurance company deferred annuity contracts may be exempt from funding provisions. Employers who fund pension benefits through a deferred annuity contract are faced with a possible tax problem. The problem arises out of the requirement in the minimum funding standard and funding standard account provisions that experience credits to the plan be amortized over 15 years.

Under deferred annuity contracts, no turnover assumptions are made in setting premium rates. The reason for this is that the employer purchases individual annuities from the insurance company for benefits as they accrue. Zero turnover is the basis on which premium rates are set. When an employee for whom deferred annuity purchases have been made on a continuing basis terminates employment, his nonvested deferred annuities are cancelled.

The employer contributions released by the cancellation are reflected as a withdrawal credit. This withdrawal credit, according to IRS requirements, must be applied in full toward premiums next becoming due under the plan before any further employer contributions are so applied. Similarly, experienced credits declared by the insurance company because of favorable mortality, interest, and expense results, must be applied against the premium next becoming due.

The problem is that while the credits must be applied in one lump sum against premiums next becoming due, ERISA requires that the credit be amortized over 15 years for funding standard account purposes. Thus, only one-fifteenth of the credit may be applied in the year declared and each year thereafter to determine whether there is a funding standard account deficiency, and if so, how much has to be paid by the employer to abate the deficiency and avoid a deficiency tax assessment. The deduction for the 14/15 for tax purposes must be deferred until future years on a carryforward basis. This aggravates cash flow problems and creates an inappropriate tax result.

Section 4. This change provides that a plan which meets vesting requirements under section 411 of the act will be treated as meeting the requirements of section 401 unless there has been an actual pattern of abuse.

Section 411 has been interpreted to apply an additional rule of vesting if certain turnover tests are not met. These tests cannot be met by a vast majority of employers, and deleting this particular section permits plans to meet the minimum vesting standards under section 411.

Section 401(a)(4) provides that contributions or the benefit under the qualified plan cannot discriminate in favor of officers, shareholders, or highly compensated employees. With these requirements, there is no need for the additional, and somewhat different, requirement found in section 411(a)(1)(B). This section added the requirement that, "there have been, or there is reason to believe there will be, an accrual of benefits or forfeitures tending to discriminate in favor of employees who are officers, shareholders, or highly compensated."

Section 5. This section exempts plans with less than 100 participants from the notification to interested party requirements with respect to advance determination requests. Before an advance determination letter regarding the qualification of pension, profit-sharing, stock bonus plan, a trust which is part of a plan, or an annuity bond purchase plan may be issued, the applicant must provide evidence that each employee who qualifies as an interested party under the regulations has been notified of the application for such determination. All present employees of any employer qualify as interested parties, and if the plan amendment affects the contributions for, or benefits to, any former employee, all former employees who have a nonforfeitable right to an accrued benefit under the plan, are interested parties and must be notified.

The notice has proved of no practical use whatsoever to any employee. Not only is it of little use, it requires a great deal of ability and expertise to comment on whether or not the plan meets the requirements for qualification.

The cost of preparing and making the requisite notification properly with regard to plans covering a small number of employees has, in some instances, been equal to 10 percent of the cost of establishing the plan initially, or amending the plan.

Section 6. This language provides for the separate treatment of certain plans maintained by employers within multiemployer groups.

The existing code section, and regulations, effectively mean that all the substantive qualification requirements of the Internal Revenue Code are applied to a commonly controlled group to determine if any plan maintained by any of the entities within the group qualifies under the Internal Revenue Code. For example, if a subsidiary of a parent corporation, which meets the control tests, maintained an employee-benefit pension plan prior to ERISA which qualified on its own in relation to the subsidiary entity, then the plan, if it is to continue to be qualified under ERISA, must meet all the qualification requirements considering the entire controlled group as the relevant employee population. In effect, in order to continue the plan, the parent corporation is forced to either adopt a comparable plan or include all employees of the control group in the subsidiary corporation's plan. This requirement distorts the employee pension benefit plan concept in many instances. Termination of the "problem" plan is often easiest and the most beneficial alternative.

Contributing employers to multiemployer plans have potential liabilities over which they have no control, and such liabilities may arise even though the contributing employer fulfills the requirements of its agreement with the plan. When the Pension Benefit Guarantee Corporation provides benefits for a terminated plan, then an employer becomes liable to the PBGC for 100 percent of the unfunded liabilities in the terminated plan. The employer's liability may be up to 30 percent of the employer's total net worth.

Thus, voluntary termination of the plan could occur without the agreement or knowledge of the contributing employer, and consequently the contributing employer could become subject to the PBGC underfunded termination liability.

A contributing employer to a multiemployer plan who has funded his portion—based on his employees—correctly and adequately should not be liable to

the PBGC or any employee over which he had no direct control.

Section 7. This section exempts an insurance pooled separate account under a group annuity contract issued to a plan from the fiduciary or party in interest provisions of the act.

Regulation of insurance company operations by State authorities affords protection to a plan participating in the insuror's pooled separate accounts which are effectively like those a plan would enjoy in participating in a mutual fund through ownership of mutual fund shares.

The act already excludes mutual funds and the rationale behind this exclusion applies equally to insurance company pooled separate accounts. These accounts are regulated by a State insurance department, and are broadly held.

The existing provision makes operation extremely difficult because of the extra recordkeeping, clerical, and reporting needs of the various fiduciary responsibility requirements of ERISA. The net result is extreme cost.

If pooled separate account assets are considered plan assets, then a large number of transactions involving pooled separate accounts, which would be prohibited transactions under ERISA, could occur inadvertantly. For instance, a direct bond placement or mortgage loan might be made from a pooled separate account to an employer who, unknown to the insurance company, is a participant in the pooled separate account by virtue of being an affiliate of the insurer contract holder. Likewise, directly negotiated short-term lending by the insurer to a corporate obligor which, unknown to the insurer, participates in the separate account, could be a prohibitive transaction if the 25 to 50 percent of the assets test used in defining "marketable obligations" is not met when taking into account other such borrowing by the obligor from other sources of which the insurer has no knowledge.

There are numerous other such similar situations, but it is obvious to establish the necessary tests within the system would be financially prohibitive.●

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the bill introduced by Senator BARTLETT amending ERISA be referred jointly to the Committee on Finance and the Committee on Human Resources.

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

ADDITIONAL COSPONSORS

S. 258

At the request of Mr. RIBICOFF, the Senator from Minnesota (Mrs. HUMPHREY) was added as a cosponsor of S. 258, the Children and Youth Camp Safety Act.

S. 2323

At the request of Mr. PERCY, the Senator from Michigan (Mr. GRIFFIN) was added as a cosponsor to S. 2323, a bill to prevent illegal traffic in lost, stolen, forged, counterfeit, and fraudulent securities.

S. 2354

At the request of Mr. DOMENICI, the Senator from Delaware (Mr. BIDEN) was added as a cosponsor of S. 2354, the equal access to the courts bill.

S. 2732

At the request of Mr. PERCY, the Senator from Rhode Island (Mr. PELL) was added as a cosponsor of S. 2732, the Small Scale Energy Technology Programs Reorganization Act.

SENATE RESOLUTION 414

At the request of Mr. PERCY, the Senator from Minnesota (Mr. ANDERSON), the Senator from Hawaii (Mr. MATSUNAGA), the Senator from Arizona (Mr. DECONCINI), the Senator from Maine (Mr. HATHAWAY), the Senator from New Mexico (Mr. SCHMITT), and the Senator from Ohio (Mr. GLENN) were added as cosponsors of Senate Resolution 414, to study the feasibility of installing a solar energy system in the extension of the Dirksen Office Buildings.

SENATE CONCURRENT RESOLUTION 72

At the request of Mr. CASE, the Senator from Idaho (Mr. CHURCH), the Senator from Indiana (Mr. BAYH), the Senator from Missouri (Mr. DANFORTH), the Senator from Maine (Mr. HATHAWAY), and the Senator from Nebraska (Mr. ZORINSKY) were added as cosponsors of Senate Concurrent Resolution 72, regarding efforts to counter international terrorism.

AMENDMENT NO. 1702

At the request of Mr. PERCY, the Senator from Kentucky (Mr. FORD) was added as a cosponsor of amendment No. 1702 intended to be proposed to H.R. 7200, a bill to end welfare abuse by aliens.

NOTICES OF HEARINGS

DEPARTMENT OF EDUCATION HEARINGS

● Mr. RIBICOFF. Mr. President, the Committee on Governmental Affairs will resume consideration next week of S. 991 and related legislation to establish a separate, Cabinet-level Department of Education in the Federal Government.

The hearings will begin at 10 a.m. on Monday, March 20 and on Tuesday, March 21 in room 3302 of the Dirksen Building. There will not be a hearing on Wednesday, March 22, as previously announced. The administration is scheduled to present its views on the creation of the new Department to the committee on Friday, April 14.

Witnesses appearing before the committee include:

MONDAY, MARCH 20

Panel I

Ms. Barbara H. Kemp, President, A.F.G.E. Local 2607 (HEW Education Division).

Mr. Lawrence S. Zaglaniczny, Executive Director, Coalition of Independent College and University Students.

Mr. Joel Packer, Legislative Director, National Student Association/National Student Lobby.

Panel II—Child nutrition

Ms. Faith Gravenmier, Chairwoman, American School Food Service Association Legislative Committee.

Ms. Dorothy Van Egmond, Director of School Food Services, Fairfax County Public Schools.

Mrs. Dorothy L. Finch, Supervisor of Food Services, Granview, Washington School District.

Ms. Helen B. McGee, Nutrition Coordinator, Oklahoma State Department of Education.

TUESDAY, MARCH 21

Panel I—State and local representatives

The Honorable Frank Logue, Mayor, City of New Haven, Connecticut.

Dr. Joseph M. Cronin, Illinois State Superintendent of Education.

The Honorable Helen Wise, Member, Pennsylvania State House of Representatives.

A Representative of Education Commission of the States.

Panel II

Mr. Albert Shanker, President, American Federation of Teachers.

Monsignor Wilfred Paradis, Secretary, Department of Education, U.S. Catholic Conference.

Panel III—Higher education representatives

Mr. Charles Saunders, Director of Government Relations, American Council on Education.

Dr. Helena Howe, Board of Directors Chairwoman, American Association of Community and Junior Colleges.

Dr. James A. Norton, Ohio Board of Regents Chancellor, representing State Higher Education Executive Officers.

Dr. Elias Blake, Chairman, National Advisory Commission on Black Higher Education and President, Clark College.

Dr. Alfred Sumberg, Associate Secretary, American Association of University Professors.●

SUBCOMMITTEE ON ENERGY, NUCLEAR PROLIFERATION, AND FEDERAL SERVICES

● Mr. GLENN. Mr. President, I wish to announce that the Subcommittee on Energy, Nuclear Proliferation, and Federal Services of the Governmental Affairs Committee, has scheduled hearings on the issue of nuclear terrorism in conjunction with S. 2236, the Omnibus Antiterrorism Act of 1977. The hearings will be held on Wednesday, March 22, and Thursday, March 23 at 10 a.m. in room 4221 of the Dirksen Senate Office Building. For further information regarding the hearings, please contact the subcommittee staff at 224–2627.●

ADDITIONAL STATEMENTS

"WILDLIFE NEEDS YOU" IS THE THEME OF 40TH NATIONAL WILDLIFE WEEK

● Mr. RANDOLPH. Mr. President, President Carter has designated the week of March 19–25 as National Wildlife Week. This annual observance, initiated 40 years ago by President Roosevelt, provides Americans with the opportunity to reflect on and appreciate the value of our diverse and abundant wildlife in our daily lives. As chairman of the Committee on Environment and Public Works, which has jurisdiction over fish and wildlife legislation, I am acutely aware of the significance of this commemoration.

"Wildlife Needs You" is the theme for National Wildlife Week 1978 and is a thought which should be taken to heart by Members of the Senate. As national policymakers we have an impact on the Nation's fish and wildlife and other natural resources when we enact laws regu-

lating or otherwise influencing activities ranging from agriculture to energy development. Accordingly, we have an important responsibility and a unique opportunity to serve as stewards of this national treasure.

To effectively carry out this stewardship, we must educate ourselves regarding the needs of this resource and take positive action to promote and protect these needs. One very basic requirement of all plants and animals is habitat—the places where they not just survive but flourish. Indeed, destruction of habitat is the primary reason that over 170 species of native American fish and wildlife are faced with extinction today. The draining of wetlands for recreation and housing development; the need to provide greater domestic supplies of oil, gas, and other energy sources; and the use of imprudent agricultural techniques have all taken their toll on our natural world. Unless we reverse this trend by conducting these needed activities in a more intelligent, more environmentally sensitive manner, they may ultimately have a far greater effect on us. This realization has been at the very heart of the clean air, clean water, and other environmental protection legislation from the Environment and Public Works Committee over the years.

A second very basic need of fish and wildlife is management. In the days that our forefathers settled this country it might have been true that the best form of wildlife management was none. Over the last 200 years, however, we have drastically changed the face of this Nation so that, in many instances, husbandry by man is actually essential to the survival of a species. A good example is this year's National Wildlife Week "poster animal" the peregrin falcon. During the early 1960's this bird was nearly extinct in the United States as a result of eggshell thinning caused by the prevalence of DDT in the environment. Through research, captive breeding programs, and Government action severely limiting the use of the chemical, this species is beginning to make a comeback. While its situation is still critical, had it not been for the efforts of professional wildlife managers, the peregrine falcon might have well already gone the way of the passenger pigeon.

Congress can have a vital role in assuring the continuation of good wildlife management in this country by providing the experts at the Federal and State levels with the funds and basic statutory authority necessary to continue and enhance their work. This year our committee will act on several measures to improve the management of our Nation's fish and wildlife, including the Natural Diversity Act and the Federal Aid to Nongame Fish and Wildlife Act.

We are grateful for the guidance we have received in formulating these proposals from Federal and State conservation officials and members of national conservation organizations. Particular thanks is due the National Wildlife Federation and its State affiliates, which have sponsored National Wildlife Week 1978.

Mr. President, I emphasize that the theme for National Wildlife Week 1978 is "Wildlife Needs You." A more appropriate theme might actually be "We Need Wildlife." The protection of our plants and animals is not just an esthetic exercise to enable us to enjoy them in their native habitats. They are vital to the health and welfare of our people. Aldo Leopold made this point quite poignantly in the famous passage from his "Sands County Almanac" when, speaking of this legacy to his children, he said:

I hope to leave them good health, an education and possibly even a competence. But what are they going to do with these things if there be no more deer in the hills, and no more quail in the covets? No more snipe whistling in the meadow, and no more piping of widgeons and chatterings of teal as darkness covers the marshes . . . And when the day wind stirs through the ancient cottonwoods, and the gray light steals down from the hills over the old river sliding past its wide brown sandbars—what if there be no more goose music?

I hope we will all take a few minutes this week to reflect on the special significance of National Wildlife Week to us and our constituents. Furthermore, I hope that we will continue to work steadfastly to protect our irreplaceable fish and wildlife for generations of Americans to come.●

SMALL SCALE HYDROELECTRICITY

● Mr. PERCY. Mr. President, I am a strong advocate of rehabilitating small dams to produce electricity. I was most pleased to see a superb overview article by Lee Lescaze in the Washington Post on Saturday, March 11. In order to share Mr. Lescaze's observations with my colleagues, I ask unanimous consent that his article, "Little Dams Being Revived as Power Source," be printed in the RECORD.

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

LITTLE DAMS BEING REVIVED AS POWER SOURCE; BIG UTILITIES BALK

(By Lee Lescaze)

NEW YORK.—What may be the fastest-growing alternative energy source in the Northeast is one that is natural, renewable, non-polluting, native, and being resisted by some very large power companies. It's called water.

Henry Griffin of Collinsville, Conn., is working to restore a hydroelectric power plant that he helped chop up into scrap metal a dozen years ago.

In West Carthage, N.Y., Mary Jane Hirschey wants to generate power from her dam on the Black River that was producing electricity until 1963.

The 10,000 citizens of Springfield, Vt., have voted to spend $58 million to restore the generating capacity of six dams and to form a municipal power company and take over distribution from the investor-owned utility.

Water power built New England and made it prosperous. But over the last 60 years, the advent of cheap oil and gas and giant utility companies that had no use for small hydro projects killed off New England's small power station.

"Now we're returning to the river," says Vermont State Sen. Chester Scott, one of the backers of the Springfield project.

The 1973 oil embargo, quadrupled oil prices, two severe winters and depressing economic conditions in the Northeast have revived interest in small hydroelectric sites that would have been considered uneconomical 10 years ago.

The Department of Energy has earmarked $10 million for study and development of "low head" hydroelectric projects this year, and if the energy bill passes Congress it would provide $100 million a year for three years for renovation of existing dams. By the federal government's definition, low-head dams are those less than 64 feet high, with a production capacity less than 15 megawatts.

Some of the dams being looked at are as low as the four-foot one at Helen Winter's Grist Mill antique store at Farmington, Conn. It could light and heat only one building, while others could light a town.

"This is what created the industrial revolution in New England. We had sawmills, grist mills, every kind of factory—and they all ran on water," says Griffin.

New England and New York have many abandoned hydropower sites because they were settled early when water and wood were the only sources of power.

"These existing dams are pretty well confined to the original 13 colonies," Lawrence Falick of the Department of Energy said.

For years, utility companies concerned with vast power grids and with huge plants like the nuclear ones that produce 1,000 megawatts have scorned little dam sites as an obsolete technology.

Officials of all the northeastern state energy offices describe the large utility companies as less than enthusiastic about developing small hydroelectric projects—even ones that they own.

"They destroyed our dam so that there would be no competition from small sources," Griffin says bluntly. "I don't think the papers were signed a minute before they were in there cutting up the generators."

Griffin signed on for $50 to help the scrap metal company cut up the generators at the Collinsville dam after the Hartford electric company bought it. Now, as a member of the town conservation commission, he is seeking one of the Department of Energy grants to study the feasibility of reviving the dam.

Donham Crawford, president of the Edison Electric Institute, representing the nation's investor-owned utilities, denies that power companies oppose developing small sites.

"We have no desire to do anybody in," Crawford said. "We're all for hydro, but the question is whether it's economic or not."

Edison Electric represents about 200 companies that produce over 75 percent of the nation's electric power.

"It's my feeling that the large, investor-owned utilities will pay a lot of lip service to small hydro and basically fear it," said Bob Mauro, esergy research director of the American Public Power Association, which represents publicly owned companies.

The fear is that a community with a dam will divorce its power company and form a municipal utility, as Springfield is trying to do.

The Vermont community has spent more than $500,000 preparing its move, and part of the plan may be decided in court. In addition to activating the dam, the town wants to seize the distribution sytem now operated by the state's largest electric utility, Central Vermont Public Service Corp.

"We're going to sit down with them for what I call the waltz of the partridges," Sen. Scott said. "We'll flap our wings and see if there's anyone who can't stand to be in the room. I'm cautiously optimistic, but we've been disappointed by them before."

John Mullen of Central Vermont Public Service said, "We're not interested in having them take over our distribution system. It'll end in litigation." Central Vermont believes

that Springfield's engineering studies overstate the potential of its dams and that the town's project is headed for financial disaster, Mullen said.

Scott said Springfield was motivated by the worldwide shortage of energy:

"This energy bind is going to get worse, and the only resources we've got up here are water and wood. When the real crunch comes, we don't kid ourselves that tiny Vermont is going to be able to swing a very big axe in Washington. We better take care of ourselves."

Springfield shares a problem with many other places interested in developing hydroelectric power from existing dams.

"Some of us feel that we are victims of an unfair pricing structure," Scott said.

Typically, utilities buy power cheap and sell it dear. What they pay to anyone offering to feed power into their grid is the cost to them of throwing another shovel of coal on their fire, not the total cost of the power.

A man with excess power from a small dam might be offered half a cent per kilowatt hour by a utility that is paying larger suppliers five times that, according to Falick of DOE. At such prices, it doesn't pay the man to put his dam into production.

Similarly, a small businessman who wants to use electricity he generates most of the time but also wants to keep the local utility as a back-up finds that the utility will charge almost as much to stand by without selling him power as it bills him now for the power he uses.

Crawford explains that the utility has to maintain the equipment and capacity even if it isn't being used against the time the stand-by customer needs power and that the utility needs to be compensated for its trouble.

"I don't now of any solution, because it's a question of economics," he said.

In Collinsville, Conn., promoters of the dam hope to use the power to cut the town's $200,000 annual bill for street lighting and municipal buildings. Mary Jane Hirschey hopes her hydropower can be used by nearby industries or for a new community that could be built on Tannery Island, where the power plant is.

No one is certain what sort of agreement can be reached with utility companies.

Griffin believes that because of the world's energy shortage the courts are going to tell utilities, "Look, you've got to cooperate."

"All of us lawyers will be kept pretty busy," joked Alan Johnson of the Massachusetts energy office, in discussing the many issues likely to reach litigation in one place or another as low-head hydro develops.

At some places it is not clear who owns water rights or other rights. Elsewhere, questions arise whether a private individual selling power is thereby a utility and must be regulated by the government. The government is likely to have to consider whether it can say to utilities that it wants hydropower and therefore it wants utilities to buy such power at reasonable rates.

No one claims that low-head hydroelectric power is the answer to the energy crisis. The Army Corps of Engineers forecasts maximum potential from such sites at 26,000 megawatts, which would be the rough equivalent of 26 nuclear power plants.

But each dam is a very small fraction of the total. Hirschey's would produce 2 megawatts, for example.

According to a study by the federal Energy Regulatory Commission, 228 small hydro plants were abandoned in New England over the last 30 years. These presumably would be the easiest to bring back on line.

"I think small hydro definitely has arrived," said Richard McDonald of DOE.

No one knows exactly how many dams there are around the country, but 50,000 is a generally accepted guess. States like New York that take hydropower seriously are taking a census. Record keeping has been so sloppy that people have had to travel out to sites to see what sort of dam was there and whether it ever produced electric power.

Allis-Chalmers also believes small hydro has arrived. After 20 years of making small turbines and other parts only as replacements, the company has a new line of 10 standardized turbines ready for what general manager Goertz Pfafflin foresees as a strong demand. The much smaller Leffel Co. in Springfield, Ohio, is another U.S. manufacturer.

In addition to saving fuels, hydroelectric power has the potential to revive some New England towns that have fallen into decay, Susan Barney of the Connecticut energy office said. If old manufacturing and mill towns have a cheap local source of power, as they did when they flourished in the 1800s, they might attract new industries.

"Small hydro is an all-winning thing," said J. D. Brown, deputy executive director of the American Public Power Association. He said that a small dam might keep one industry open for a few extra weeks in a situation like the coal strike.

He would like to see the federal government go beyond its present support for restoration of existing dam sites and help fund construction of new dams.

"The government's been negative—at least cautious—about new hydro," Brown said. "They seem to be saying, 'It's a good thing but let's not let it happen any more.'" ●

THE MARINE CORPS MARATHON, 1977

● Mr. WILLIAMS. Mr. President, I would like to pay a belated, but well-deserved tribute today to the U.S. Marine Corps for staging the Second Annual Marine Corps Reserve Marathon here in the Nation's Capital last November. By noon that Sunday, November 6, more than 2,600 competitors had accepted the challenge of the traditional 26-mile, 385-yard course which wrapped its way around the city. While about 40 percent of the entrants were from the greater Washington metropolitan area, the field included representatives from 32 States, Canada, the United Kingdom, and Australia. This was by no means an event restricted to men in the military services—three out of four competitors had absolutely no connection with the service, and, it is important to note, 120 women chose to demonstrate their prowess in this grueling endurance contest. In fact, one of these woman athletes, 21-year-old Cindy Patton, a student at Boston University, finished the entire course in a wheel chair.

What is exciting and remarkable about this venture is that it has taken the Marine Corps just 2 short years to create a sports event which can now take its place among the premier marathons in this country. Indeed, the competition last November was the third largest ever held in the United States.

The Marines have once again rendered a genuinely worthwhile service to our Nation's Capital by organizing this magnificent marathon. Of course, it is extremely fitting that the Marines be involved in such activity, considering the military circumstances that gave rise to the original Marathon in 490 B.C. But today's marathon, far from being a military activity, is a true community happening.

The winner of the marathon was 27-year-old Kevin R. McDonald, of Columbia, S.C., who completed the course in 2 hours, 19 minutes, and 36 seconds. Second place went to Lt. Phil Camp, of Pensacola, Fla., who is a Navy helicopter pilot. Third went to Max White, of Alexandria, Va., a teacher at nearby Alexandria Episcopal High School. The British Royal Marines were represented in fourth place by Lt. B. C. Heath. Susan Mallory of Arlington, Va., who was first among the women competitors with a time of 2 hours, 54 minutes, and 12 seconds.

Mr. President, I am also proud to report that 28 youngsters, 15 years old and under, ran in the marathon as well. Ten-year-old Keith Griffler of Virginia Beach finished the course in 3:39:34, averaging just over 8½ minutes per mile, while 12-year-old Christian Moores of Augusta, Ga., finished in 3:35:35 and 13-year-old John Forehand of Rockville, Md., ran a blistering 3:07:27. It seems to me that the accomplishments of these young Americans bode well for our Nation's athletic performance in future international competitions.

In the short 2-year history of this event, Col. James L. Fowler, USMCR, who first initiated the marathon concept here in Washington, has been the race director. Colonel Fowler and his fellow Marines should be strongly commended for developing this great competition which seems to have already become a traditional part of the Washington autumn. I look forward to next year's race.

Mr. President, I ask unanimous consent that an article on the Marine Corps Marathon, which first appeared in the Marine Corps Gazette, be printed in the RECORD.

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

WITH A LITTLE MORE EFFORT YOU CAN RUN A MARATHON

(By Col. R. T. Lawrence)

Six November 1977 is the date for the Second Annual Marine Corps Reserve Marathon (held in the Washington, D.C.-Northern Virginia area), which got off to such a fine start last year with over 1,200 participants. Local AAU officials attribute much of the success of their marathoners at Boston on 18 April 1977 to the Marine Corps Reserve Marathon. It is certain to become a popular event for local runners and should be the Mecca for Marine marathoners all over the world, as is the Boston to international marathoners.

The purpose of this article is to encourage Marines to participate, who may think that 26 miles and 385 yards are beyond their capacity, while advising others who rashly enter the race without proper preparation to do some planning, coupled with training, in order to have a successful run.

There are several objectives in running a marathon. First is to finish the race. Second is to finish the race without being in a state of exhaustion. The third is to finish in the required time by age group or sex to qualify for the Boston Marathon. For men thirty-nine and below, the qualifying time was three hours this year. For men forty and above and all women, the qualifying time was three and one-half hours for the 1977 Boston.

The distance of 26 miles and 385 yards may either intimidate or be looked on as a snap by many of those uninitiated to the harsh demands of a marathon. For those Marines

who are jogging or running fifteen to thirty miles a week, be encouraged, because the gradual jump to the number of miles necessary a week to prepare for a marathon isn't that difficult to attain. For those rash Marines who feel that the thirty to forty miles a week they are running today will be sufficient to allow them to line up and run a marathon tomorrow, a word of warning. You may finish the marathon but it will be nearly impossible to do it within three or three and one-half hours, according to sex or age group. You will probably be sick for a week nursing yourself back to health, if you don't listen to your body and stop before you collapse.

The editors of Runner's World and their various Booklets of the Month or Runner's Book have published many articles to assist an individual to prepare for a marathon. Joe Henderson's "Training for the First One" in the February 1977 issue of Runner's World is a fine instruction which takes into consideration Henderson's "collapse point" theory. "The Runner Diet" is also well worth reading. These publications are readily available in local sporting goods stores or by mail order.

The following information is based on the practices by such experienced marathoners as Maj. Don Lynch, stationed at Headquarters, Marine Corps and George Marienthal, Deputy Assistant Secretary of Defense (Environment and Safety). Both of these seasoned marathoners have been very helpful to aspirant marathoners in the Washington, D.C. area.

In planning for your first marathon in particular, use the normal Marine Corps system of selecting D-Day or Marathon Day (M-Day), and back off nine weeks at a minimum or more, depending on the weakness of your running base, to start marathon training. You should be running seven days a week at a minimum of three to four miles a day, at a pace of seven minutes to no more than eight minutes a mile to begin marathon training. Until you reach that running base, you aren't really ready to start marathon training. Fortunately for most Marines intrigued with the aspiration to run a marathon, you are near to or already accomplishing the daily runs at the distance and rate necessary to start.

So your M-Day is 6 November 1977. The first week you back off is your taper down and special diet week just before the big race. The remaining eight weeks are used to build up the training effect of long, slow distance running. Your goal is to extend your collapse point to give you a comfortable cushion over the 26 miles 385 yards in order to account for various temperature/humidity mixes coupled with wind and road surface and grades that steal the marathoner's energy.

An essential training principle to follow is "train don't strain." Listen to your body. Don't let minor aches and pains deter you, but don't let them become aggravated so that they sideline you causing a setback in training or eliminating you from the race entirely. You may develop various aches, pains, blisters and lose toenails in training. And not all medical doctors are familiar with athletic injuries. A good podiatrist who runs for fun or health is a fine friend to have.

Don't be surprised by blood in the urine after prolonged long-distance training. Don't ignore the problems. Have a checkup so that you don't injure yourself. Don't overdo your training. Last-minute increases in distances can only injure without improving your performance. Stick to your training goal.

Warm up well before running with stretching exercises for the achilles tendon. Start off at a *slow* jog and gradually increase the pace. Vary it during the workout. Cool off gradually with more stretching exercises. A small investment will turn into a pair of million-dollar shoes. There are any number of suitable brands on the market. Make sure the shoes fit well.

It is important to run with one partner at a minimum to keep up the spirit when the training gets tough. There may be an experienced marathoner in your area who conducts regular marathon training runs and is happy to set the pace and explain the various methods used by world class runners that can be adopted by newcomers to the marathon. Join them and maintain normal conversation throughout the long, slow-distance runs. That helps keep you in the "train don't strain" window.

What is the collapse point? That's when you "run into the wall" or the "monkey jumps on your back." Your training base has been exhausted and so are you.

How is the collapse point calculated? Divide the total number of miles you run a week by seven to give you your average miles per day. Multiply that average distance by three and you have the "collapse point." There is an assumption here that you are stressing the system at a calculated controlled rate and are not just walking.

How far and how often do you have to run to prepare for a marathon? Eight weeks of running sixty-three miles a week at a seven-to-eight-minutes-a-mile pace will put your collapse point at twenty-seven miles. Ninety-one miles a week at the seven to eight minutes-a-mile pace will put your collapse point at thirty-nine miles. The first collapse point of twenty-seven miles don't give you much room to accommodate heat, cold, wind, loose surface, hills and excitement, but it should get you there in three hours, three minutes and thirty-three seconds (3:03:33) at a seven-minutes-a-mile pace and 3:29:45 at an eight-minutes-a-mile pace if you have been faithful to a seven-days-a-week schedule for eight weeks. The second collapse point of thirty-nine miles should give you a fine cushion for weather and course conditions while allowing you to expend more energy for a personal record in time and not just to finishing.

In the first collapse point of twenty-seven miles, averaging nine miles a day, seven days a week is relatively simple to fit into your work schedule. Averaging thirteen miles a day for the thirty-nine-mile collapse point takes some scheduling and sacrifices that involves you and your family or associates.

Running to and from work is a common solution for those running ninety miles a week or more. Two-a-day runs or seven to nine miles at least three times a week are less taxing on the impact points of feet, ankles, knees and hips while building the cardiovascular training effect in aerobic running you are seeking. Mixing the distances for variety and running less than marathon races of ten, fifteen and twenty miles conducted by local running clubs on weekends provides competitive situations under race conditions that are essential to gauge where you are in training and the race itself.

Table 1 indicates the last portion of six months marathon training that graduated from a sixty-three-mile-a-week average for a first marathon effort of 3:29:58 on 21 February 1977 to a ninety-mile-a-week average in preparation for the Virginia Beach Marathon effort of 3:27:06 on 19 March 1977, followed by the Boston effort of 3:21:28 on 18 April 1977.

TABLE 1.—PREPARATION FOR BOSTON MARATHON, APR. 18, 1977

[Male Marine: age—50; height—6' 2"; weight—174 lb]

Date	Duration	Miles
Feb. 23	1:05	9
Feb. 24	1:05	9
Feb. 25	1:07	9
Feb. 26	1:54	12.7
Feb. 27	0:53	7
Feb. 28 [1]	1:45	14
Mar. 1	1:07	9
Week average	1:16:6	9.9
Mar. 2 [1]	1:54	14
Mar. 3	1:07	9
Mar. 4	0:49	7
Mar. 5 [1]	1:42	14
Mar. 6	1:39.53	13.1
Mar. 7 [1]	1:45	14
Mar. 8	1:01	9
Week average	1:25:25	10.15
Mar. 9 [1]	1:56	16
Mar. 10	1:00	9
Mar. 11 [1]	1:58	16
Mar. 12	0:55	7
Mar. 13	2:12	17.75
Mar. 14 [1]	1:58	16
Mar. 15	1:01	9
Week average	1:34	12.95
Mar. 16	0:56	7
Mar. 17	Pack carbs	
Mar. 18	No training	
Mar. 19	3:27:06	26
Mar. 20	No training	
Mar. 21 [1]	2:07	16
Mar. 22	1:07	9
Week average	1:05	8.2
Mar. 23 [1]	2:05	16
Mar. 24	1:05	9
Mar. 25 [1]	2:01	16
Mar. 26	0:58	7
Mar. 27	2:06	17
Mar. 28 [1]	1:59	16
Mar. 29	1:04	9
Week average	1:37	12.8
Mar. 30 [1]	1:58	16
Mar. 31	1:07	9
Apr. 1 [1]	1:59	16
Apr. 2	0:58	7
Apr. 3 [2]	2:22	17
Apr. 4 [1]	1:59	16
Apr. 5	1:05	9
Week average	1:38	12.8
Apr. 6 [1]	2:04	16
Apr. 7	1:03	9
Apr. 8 [1]	1:56	16
Apr. 9 [1]	2:15	18
Apr. 10	1:12	9
Apr. 11	1:04	9
Apr. 12 [3]	0:49	7
Week average	1:29	12
Apr. 13 [3]	0:49	7
Apr. 14 [3]	0:52	7
Apr. 15	Pack carbs, no training	
Apr. 16	Pack carbs, no training	
Apr. 17	Pack carbs, no training	
Apr. 18 [2]	3:21:28	26
Week average	Not applicable	

[1] Split training session.
[2] Race.
[3] Protein diet.

Depending on your age, fifty in the case, it was not the smartest move to run the second marathon just one month before Boston. However, Joan L. Ullyot, the author of various marathon articles and a marathoner herself, has run two marathons on successive weekends while another, younger woman ran three marathons in fifteen days at a three-hour pace. Be that as it may, don't overdo it.

If the longest distance you run before a marathon is only twenty miles, how do you get the last six miles and 385 yards accomlished? The last portion comes from the aerobic training effect of long, slow distance running built up over a solid eight weeks of marathon training. Your pulse rate is probably down to fifty-six to forty-two beats a minute by that time. You are ready. Have confidence in your equipment. Your machine you have carefully tuned. It is all in your head from twenty miles on. Proper training will take care of the remaining six miles. Believe in it. It will be mind over matter.

Dieting to get the necessary energy from food is a must. Carbohydrates are the word. The rest of the family may get fat on pancakes for breakfast and spaghetti for supper for eight weeks, but you need it. Lose weight. Get well under the norm for your height in order to have a more efficient machine.

The prerace week diet following a long depletion run of eighteen to twenty miles one week before the race is a system used by many marathoners. It is not suited to all marathoners, but merits a test. Following the depletion run which may be done in two increments to save the feet, ankles, knees and hips, come three days of eating proteins: meat, eggs, fish, cottage cheese, cabbage, celery, lettuce, tomatoes and cheeses. Avoid fats. You will feel tired during your taper-off runs. Proteins make your body sugar-hungry in the muscles. Follow your three days of proteins with three days of packing carbohydrates: bread, pancakes, potatoes, beans, peas and spaghetti. Carbohydrates convert to glycogen stored in the muscle at a rate three to four times the normal.

Don't gorge yourself. Race day is runner's choice. Go to the starting line with a super load of stored glycogen but with body waste eliminated. Don't be caught by the proverbial turtle when you have to stop for an emergency comfort stop. The last three days before the race don't eat roughage or other food that might cause gas, cramps or diarrhea. Don't load up on honey just before the race. It may pull water into your stomach from the blood stream causing internal dehydration.

Proper diet must be accompanied by plenty of rest during the prolonged training period. Your social life may require modification.

Take water or special mixtures of fluids containing potassium and other minerals before, during and after the marathon in order to replace some of those burned out during the race. You won't always have a tail wind, downhill grade and temperature of fifty to fifty-five degrees. Avoid salt tablets. On hot days fluid intake is absolutely critical.

Wear a light-colored hat and shirt to reflect the sun's rays. Put ice under your hat frequently and carry it in your hands. Maintain your body temperature down by running through sprinklers. Try to maintain sweating. You will never make up all the liquids and chemicals you lose, but you won't enter exhaustion or shock either.

Drinking large amounts of liquid doesn't help. It can't be assimilated fast enough. It just sloshes back and forth in your stomach and makes you uncomfortable. The secret is to drink two to five ounces of fluid frequently. Pour what remains in the cup on your head, the key to your temperature control mechanism. This takes logistic support so a team effort is needed with pit stops for water, ice and special fluids along the way.

Logistics are more difficult on a point-to-point race as opposed to a repeating loop course. The race committee can only provide a few comfort and aid stations. They are adequate, but not ideal. It's up to you and your team to provide the extra support you need, depending on race conditions. Cold windy days also require protective clothing. Come prepared for all conditions. It's too late, if you guess wrong on the weather.

Marathon Day is Sunday, 6 November 1977. Your eight weeks of long, slow distance marathon training begins 4 September and ends 30 October. Your last long, slow distance run for depletion will be Sunday, 30 October 1977. That is followed by three days (31 Oct–2 Nov) of protein-eating to make the body sugar hungry, and then three days (3–5 Nov) of carbohydrate-packing with little or no training to build up a glycogen reserve in the body muscles of three to four times the normal.

If at this reading you have not reached a training base of three to four miles a day at a seven to eight minutes-a-mile pace seven days a week, you had best get started so you will be ready for marathon training and then the marathon itself.

You have the time. Put your Marine Corps training to good use and accomplish a goal that is one of the least attainable for the true amateur athlete: successfully completing a marathon in fine shape within the time requirements for your age and sex established for the Boston that draws international runners from around the world.

Don't be discouraged, however, if you don't make the qualifying times for Boston the first time you run a marathon. Use that race experience to build for the next one. You need not preoccupy yourself with the front runners who may be world class or nationally ranked marathoners. Remember your first objective is to finish the marathon, and, secondly, not to have collapsed with exhaustion. Your primary competition is yourself. After you . ave dominated the inner self that may want you to drop out or start out too fast, which burns you out in the long haul, then you will have plenty of company around you for your own marathon race.

By the way, there is no great material award for running a marathon. Even the winners of a marathon by age group and sex may receive no more than a symbolic laurel wreath. Your entrance fee pays for the cost of a tee shirt or patch commemorating the event, if that. The great reward is spiritual in the gratification of successfully participating in the marathon while sharing a grueling event with all the ordinary through world class marathoners who each carried their own weight 26 miles and 385 yards.

Make the Second Annual Marine Corps Reserve Marathon a happening where Marines show the way.●

LAWS FOR LAWMAKERS

● Mr. GARN. Mr. President, I am pleased to submit for inclusion in today's RECORD an enlightening and entertaining speech by one of America's foremost lawyers and scholars, Dallin H. Oaks, president of Brigham Young University and president of the American Association of Presidents of Independent Colleges and Universities. Dr. Oaks has distinguished himself as a scholar and leader, but his present activities are perhaps gaining for him an even more impressive reputation. These present activities are often directed toward reversing the powerful encroachments of the Federal Government into the private lives of American citizens and the affairs of private schools.

I think this country and this body are too little concerned with freedom. We appear determined to dominate and control every activity. We want to tax or regulate or legislate about every possible activity. We seek to level the social structure; diversity and private enterprise are enemies to be overcome. Independent, privately funded ventures, particularly it seems if they are motivated by moral or religious motivation, are brought under the most severe pressures to conform or collapse, and at this time the best evidence of this condition may be found among the private colleges and universities. They are fighting for their very independent existence. The Federal pressures are great; the goal is levelling, and if recent history provides any suggestion as to the outcome we must conclude that the levelling will be down rather than up.

This country has some serious education problems. I fear we will meet disaster if we destroy our private educational institutions, for it is these institutions that are providing sanctuary for educational excellence and moral strength. The levellers seek egalitarianism but we are getting a large measure of mediocrity.

We are blessed to have Dr. Oaks and others who so ably represent educational and personal freedom. I ask unanimous consent to have printed in the RECORD an excellent article by Dr. Oaks which was printed by another champion of freedom, Rockford College.

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

UNRULY LAWS FOR LAWMAKERS

(by Dallin H. Oaks)

One of the most important books of the Twentieth Century is *Parkinson's Law*, a 1957 publication of C. Northcote Parkinson, Raffles Professor of History at the University of Malaya. This book is important because it is wise and readable. It is wise because it applies good common sense to questions of public policy. It is readable because of its style: lively, brief, specific, and satirical. *Parkinson's Law* is so interesting that it slips right by the defenses most of us raise against any new insight that threatens our complacency or prejudice.

Parkinson's first law proclaims that "work expands so as to fill the time available for its completion." This first law has two axioms: (1) "An official wants to multiply subordinates, not rivals," and (2) "officials make work for each other."[1]

In 1960 Parkinson published another book containing his second law: "Expenditure rises to meet income." The preface declares that this book was intended to show "that a greatly reduced revenue would bring about an improvement, not a decline in the public services." Parkinson explains this astonishing conclusion as follows:

"It is the paradox of administration that fewer people have less to do and more time, therefore, in which to think about what they are doing. When funds are limitless, the only economy made is in thinking. The worse inefficiencies do not stem from a lack of funds but from an initial failure to decide exactly what the object is. It is this muddled thinking that leads to waste, and often to waste on a colossal scale. Toward eliminating public waste, an essential step is to limit the total revenue."[2]

Inspired by Parkinson's wisdom and by his knack of making his insights memorable, I have sought to apply similar insights to the process of lawmaking and to some current featues of government administration. I have thereby entered upon the formulation of what I have chosen to call Oaks' "Unruly Laws for Lawmakers." So far I have three laws or principles, a number of illustrations, and some asosciated hypotheses.

I. LAW EXPANDS

I evolved my first law or principle for lawmakers by posing variations on Parkinson's first two laws. Thus, if "work expands to fill the time available for its completion," as Parkinson's first law affirms, then this surely implies that as the staff of a department increases, the amount of work accomplished by the average staff member will diminish so that the total work accomplished by the department will not exceed what is necessary to complete its assignment. Similarly, if "expenditures rise to meet income," then it follows, as Parkinson himself explained, that

Footnotes at end of article.

the money bureaucrats save in one direction will surely be wasted in another.[3]

By this process—reasoning from variations on Parkinson—I arrived at my first principle of law-making: *Law expands in proportion to the resources available for its enforcement.* The expanding law referred to in this principle is not limited to the law in the statute books. It includes the regulations of administrative agencies, the rulings of regulatory bodies, and even the individual actions of government servants.

The first principle is verified by the common observation that a government's bureaucratic army is never demobilized. If a government agency is created or a government worker is employed to accomplish a task that is later accomplished, experience teaches that the public employment rolls will not be reduced. The bureaucratic army will be transferred to another front, and if there are insufficient conflicts to justify their continued mobilization, they will start some. When this happens, we realize that the agency's formal goal of giving the service desired by taxpayers and citizens has been displaced by the controlling goal of providing continued employment for the workers and a secure power base for the leaders.[4] All of this assures that law and government activity expand in proportion to the resources available for their enforcement.

The process is not easy to counter, since it seems to rise out of human nature. It exists in private as well as public employment. It is worse in government because government activities are not disciplined by the constraints of a competitive market place. If someone challenges the tendency to put personal goals ahead of public service in government employment, bureaucrats take up the same position as sheep or cattle in the presence of wolves, a position Parkinson described as a tight circle with horns outward and the weakest in the center, "yielding nothing, denying everything, concealing all."[5]

A distinguished British scholar showed this principle in operation in the behavior of what she called "civil servants and academics and all kinds of social experts whose livelihood and advancement depend upon a continuing supply of social problems and deprived citizens." Her study showed these social planners perplexed at the substantial number of deprived individuals who appeared to be unaware of their deprivation and unwilling to claim the social welfare benefits to which they were entitled under British law. As a result, "the government did what any businessman does when sales are flagging. It mounted an expensive advertising campaign begging people to use" their welfare benefits.[6]

When I first read that description I thought it farfetched. Imagine, government workers trying to multiply welfare expenditures! I accepted its accuracy a few months ago when I was exposed to an intensive advertising campaign on commercial radio stations in Salt Lake City urging qualified persons to use federal food stamps and lamenting the fact that this valuable benefit was being used by fewer people than the government planners had estimated. The effort to promote welfarism is surely a successful one. In the decade from 1965 to 1975 the number of participants in the food stamp program increased from 1 in 439 to 1 in 13, and public expenditures have soared from $36 million to 52 billion, 150 times its level 10 years earlier.[7] Truly if resources are available, law or government activity seem inevitable to expand to consume them. I conclude this reference to food stamps with a comment on welfare reform. The rash of proposals to reform our decrepit welfare system seem to confirm what Arthur Bloch has dubbed "Howe's Law: Every man has a scheme that will not work."[8]

Before introducing my second principle I will share three hypotheses I have formulated in connection with my work on the first principle. All are closely related to the matter of lawmaking and government resources, but none has yet been tested sufficiently to be put forward as a full-fledged law or principle.

The first hypothesis states that *the public is easily fooled by government claims of economizing.* Inefficiency is easy to conceal because governments have no competitors in the performance of their functions. The complexity of government also inhibits public understanding. As they say in the nation's capital: "If you're not confused, you're not well informed."

A clear leader can nearly always take public insistance on government economy and turn it to his own advantage. For example, most of us can recall some candidate for public office who has campaigned on a platform of reduced government spending and employment. Elected to office, such a politician may achieve reductions but the more likely outcome is further increase in public employment and spending. The conventional way to promote eocnomy in government is to hire experts to analyze the problems and recommend solutions, hire others to evaluate the suggestions, hire others to write regulations to implement them, hire others to supervise their enforcement, and hire others—public relations sepcialists—to praise the results and persuade the public of their success.

This is the way of most government econcmy drives. A government official makes himself a hero, and the people—both taxpayers and spectators—think they see a great improvement. In fact, there has been an increase in both government regulation and government employment. The process is endless, which brings to mind my favorite aphorism about pointless activity: "When you're doing nothing, you never know when you're through."

As a second hypothesis I suggest that *an uninformed lawmaker is more likely to produce a complicated law than a simple one.* This hypothesis is grounded in the same truth relied on by the man who apologized for writing a long letter and explained that if he had more time he would have written a shorter one. If lawmakers understand a problem and agree on their objective, they may be able to express themselves with an elegant simplicity that is sure to be absent if their lawmaking efforts thrash about in ignorance and discord.

My final hypothesis in this series is a variation of Gresham's law, the well-documented economic principle demonstrating that "bad money drives out good money." By the same token, I hypothesize that *bad or complicated law tends to drive out good judgment.*

One of the principal effects of the private foundation provisions of the Tax Reform Act of 1969 has been to require greater and greater reliance on lawyers in the administration of charitable giving.[9] As this portion of the tax law has increased in complexity and its legal boundary-lines have become less and less distinct, the area for the administrators of charitable funds to exercise their good judgment has diminished. More and more administrative questions must be submitted to lawyers. As lawyers have gained an effective veto power over larger and larger areas of charitable fund administration, these organizations are inevitably less flexible and less venturesome. The legal profession, whose doubts can only be satisfied by precedents, is rarely comfortable with innovation.

Bad laws—especially complicated bad laws—can also cause administrators to be so preoccupied with whether something is *legal* that they wholly neglect to consider whether it is *wise.* Some years ago I was asked to advise on a complicated reorganization of business activities. There were two objections to the proposed reorganization: it was unwise as a matter of business judgment, and it might bring unfavorable tax effects. Unfortunately, the responsible administrators became so preoccupied with the complexities and the challenges of the tax law that they came to see this as the only question. When they received a favorable tax ruling, they treated that victory as having satisfied all doubts. They rushed into a business reorganization they would never have considered if they had not let bad law displace good business judgment. The lesson to be drawn from this experience is that a task not worth doing at all is not worth doing well.[10]

II. SUPPLEMENTING BAD LAW

Oak's second principle or law for lawmakers is that a *bad law is more likely to be supplemented than repealed.* Our statute books contain many bad laws that have been supplemented, but very little evidence of any that have been repealed. The current popularity of so-called sunset laws, which would automatically extinguish government programs or agencies after a certain period of time unless they were deliberately renewed, is welcome evidence of public uneasiness with this situation.

For example, consider the minimum wage. Economists have told us for many years that minimum wage laws increase unemployment, especially among "workers on the lowest rung of the employment-ladder—the very young and old, minorities, and the handicapped."[11] An employer who will hire a marginal worker at $1.50 an hour, will not hire him at $2.65. The employer will try to economize by mechanization or other means, which will increase unemployment among many of the workers the minimum wage law purports to protect. But the favorable political effects of minimum wage laws generally prevail over their unfavorable economic effects.

Instead of being repealed, the bad minimum wage law is supplemented by unemployment and welfare legislation. One law puts the marginal employee out of work, and other laws support him in idleness. Or, the government seeks to offset the unemployment caused by minimum wage laws by increased government employment, as the administration advocated in recent hearings on proposed increases in the minimum wage.[12]

These offsetting laws are reminiscent of the well-meaning federal agency that sought bureaucratic approval to save space and clerical help by destroying outdated files. Permission was granted, but only on condition that the agency make one copy of everything before they destroyed it.

The tendency to supplement a bad law rather than to repeal it is also reminiscent of the two novice businessmen who established a roadside stand. They bought a load of melons from a farmer for $1.00 a melon, trucked them across the valley to their stand, and sold them, for $1.00 a melon. Then a second load was purchased at $1.00 apiece, trucked, and sold for the same. As the partners returned with their third load one observed, "you know, we're not making much

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Footnotes at end of article.

money in this business." Quickly agreeing and anxious to be helpful, his partner asked, "Do you think we need a bigger truck?"

Laws that were good in their origin and initial effect sometimes accumulate bad effects with the passage of time. But even outdated laws are seldom repealed. The City of Chicago has a ban on sidewalk cafes. At the turn of the century there was a reason for such a rule: Chicago had so many horses that their collective droppings—ground under foot, dried, and sent swirling by the city's famous winds—made outdoor food consumption a significant health hazard.[13] The horses are gone, but the ban remains, and its enforcement and supervision (and that of similar regulations) provides welcome employment—dare one say Daly employment?—for an army of patronage workers. Other rules become unreasonable as one zealous bureaucrat seeks to outdo another, like the storied pentagon executive who coined a security classification more secret than top secret: DBR—"Destroy Before Reading."

Many of you will remember Professor Martin Anderson's demonstration that the effect of urban renewal programs was not to improve the housing of the poor, but rather to pack them into living quarters that were frequently more expensive and less desirable than the slums from which the federal bulldozer had evicted them.[14] In the first 22 years of urban renewal, 1949 to 1971, the federal government spent approximately $11 billion to demolish 538,000 low-income housing units, but only 200,000 were replaced, and only half of these with low- or moderate-income units. The net result of this federal housing program was a *reduction* of about 400,000 low income units in this period, with resultant overcrowding and increased prices for low-income Americans.[15] The damage inflicted by the urban renewal laws during this period had to be remedied with a host of supplementary legislation.

Rent control provides another example. Everywhere it has been tried, the inevitable economic effect of controlling rents has been to inflate demand and diminish supply. Where rents are kept artificially low, consumers use relatively more housing than where housing is priced at a market rate in relation to other needs. At the same time, landlords are deterred from maintaining or renovating old housing and from building new housing because rent control prevents them from obtaining a market return on their investment. As a result, housing shortages and deterioration in the quality of housing always follow rent controls.[16]

I saw this in Sweden. After 30 years of Swedish rent control, the effects of their interference with the market are apparent. A Swedish law professor I met at a professional conference in Stockholm explained how he had just leased quarters for his 3-year-old son to use as a bachelor apartment when he enrolled at the university 15 years later. "Will you rent it in the meantime?" I asked him. "Oh no, I can't do that," he explained, "since our landlord-tenant law makes it virtually impossible to evict a tenant." "Fortunately," he continued, "our rent control keeps the rent so low I can afford to hold the apartment vacant for about 15 years just to have it available when my son needs it." Sweden has a bad housing shortage, as you would expect. But, as always, the needs of those who have close ties to the government bureaucrats are well met, and it is the common people who suffer under the government controls that purport to be for their benefit.

The operation of my second principle, that "a bad law is more likely to be supplemented than repealed," also explains the strong current trend toward socializing major segments of our economy. In brief, the trend works like this: First, a law or government program or agency interferes with the free market in a particular industry, justifying its interference by reference to some abuse or catastrophe like a depression. In time, this government interference with the market causes less efficient allocation of resources and more conditions that merit complaint by consumers. Soon, well-meaning reformers propose government assistance or regulation as the best remedy for ills in the industry. For example, when rent control produces a housing shortage, the government solution is public housing and other tax-supported competition with and regulation of the private housing industry. With government intervention come further difficulties until, in the end, the government proposes to take over the entire industry in order to save it. That sequence of events can be seen in various stages in many major industries in the United States today.

In this strange sequence, the government interference that made the industry sick is proposed in larger doses as the means of making it well again. By this means one bad law supplements another. I know of no instance where the original bad law has been remedied by repealing it and getting back to the free market that has been responsible, more than any other single cause, for the fact that Americans have traditionally enjoyed the greatest political freedom and the highest standard of living of any people in the world.

Government intervention in the market can also provide a pretext for government interference with individual freedom. Consider the example of health care. As long as an individual is primarily responsible for his or her own welfare, bearing the burden of any personal activities that are likely to increase its cost, such as smoking, overeating, reckless recreational activities, and the like, there is no basis for the government to restrict persons in the exercise of their individual choices. Individual high-risk activities impose no cost on other individuals, nor on the government. But once the government assumes responsibility for all health care in the society—as it is doing under the type of socialized medical care toward which we are moving—any high-risk individual activities automatically affect the cost of health care by the responsible government agency and by taxpayers generally. In that situation, anything an individual does to increase the risk and cost of his or her personal health care is of concern to others and provides a theoretical basis for government regulation. By this means government social welfare programs provide a rationale for more government interference with individual freedom.[17] Even in this way a bad law is more likely to be supplemented then repealed.

My reflections on this second principle have also produced a related hypothesis, which, although not fully tested, is offered here in a preliminary way, for whatever illumination it may afford. This hypothesis suggests a vital defect in a representative democracy that is increasingly relying on government by agency decree: elected lawmakers reserve credit and delegate blame.

Like many of us in our private activities, lawmakers tend to be specific about what is welcome, and vague about what is unwelcome. When a law is generally hailed as a great accomplishment, elected lawmakers are resolute about shouldering responsibility for the accomplishment. But the blame for bad laws is generally delegated to the bureaucrats who wrote the regulations. If a lawmaker gets a letter from a voter, he answers it; if he gets a complaint from a taxpayer, he refers it to an agency.

One of the most disturbing recent trends in lawmaking is Congress's tendency to pass vague pronouncements in favor of virtue or in opposition to sin. By this means Congress abdictates its responsibility to formulate specific laws, leaving that function to a regulatory agency. That is what the Congress did in outlawing sex discrimination in Title IX of the Education Amendments of 1972, giving the government regulators 36 words of general condemnation of sex discrimination, on which HEW's Title IX sex discrimination regulations erected approximately 36,000 words of specific prohibitions. For example, Congress was entirely silent on the amount or type of "federal financial assistance" that made private organizations subject to the Title IX regulations. The law on that vital subject was decreed in the regulations.

The same abuse is evident in the Rehabilitation Act of 1973, which contains five lines condemning discrimination against the handicapped, with no legal definition or legislative history to define the "handicapped" who were the subject of the law. The law was decreed in the voluminous regulations recently issued by an executive agency.

Martin H. Gerry, director of HEW's Office of Civil Rights and hardly a natural foe of the bureaucracy, described and criticized this process in these words: "As these 'sense of the Congress' statutes have replaced the more meaningful lawmaking activities which surrounded the passage of Title VI (of the Civil Rights Act of 1964), the real lawmaking activities which surrounded the passage of Title VI (of the Civil Rights Act of 1964), the real lawmaking requirements, of course, have been shifted to the department." He called this a serious problem in terms of the separation of powers."[18]

By writing relatively meaningless laws and effectively delegating the lawmaking function in this manner, an elected lawmaker can escape having to vote on hard questions like the definition of "handicapped," the exceptions to be made to a law outlawing age discrimination, or who shall be subject to a law outlawing sex discrimination. Those vital lawmaking decisions are left to bureaucrats who rule by decree, largely in secret, and without responsibility to the electorate. As for the elected lawmaker, he can claim credit for the good results, but use the Halls of Congress to disclaim responsibility and to condemn the bureaucrats for interpretations that prove bad or unpopular.

III. LEGISLATING NATURE

The third of my three laws for lawmakers is: *social legislation cannot repeal physical laws.* This deceptively simple principle cannot be taken for granted since so many persons apparently disbelieve it, or act as if they do. People are generally too susceptible to gimmicks like the energy conservation measure the dowager who only plugged in her electric clock when she wanted to know what time it was. When Congress passed the law establishing Daylight Savings Time, it changed the time when the sun came up and when the cows gave their milk. But we do well to remember that this law did not change the sun or the cows. It only changed the clock. This simple fact is not understood by persons who believe that social legislation can change physical laws. Thus, a friend told me that when Arizona was considering Daylight Savings Time, some citizens in his neighborhood in Phoenix signed a petition opposing Daylight Savings Time because the extra hour of sunshine would burn up their lawns.

Footnotes at end of article.

President Carter recently proposed what he called the Hospital Cost Containment Act of 1977. This law would, in effect, put a ceiling on the prices hospitals could charge their patients. It should therefore be titled the Hospital Revenue Limitation Act. But if one were determined to title it in terms of its effect on patients in some situations, it could just as well have been titled the "Hospital Quality Reduction Act." Assuming a well-managed hospital that is not in a monopoly position—a frequent but of course not invariable situation in today's health-care market—there is no way to limit the price hospitals can charge without reducing the quality of services they provide. If hospital prices are frozen or held below market levels, the only way hospitals can operate existing services and build facilities for new ones will be to use more and more government assistance. As noted earlier, the effect of such increased government assistance will ultimately be to destroy the private sector of hospital care in our society, giving government a monopoly on hospital ownership and management. That is the inevitable trend promoted by the so-called Hospital Cost Containment Act.

We don't need more sophisticated economics to understand these principles. Basic arithmetic and common sense will do. Sometimes we seem to make some of our most important political and economic decisions on the same primitive level as the Florida draft board that wrote a young man to explain why he has lost his student deferment and been classified 1–A: "To keep your deferment you must be ranked in the top two-thirds of your class, and you are only in the top one-fourth."

In the area of social welfare legislation, my third principle is clearly illustrated by reference to its primary corollary: Law cannot increase resources. Congress can pass a law freezing wages and prices or devaluing currency, but it cannot pass a law that will bring about an increase in the true gross national product of the nation. That is why the Great Society's "war on poverty" had to be a war on taxpayers as well. In this pair of wars it was inevitable, as Parkinson noted, that the war on taxpayers would be the easier war to win.[19]

Social planners cannot be reminded too often that an overall growth in the economy is a sounder means of abolishing poverty than a redistribution of capital or income. The sum total of all resources in the hands of the wealthiest fraction of taxpayers in this country would be insufficient to make any practical dent on poverty even if all of those resources were confiscated and given to the poor. British planners had to learn this lesson. After more than a generation of promoting the myth that you could tax the rich in order to provide social welfare benefits for the poor, the Labour Government conceded last year that this wouldn't work. Wealthy Britons already paid some of the highest taxes in the world, with marginal rates up to 83 percent on earned income and 98 percent on unearned income. If the deficit-ridden British government now confiscated all incomes in excess of $10,000 per year this would provide less than 1 percent of the government's current budget, an amount far less than its continuing deficit.[20]

The taxes necessary to support social welfare programs obviously have to come from the working middle class. But, as the working man's taxes go higher and higher, and as generally available social welfare payments get more and more generous, a worker has less and less incentive to work. Even the British Labour Government was brought to that conclusion. Denis Healey, Chancellor of the Exchequer, conceded during last year's financial crisis that British taxes had reached the point where they were "corroding the will to work." It made more sense for the average British worker to stay home and collect unemployment pay than to work and pay taxes.[21]

All the Acts of Congress, all the rhetoric of bureaucrats, and all the assurances of the Keynesian economists do not seem to make even a tiny modification in the laws of human nature and resource allocation on which the functioning of the market is based. There are social welfare legislative schemes that attempt to increase resources or to repeal physical laws, but typically all they produce is a bad side effect, like the pill that was supposed to make a middle-aged user look like a teenager again. It did: three doses and his face broke out.

And so I have given you my three laws or principles of lawmaking: (1) *Law expands in proportion to the resources available for its enforcement;* (2) *bad law is more likely to be supplemental than repealed;* and (3) *social legislation cannot repeal physical laws.*

In my exposition of these laws I obviously have made no effort to conceal my bias against lawmaking as the solution to every problem. I am not indifferent toward the abundant problems of our society, but only convinced that voluntary is always better than compelled—that the momentum of enlightened self-interest is always better than the compulsion of law. Inherent in our free enterprise system are the natural forces to correct most of its internal irregularities, although these correctives are sometimes slow and unpopular. But free enterprise has no corrective for excessive interference from government. It can only tolerate that interference and pass its cost along to consumers. In time, that cost can rise so high that our people may reject free enterprise because of grievances that should be charged to excessive government interference.

I hope that the love of freedom and the good sense of our people is sufficient for us to provide correctives for excessive government rather than to reject free enterprise. Only by the patient revolution of free enterprise can we be assured sufficient freedom and sufficient resources to find largely voluntary and permanent solutions to the problems that confront our society.

FOOTNOTES

[1] C. Northcote Parkinson, *Parkinson's Law* (Ballantine, 1957), pp. 15, 17.

[2] C. Northcote Parkinson, *The Law and the Profits* (Houghton Mifflin, 1960, p. 9.

[3] Parkinson, *The Law and The Profits*, p. 18.

[4] The process is analyzed, in Amitai Etzioni. *Modern Organizations* (Prentice-Hall, 1964), p. 10.

[5] Parkinson, *The Law and The Profits*, p. 18.

[6] Barbara Shenfield, *Myths of Social Policy* (Rockford College Press, 1975), p. 15.

[7] *Utah Taxpayer*, Sept./Oct. 1977, p. 3.

[8] Arthur Bloch, *Murphy's Law—and Other Reasons Why Things Go Wrong* (in press), referred to in *Deseret News*, Sept. 12, 1977. p. 1C.

[9] John Labovitz, "The Impact of the Private Foundation Provisions of the Tax Reform Act of 1969," *The Journal of Legal Studies* 3 (1974): 63, 78, 81.

[10] Suggested by Arthur Bloch, Note 8 *supra.*

[11] "The Cruel Cost of the Minimum Wage," *New York Times* (editorial), Aug 17, 1977, p. 30; "Professor Opposes Minimum Wage Law," *Deseret News*, Oct. 19, 1977, p. 10A (comments of Dr. Walter Williams, UPI story).

[12] "$2.65 Minimum Wage May Cut 90,000 Jobs," *Salt Lake Tribune*, July 29, 1977, p. 4A (UPI story).

[13] "Out in Front," *American Bar Association Journal* 63 (1977): 298.

[14] Martin Anderson, *The Federal Bulldozer* (M.I.T. Press, 1964), p. x.

[15] John C. Weicher, *Urban Renewal: National Program for Local Problems* (American Enterprise Institute for Public Policy Research, 1972), pp. 2, 6–7; Bruce L. Jaffe, "What Happened to Urban Renewal?" *Business Horizons*, Feb. 1977.

[16] Shenfield, *Myths of Social Policy*, p. 24.

[17] E. C. Pasour, Jr., "Victims of Reform Laws," *The Freeman*, April, 1977, pp. 207, 210.

[18] Martin H. Gerry, "Civil Rights Regulations—Hindsight and Foresight," in *Private Higher Education: The Job Ahead* 5:11–12 (American Association of Presidents of Independent Colleges and Universities, 1976 Annual Meeting Talks).

[19] Parkinson, *The Law and the Profits*, p. 48.

[20] *New York Times*, Feb. 20, 1976, p. 6; *Economist* (of London) Feb. 21, 1976, p. 69.

[21] *New York Times*, Feb. 20, 1976, p. 1; Feb. 21, 1976, p. 7.●

A TIME TO STOP

● Mr. McGOVERN. Mr. President, the Washington Post features an editorial page piece each day, entitled "For the Record." It usually represents a thoughtful observation by someone on current events or the state of our civilization. I find it a most interesting part of the paper.

Today's selection from J. Barnet's article, "A Time to Stop," which appeared in the March Sojourner, is especially provocative. I ask unanimous consent that it be printed in the RECORD.

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

[From the Washington Post, Mar. 17, 1978]

A TIME TO STOP

Humankind is entering a period of unique opportunity and unprecedented danger. The opportunity is the creation of a world community in which the basic economic, political and spiritual needs of every human being on earth can be met. For the first time the idea of a world community has become more than a philosopher's dream.

Statesmen, politicians, economists, indeed almost anyone who thinks about public policy, realizes that the nation-state cannot solve the fundamental political and economic problems facing humanity. No matter how many missiles a great nation amasses, it cannot defend its people. The Pentagon cannot defend the people of the United States if, despite the near certainty of its own destruction, the Soviet Union should decide to attack. The Soviet government cannot defend its vast territory either.

Neither can any nation build prosperity for its people behind the walls of its national frontiers. There is no longer such a thing as a U.S. economy. There is a U.S. branch of a world economy. . . . When unemployment, starvation, disease, war and political repression strike millions in Asia, Africa and Latin America, the consequences increasingly are felt here.

The reality of interconnections is forcing us to think beyond the religion of nationalism and to work toward political structures that are obedient to the biblical injunction that humanity is one. It is only in the last 20 years that the 2 billion or so persons living in the former colonial and dependent world have become subjects rather than objects of history. . . . ●

CHEMICAL WARFARE AND BIOLOGICAL DEFENSE RESEARCH PROGRAMS

● Mr. McINTYRE. Mr. President, Public Law 93–608 requires the Department of Defense to make an annual report on the funds obligated in the chemical warfare and biological defense research programs. I think it is useful to provide this information to the public so that it is available for scrutiny to all who have a concern for their Government's activities in this area.

The obligations for research for chemical warfare and biological defense amounted to $93.6 million in fiscal year 1977, an increase of $30 million over fiscal year 1976. Spending for the research and development in these areas is as follows:

Chemical warfare $36.6 million;

Biological defense research $15.9 million; and

Ordnance programs $12.5 million.

Unfortunately, we have not yet eliminated the potential for use of chemical and biological agents from our concept of war. However, we have shifted our emphasis toward providing adequate defense against their use, as opposed to preparing to use them ourselves. That should continue to be the thrust of our policy.

Mr. President, I ask unanimous consent to print in the RECORD the report on funds obligated for research for chemical warfare and biological defense.

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

THE SECRETARY OF DEFENSE,
Washington, D.C., February 4, 1978.

HON. WALTER F. MONDALE,
President of the Senate,
Washington, D.C.

DEAR MR. PRESIDENT: In accordance with the requirements of section 409, Public Law 91–121, as amended by section 2, (4) of Public Law 93–608, the report on funds obligated in the chemical warfare and biological defense research programs during fiscal year 1977 is enclosed.

The report provides actual obligations through 30 September 1977.

Section 4 of the Army report provides an adjustment summary which reflects change data to the second half, fiscal year 1976 report. This summary will permit the revision of estimated obligations to actual. The Departments of the Navy and Air Force reported no adjustments to their segments for the second half, fiscal year 1976 report.

The enclosed report has also been sent to the Speaker of the House of Representatives.

Sincerely,

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DEPARTMENT OF DEFENSE—ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAM OBLIGATIONS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, RCS DD-DR&E(SA) 1065 (ACTUAL DOLLARS)

	Army	Navy and Marine Corps	Air Force	Total
Chemical warfare program	$57,212,000	$1,284,000	$6,697,000	$65,193,000
R.D.T.E	(26,156,000)	(1,255,000)	(1,197,000)	(28,608,000)
Procurement	(31,056,000)	(29,000)	(5,500,000)	(36,585,000)
Biological research program	15,913,000	0	0	15,913,000
R.D.T.E	(15,913,000)	(C)	(0)	(15,913,000)
Procurement	(C)	(0)	(0)	(0)
Ordnance program	11,329,425	1,200,000	0	12,529,425
R.D.T.E	(5,976,000)	(0)	(0)	(5,976,000)
Procurement	(5,353,524)	(1,200,000)	(0)	(6,553,425)
Total program	84,454,425	2,484,000	6,697,000	93,635,425
R.D.T.E	(48,045,000)	(1,255,000)	(1,197,000)	(50,497,000)
Procurement	(36,409,425)	(1,229,000)	(5,500,000)	(43,138,425)

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065

[In conducting the research described in this report investigators adhered to the "Guide for Laboratory Animal Facilities and Care" as promulgated by the Committee on the Guide for Laboratory Animal Resources, National Academy of Sciences—National Research Council]

SEC. 1.—OBLIGATION REPORT ON CHEMICAL WARFARE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977

DEPARTMENT OF THE ARMY, RCS DD-D.R. & E. (SA) 1065

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1065

Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation	
	Prior year	In-house		
	Current fiscal year	Contract		
Chemical warfare program	1.061	20.593	During the fiscal year 1977, the Department of the Army obligated $26,156,000 for general research investigations, development and test of chemical warfare agents, weapons systems, and defensive equipment. Program areas of effort concerned with these obligations were as follows:	
	25.095	5.163	Chemical research:	
			Basic research	$801,000
			Exploratory development	5,682,000
			Total chemical research	6,483,000
			Lethal chemical program:	
			Exploratory development	1,281,000
			Advanced development	461,000
			Engineering development	59,000
			Testing	24,000
			Total lethal chemical	1,825,000
			Incapacitating chemical program:	
			Exploratory development	711,000
			Advanced development	120,000
			Engineering development	0
			Testing	0
			Total incapacitating chemical	831,000
			Defensive equipment program:	
			Exploratory development	9,457,000
			Advanced development	3,991,000
			Engineering development	2,255,000
			Testing	320,000
			Total defensive equipment	16,023,000
			Simulant test support	994,000

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 1.—OBLIGATION REPORT ON CHEMICAL WARFARE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977—Continued

DEPARTMENT OF THE ARMY, RCS DD-D.R. & E. (SA) 1065—Continued

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1065—Continued

Description of R.D.T. & E. effort	Funds obligated (millions of dollars)			Explanation of obligation
	Prior year	In-house		
	Current fiscal year	Contract		
1. Chemcal research	.212	5.915		
	6.271	.568		
(a) Basic research	(.000)	(.766)		
	(.801)	(.035)	Basic research in support of chemical materiel:	This basic research included, in the area of medical defense for chemical agents, studies on: Mechanism of action of refractory nerve agents, prophylaxis and therapy, skin protection, DNA repair in human cells and sites of action of incapacitating agents. CB defense research included work on ion-molecule reactions and enzyme induction for use in detection, quantitative structure activity relationship, and chemiluminescence kinetics. Basic research on chemical agents included studies on evaporation and dynamics of agent droplets. In the area of medical defense, the interaction of cyclic adenine methyl phosphonate (cAMP) with acetylcholine (ACh) level was determined. This provides a measure of anticholinesterace poisoning. In the area of chemical defense, it was demonstrated that the ionization detector for chemical agents can be made to respond to mustard (HD). These findings could materially aid in the de elopment of an advanced chemical agent alarm in response to a new joint service operational requirement (JSOR). Also in the defense area it was found that a chemiluminescence kinetics study pointed out the potential application of the XM19 biological alarm to the detection of chemical agents.
b. General chemical	(.212)	(5.149)	Exploratory development effort:	
	(5.470)	(.533)		1. Search for new co· pounds: The primary objecti es of this effort are to conduct initial screening studies in a search for improved leth l, incapacitating, riot ..ntrol, training agents, and simulants, and to determine analytical, chemical and physiochemic l properties of new and standard compounds. The chemical compounds subjected to initial toxicity screening originate from a variety of sources such as in-house research, friendly foreign countries, intelligence reports, industry, universities, medical institutions, and literature surveys. Research on analytical procedures is conducted on all known chemical agents, both domestic and foreign, and for detecting, identifying, and analyzing waste products from the demilitarization of toxic agents. Major accomplishments included the biological screening of 53 new therapeutic formulations for GD poisoning of which 3 showed primose; synthesis and evaluation of four chemical agents of interest from intelligence reports; completion of the investigation of chemical ion mass spectrometry (CI/MS) as a tool for identification of minute quantities of lethal agents; showed CI/MS to be superior to the electron impact mode of identifying V, G, and glycolate agents, their byproducts and intermediates and automated a test for potential respiratory irritants. A variety of initial toxicity studies were conducted on potential lethal, incapacitating and simulant agents; developed atomic absorption techniques for determination of organic arsenic in parts per million-billion, and demonstrated the feasibility of separating and identifying unknown materials in microgram quantities by combined gas chromatograph/infrared spectrometer. The data base being accumulated supports all technology areas in chemical defense, combat support and the design of chemical munitions. It represents the initial step in the determination of biological effectiveness of chemical compounds and is the 1st decision point as to whether chemical compounds have potential as a military agent or whether the compound should be dropped from further consideration. As the chemical compound advances in the exploratory development cycle other factors are considered such as analytical, chemical and physiochemical properties, stability, disseminability and producibility among others. 2. Techniques for evaluating effects of chemicals: Developed techniques to assess the behavioral effects of anticholinergic drugs in developing rodents. Determined that 5 and 10 mg/kg of the anticholinergic benactyzine reduced behavioral latency in adult and neonate rats as young as 5 days of age earlier than other studies reporting the onset of behavioral changes to anticholinergic drugs. Determined that behavioral data were consistent with development of spinal cholinergic system. Developed methods to assess brain and spinal cord cholinergic systems which can be applied in evaluating prophylaxis and treatment. Developed thin layer chromatographic method for identification and quantitation of impurities in the drug TMB-4. Developed an electrophoretic isoelectric focusing technique for separating isoenzymes of cholinesterase. Four isoenzymes have been identified in rat brain tissue. Initiated efforts to develop a rapid immunochemical field test for cholinesterase inhibition by organophosphorus agents. In evaluating a mechanism of organophosphorus agent inhibition, a spectrodensitometric method for measuring triphosphoinositides and diphosphoinositides in mouse brain was developed. 3. Medical effects of chemical agents: (a) Toxicity determinations and evaluations serve a multipurpose role. Chemical compounds are studied in animals to observe behavioral influences, effects on body systems and to estimate the toxicities for man. Data obtained are transmitted to a variety of sources both within the Department of Defense and to outside agencies. The information is used to evaluate medical and physical defensive posture; to obtain approval for use of chemicals in training, riot control or in quelling civil disturbances; to assist the munitions developer in concept studies and to provide those elements producing and/or handling hazardous materials, data to develop safety procedures. Major accomplishments include the acute and chronic evaluation of the chemical components of the M687 155 mm projectile, GB, binary munition; completion of the acute toxicological evaluation of the chemical components of the XM736, 8-in projectile, VX, binary munition and the initiation of chronic studies by all planned exposure routes except inhalation; the development of physiological techniques for evaluating respiratory and cardiovascular effects of chemical agents. The effects of single and repeated (13 weeks) exposures to red-phosphorus-butyl rubber was studied in mice, rats, and guinea pigs. The animals are being held for observation of chronic effects. A tumor sensitive strain of rats was exposed to GB vapors 5 days a week for 6 mo under controlled temperature conditions to study the presence or absence of testicular atrophy. Gross pathology on the exposed rats gave no evidence of testicular atrophy. (b) (1) Developed improved statistical methods to detect and evaluate mutagenic and chromosome damaging properties of chemical compounds. (2) Determined negative findings for 12 compounds and 2 mixtures being considered for use in prophylaxis and treatment of organophosphate poisoning. (3) Discovered that 5 of 10 dyes used by the United States, Canadians, and the United Kingdom had positive indications for mutagenicity on initial testing. Potent mutagenicity occurred with the B-1 dye, a component of the proposed XM 9 liquid agent detector. (4) Applied the signal detection theory to study pain in monkeys and found that the effective dose of diazepam, benactyzine, and scopolamine was equivalent to that which produces analgesia in humans. In previous studies using less sensitive measures of pain, the effective dose for monkeys was several times the human dose. 4. Chemical Dissemination & Dispersion Technology: The military effectiveness of a toxic chemical agent depends upon its toxicity, physical state and the system used to deliver it to the target. These factors dictate the optimal use of agents to produce casualties through the various routes of entry into the body systems; to contaminate terrain and/or equipment so as to restrict traversal or use; to harass personnel and force their survival in a toxic environment. Hence, the possession of a strong technological base for dispersion and dissemination is essential for evaluating the threat and the vulnerability of the armed services to chemical attack; for evaluating the efficacy of defensive countermeasures; to provide guidance for new and/or improved CW deterrent munitions and combat support systems; and to prevent technological surprise. Experimental studies were conducted to characterize the particle size distribution formed from centrifugally case liquid sheets, such as are produced by bulk liquid dissemination from spin-stabilized munitions. A predictive expression was established for Newtonian fluids and studies were begun to describe visco-elastic fluid breakup behavior. The characterization of liquid sheet breakup will be used to predict the performance of artillery projectile systems such as the XM736 8-in. VX, binary projectile. Two aspects of using agent-filled hollow fibers deployed on the ground to create extended duration terrain denial were

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation
	Prior year	In-house	
	Current fiscal year	Contract	
1. Chemical research—con			
(b) General chemical—con			studied; namely, (a) potential reduction in systems effectiveness due to agent extraction fr m the fibers caused by soil contact, and (b) the ability of the fibers to infiltrate a tracked vehicle traversing fiber-contaminated ground. Laboratory and contractual investigations are being directed at the use of imhibitive polymer beads for controlling the release rate and area coverage of volatile agents when disseminated from munitions. Fundamental studies of the dissemination characteristics of liquids at high agent-to-burster rations were conducted using a controlled, explosive projector/sampling technique. A program was initiated to experimentally establish dissemination criteria for solid materials for use in IR screening applications. 5. Chemical testing and assessment technology: (a) The proper control of physical characteristics (i.e., flow rate, temperature, etc.) of a jet engine chemical decontamination system determines the effectiveness of the system. Laboratory equipment and technology to evaluate these physical characteristics have been developed and tested. (b) The ability of thickened liquid agent drops to penetrate clothing influences the protective capability of clothing systems. Laboratory methods and equipment to evaluate penetration were developed and testing initiated. (c) The pickup and transfer of liquid agents from contaminated surfaces influences the ability to operate in a contaminated environment. Laboratory equipment and methods were developed and tested to evaluate pickup and transfer mechanisms and testing initiated. (d) Controlled dispensing of drops of thickened liquid has been a difficult but necessary part of small-scale testing in many development programs. A thickened liquid dispenser was developed and tested. (e) Test technology and apparatus to measure the internal vapor hazard for externally contaminated vehicles has been developed and tested. (f) Since the advent of restrictions on open-air release of chemical agents, the selection and use of simulants for agents have become increasingly important. An explosive projector has been modified and a test program initiated to select a simulant for the explosive dissemination of mustard and thickened mustard. (g) The addition of thickeners to agents influences the evaporative properties of these liquid agents. A contract, has been let to study the evaporation of thickened liquid drops from a number of different surfaces (cloth, metal, etc.). 6. Technical evaluation of foreign chemical warfare potential: A mathematical model to simulate the dissemination of chemical agents from missile warheads using aerodynamic liquid breakup has been developed. Test firings of representative systems were used to validate the model. A number of developmental detectors and alarms were tested during these validation firings. The resulting model was used in an evaluation of intelligence information. 7. Chemical training agents and equipment investigations: (a) Training and doctrine command (TRADOC) conducted an indepth study of requirements for training in defense against chemical warfare agent attack. The study addresses the need for realistic dissemination devices, proper use of alarms, detectors, protection, and decontamination procedures. (b) The search continues for training agents to meet the criteria established. Meanwhile, persistent and nonpersistent simulant agents were selected to fulfill an urgent requirement to field a dispersing device for simulants in fiscal year 1978 although these simulant agents do not fully meet the criteria desired. Because toxicity information on DMMPA (dimethyl morpholinophosphonate) was incomplete, emphasis was placed on n-butyl mercaptan, trioctyl phosphate (TOF) and polyethylene glycol 200. (c) Major accomplishments include the testing and evaluation of an allied produced Simulant Projectile Airburst Liquid (SPAL), the analysis of improved groundburst and airburst disseminators, the analysis of potential training agents against performance requirements and the preparation of a toxicological data package and approval by The Surgeon General of the Army on the three interim simulant training agents for use in the Chemical Agent Training Equipment System (CATES). (d) The SPAL testing and evaluation will provide a capability for training with an airburst disseminator in FY78. The approval of the interim simulant training agents will permit use in CATES provided several use precautions are incorporated in the training scenarios. The analysis of potential training agents is of longer term, requiring purification, stabilization, and carcinogenicity studies prior to approval. 8. Chemical safety investigations: (a) The objectives of this applied research program are to devise analytical and sampling methods for toxic agents and their residues in soil, water, and in products from demilitarization operations; measure and evaluate ecological effects of Chemical Systems Laboratory operations; and minimize risks and hazards associated with chamber and laboratory testing of toxic agents. (b) Major accomplishments include the publication of an ecological survey of Carroll Island (formerly toxic agent test site) and the successful development of an automatic analysis system for GB. Evaluation of techniques for high volume sampling of air and the elution of agents from solid adsorbents are continuing, as are laboratory evaluations of an automated assay system.
2. Lethal chemical program	.221	1.576	
	1.604	.249	
(a) Agent investigations	(—.002)	(1.258)	Prior year deobligation resulted from withdrawal of residual funds upon completion of effort.
	(1.283)	(.023)	
			Exploratory Development effort: 1. Lethal chemical agent investigations: New chemical intermediates for the EA-5365 binary synthesis were evaluated and stability studies conducted on neat and stabilized samples as well as mixtures of proposed intermediates. A study was conducted on estimated costs to manufacture the EA-5365 intermediates in production quantities. Both insoluble and soluble polymers were assessed via laboratory and field dissemination tests with simulants. 2. Lethal chemical weapons technology: (a) Physical properties of several binary constituents for an intermediate volatility lethal agent were measured including viscosity, flash point, surface tension, and density. A storage stability study was initiated on the same chemicals which showed varying degrees of degradation after 7 months storage at 71¼ C. Several new compounds were preparod and evaluated as possible intermediate volatility agent binary constituents. Reaction temperatures and agent yields for various mixtures of intermediate volatility agent binary constituents were determined. Exploratory development support was provided for the XM-736 VX-2, 8-in projectile for investigation of binary VX reaction. Additives were investigated for reducing the reaction pressure and contents of gases from the binary VX reaction were analyzed revealing the presence of methane, ethylene, and ethane. The auto ignition temperatures of the chemical components of the binary VX system were also measured. Efforts were completed on evaluation of a thickener for binery VX to enhance the efficiency of agent dissemination. (b) A preliminary design of a binary chemical agent system was evolved that is applicable to both the 130 mm/8-in and 155 mm 8-in extended range projectiles. Designs were also prepared of a binary intermediate volatility agent system for the 155 mm projectile and dynamic firings conducted with simulants to evaluate the dissemination characteristics of the liquid payload. Concepts for low-level dissemination of liquid filled 155 mm projectiles were evaluated. Design concepts for application of the binary system to lightweight mobile systems were evolved and tests conducted to assess projectile ballistic dynamic stability for various quantities of liquid fills and mixing characteristics using the 81 mm mortar as a test vehicle. An analytical model and computer logic were developed to refine predictions of chemical agent casualties including the burden imposed by protective requirements.

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars) Prior year	In-house Current fiscal year	Contract	Explanation of obligation
				(c) 2 binary lethal agent rocket warhead concepts, one with dual canisters and the other utilizing a pressurized injector, were designed, fabricated, and dynamically evaluated—2 short-term contracts to further evaluate these concepts were let.
				3. Chemical agent process technology: The investigation of alternative syntheses for a VX binary process material was completed and a process was recommended for further development. Kilogram quantities of candidate IVA binary reactants, including EA-5615, EA-5636, and RA, were prepared for system evaluation. Preparation of other candidates continued at end of period. A study of process and equipment problems was made to assess large-scale system production costs, and provide a basis for direction of process scale-up investigations with respect to material recycles and waste disposal problems. Materials were purchased for scale-up process studies of the EA-4923 system but work was deferred due to priority realinement. Analytical support was provided for all operations noted above.
(b) Ageny pilot plant investigations.	(.000)	(.224)	(.224)	Advanced development effort:
	(.224)	(.000)	(.000)	Lethal chemical ageny processes:
				(a) Pilot scale NM runs (100-gal reactor) are being processed to secure material for the 8-in binary development program and to check out the parameters established on the small pilot scale runs. Incineration is currently being studied as a method of waste disposal for all aqueous waste products and intermediates. Ventilation pollution control methods are being studied during the filling operation of the NM canisters.
				(b) Inertia welder and filling equipment for the XM736 projectiles was used to fill and close DT II quantities of XM27 and XM28 canisters. XM736 projectiles were assembled and packed in support of the R. & D. program and DT II testing. Engineering support was furnished to the R.& D. program for fill, close, load, assemble and pack of XM736 projectiles with XM27 and XM28 canister components. The helium insertion and retention study for M20 and M21 canister components for 155mm M687 projectile was completed and final report published.
c. Tactical weapons systems.	(.164)	(.073)	(.073)	Advanced development effort:
	(.073)	(.164)	(.164)	Lethal chemical materiel:
				Development of a binary warhead concept for a rocket system was continued and a successful concept feasibility demonstration flight test was conducted. Design concepts for a follow-on prototype were initiated using the demonstrated technique. Shop drawings were prepared and materials purchased for a full scale dynamic simulant test. A system logistic contract was implemented whereby concepts were provided for handling, storage, packaging, and assembly of the binary rocket. Contractual effort was initiated to study problems of large scale fluid mechanics and for the design of a multiple submunition system.
	(.059)	(−.003)		Engineering development effort:
	(.000)	(.062)		Lethal chemical ground munitions:
				(a) Based on the successful results of development II (DT II) and operational test (OT II) of the XM687E1, GB2, 155mm projectile, the development acceptance in-process (DEVA IPR) was convened. Agreement was reached among the DEVA IPR participants that the projectile was satisfactory for U.S. Army use. Minutes of the DEVA IPR were approved resulting in type classification of the projectile as M687 and the technical data package was finalized to support any future decision for procurement of M687 projectiles.
				(b) A special review was conducted at which the XM736, VX-2, 8-inch projectile was authorized to proceed into the POT-G phase of development test II. Most of the required hardware has been completed and the firing tables and dissemination test phases have been initiated.
(d) Materiel tests in support of joint operational plans and/or service requirement.	(.000)	(.000)	(.000)	No effort expended in this area.
	(.000)	(.000)		
(e) Army materiel development tests.	(.000	(.024)	(.024)	Efforts were directed toward the testing of binary weapon systems. 5 specific test programs were in progress during this report period. Major emphasis was on the testing of the projectile, 8-in, XM736. Engineering design tests with the 8-in projectile were conducted in the area of functional reliability, metal parts integrity, fuze performance and simulant dissemination. 6 dissemination trials were conducted to obtain data on droplet spectra, liquid recovery estimates and area coverage for the simulant of choice. Engineering design testing is essentially completed. Planning for the DT II testing of the XM736 has been completed and testing has been initiated. 2 of 34 scheduled simulant dissemination trials have been conducted to date. 120 of a total of 900 projectiles have been fired to provide data which will be used to produce firing tables. Testing in the area of safety, storage, and transportation, reliability evaluation, adverse environments, chemical simulant dissemination, hazards, soldier evaluation and maintenance evaluation will continue. In addition to the 8-in projectile testing, Dugway conducted 2 dissemination trials with the projectile, 155mm, binary, IVA to determine droplet spectra for a nonvolatile reaction simulant and to obtain area coverage data. Test efforts with the 8-in projectile will continue in fiscal year 1978.
	(.024)	(.000)		
3. Incapacitating chemical program..	.000	.719		
	.831	.112		
(a) Agent investigations and weapon concepts	(.000)	(.599)		Exploratory development effort:
	(.711)	(.112)		
				1. Incapacitating chemical agent investigations:
				The objectives of this research investigation are to evolve incapacitating chemical agents, to study techniques for their dissemination and to establish the feasibility of munition devices for their delivery. Because of the restrictions in testing potential incapacitating agents in man, major emphasis was placed on a review of incapacitants previously tested in volunteers. This review was to select an improved chemical incapacitating agent that causes physical incapacitation through both respiratory and percutaneous routes of entry into body systems, and to develop specific methods for its dissemination so that incapacitating agent munitions can be developed to meet military requirements.
				Significant accomplishments included the preparation of 7 technical reports documenting efforts on a binary reaction for an incapacitating agent, agent sampling devices, and mass spectral studies of potential incapacitating agents. 2 classes of compounds of interest as potential incapacitants were identified and laboratory studies initiated to develop a technology base. Laboratory and field tests were conducted to provide input to the analysis.
				The system analysis study will have a major impact on future Army requirements for incapacitating agent systems. One approach to an improved incapacitant is the mixture of a volatile irritant with a glycolate compound. Initial toxicity screening tests with this mixture are in process using laboratory animals.
				2. Incapacitating chemical weapons technology:
				2 contracts, one dealing with submunition design technology and the other with munitions safety for pyromix munitions were prepared and are scheduled to be let by the end of fiscal year 1977.
				A systems analysis study was initiated to examine proposed incapacitating agent munitions systems offering percutaneous possibilities to help determine the feasibility of such systems.
				Field tests have been initiated to study 2 modes of dissemination of percutaneously effective incapacitating agent solutions explosive and aerodynamic stripping. In the explosive test program a field grid has been constructed, test devices have been fired, and droplet impact cards have been collected for instrumental analysis to determine droplet particle size distributions. Parameters being tested are munition shape, agent to burster ratio liquid viscosity, and length-to-diameter ratio. Significant shifts in particle size distributions as a function of liquid viscosity have been observed. Data is still being reduced. Aerodynamic stripping tests are in extremely early stages and consist of testing equipment designed to insure proper functioning of the test device.

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation
	Prior year / Current fiscal year	In-house / Contract	
3. (b) (b) Agent pilot plant investigations.	(.000) / (.120)	(.120) / (.000)	Advanced development effort: Incapacitating chemical agent processes: (a) The 2 main waste streams produced in the preparation of the incapacitating agent EA-3834A, were simulated without agent contamination. The waste streams were investigated for the feasibility of intermediate recovery, recycling, and volume reduction before detoxification. Detoxification of the simulant waste streams were investigated by incineration and chemical neutralization. (b) A fill and close facility has been established for the 66 mm, XM-96, Rocket Warhead. Engineering support is being furnished for the fill and close of this item. Surplus equipment no longer needed in support of incapacitating program has been cleaned, decontaminated, and prepared for turn-in. Investigation into characteristics of microelectronic, intrinsically safe control systems for fill, close, load, assembly, and pack operations was initiated.
4. Defense equipment program	.438	11.789	
	15.585	4.234	
(a) Physical protection investigations.	(.206)	(3.384)	Exploratory development effort: 1. Chemical agent alarm technology: (a) Parallel studies continued on the ionization detector and enzyme alarm to satisfy the joint service operational requirement (JSOR) for an advanced chemical agent detector alarm (ACADA). The Ionization detector proved feasible as a nerve agent detector. A product improvement program that will save the Government $30,000,000 in 10 yrs was initiated to replace the M-43 sensor of the chemical agent alarm (CAA) with this system. Modifications to the enzyme alarm system have reduced interference responses and new approaches to enzyme immobilization appear to be successful. System analysis studies of the automatic liquid agent detector verified its capability to reduce casualties beyond that of presently planned systems. Field trials were conducted on an allied signaling cartridge as a possible candidate for chemical attack warning system (CAWTS). Action was initiated for the establishment of a development program for a warning cartridge. A nerve agent alarm capable of meeting the stringent Surgeon General requirement for demilitarization operations has been fielded. The effort was funded by the chemical demilitarization program, but is a technology transfer from point sampling studies. (b) The theoretical feasibility of the CO_2 Laser remote sensing technique for the detection of chemical agents was validated. The CO_2 laser system was modified for improved data processing and field measurements were initiated. A study was completed on spectral selection techniques for remote sensing alarms—4 techniques were appraised: inspection correlation, linear programing, and factor analysis. No individual technique was completely adequate, but each did contribute to some aspect of the problem. (c) Studies were concentrated upon obtaining a detector for VX munitions. A dry reagent system, bromophenol blue (BPB), on a lucite plug, gave excellent response and color change to trace vapors above VX liquid. Since BPB is a pH indicator, it is predicated that response is primarily due to low concentrations of amine vapors arising from the decomposition of VX. Glass fiber paper is affixed to a lucite plug which can be threaded into the openings of a shell or munition container. The color of the impregnated paper can be seen by shining a light into the end of the plug. Storage and sensitivity data indicate that BPB is stable for a reasonable length of time.
	(4.487)	(1.309)	2. Chemical detection and identification technology: (a) The accumulation of knowledge for improving chemical agent alarms and detectors is closely allied with information gathered from intelligence sources, friendly foreign countries and in-house research on toxicological compounds that are lethal or produce incapacitation. The objective is to evolve new chemical reactions, principles, and physical, chemical, or biochemical concepts as inputs leading to the development of chemical agent detectors and alarms. The items sought are kits with increased sensitivity and ease of manipulation with decreased logistical burden for the detection of chemical agents in air, in water, and on surfaces; individual detectors for the soldier operating in a contaminated environment; contamination surveillance devices to assess the hazards in traversing or occupying a location and field laboratories to provide rapid means of identifidation of toxic chemical agents. Major accomplishments included: An investigation of the feasibility of using an effervescent technique to evolve toxic agents from water and detect them as vapors, which showed promising results; and investigation of the physical principles to be used in detector kits and the identification of 2 promising approaches; and the initiation of a study of nonmutagenic dyes for detection of liquid chemical agents. Investigations on the differentiation of refractory from nonrefractory nerve agents were terminated after effecting coordination with TSG and TRADOC. Exploratory development efforts reached the point where advanced development will be initiated during fiscal year 1978 on an automatic liquid agent detector, chemical attack warning system, and a detector kit for chemical agents in water. (b) An eel enzyme system has proven to be significantly more sensitive than horse serum enzyme for the detection of nerve agents. It was demonstrated to be stable in storage and a search for a suitable substrate is under way. Exploratory studies have shown that the effervescent displacement of chemical agents from water and subsequent detection as a vapor to be a sensitive approach which will be considered for use in the water kit. A problem has been identified in the engineering development program concerning the XM9 paper, chemical agent detector. It was found that B-1 dye, the active indicator, was mutagenic. The exploratory development program was realigned to investigate other dyes which could be used in the detector paper which are nonmutagenic. 3. Chemical decontamination investigations: (a) Chemical decontamination concepts: In the continued search for removal and destruction of toxic agents on vehicles, equipment and material, utilizing available materials in the field such as water, oxygen of the air and/or moisture, a long chain nitrogen alkyl pyridinium aldoxime was synthesized. This micelle was able to destroy paroxime (a model for hydrolytically resistant organo phosphorus agents) with a half-life of less than 2 minutes at pH 9.3. Extrapolation of this data to VX projects a half-life of VX in this decontaminating solution of approximately 6 minutes at the same pH. This oxime shows promise as a noncorrosive, fast acting, water soluble decontaminant for all organophosphorus esters (including insecticides). (b) Chemical decontamination applications: A study was completed on materials and means for field expedient contamination avoidance and decontamination. The study showed that certain nonporous materials when properly draped over military equipment can eliminate or considerably reduce contamination from liquid chemical warfare agents. The study also showed that certain fuels and solvents available in the field are moderately effective for decontamination of materiel when used with proper procedures. A detailed report for field use by the armed services is being prepared. A contractual effort to develop design criteria to minimize contamination/maximize ease and speed of decontamination on future tactical equipment has concentrated on formulating design guidelines and compatibility information which will be published in a handbook in 1st quarter, fiscal year 1978. The format allows for easy updating as the data gaps identified in this study become closed. An agent impermeable urethane paint in eleven camouflage colors was developed and tested. This particular paint was developed for brush as well as spray application and appears to be within required health and safety limits. MERADCOM is staffing the formal specifications for this paint. Contract negotiations were begun on an effort to fabricate a concept model of a decontamination apparatus based upon jet/turbine engine exhaust. Contract proposals were reviewed, and the contract will be let in the 1st quarter of fiscal

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars) Prior year: Current fiscal year	Funds obligated (millions of dollars) In-house: Contract	Explanation of obligation
			year 1978. A report is being prepared on the effects of resin modifications, thermal curing and natura l accelerated weathering of alkyd paints. An automated gas chromatograph, interfaced with a mini-computer system, has been made operational for material compatibility testing with agents and decontaminants in support of triservice requirements. A 2-phase contractual effort is providing a data base for a product improvement program for the standard skin decontamination kit. The improvements include greater ease of use, more rapid use and a multiuse capability. A literature survey was made preparatory to development of a minimally corrosive aqueous decontaminant. The survey revealed no previously unknown decontaminant. An emulsion developed by an allied country was laboratory tested as a part of this effort. Tests showed that the emulsion has an excellent ability to wet surfaces which produces superior cleaning action. However, scrubbing and wiping of contaminated surfaces for physical removal of the contaminating agents appear to be the most important factors irrespective of the water based decontaminant used. A design study was initiated on a decontamination apparatus utilizing vehicular exhaust for power and heat. The design includes a variable frequency pulsation attachment.
			4. Physical protection against chemical agents:
			(a) This technology is to provide for new and improved concepts, methods, and materials for individual respiratory and body protection against all potential threat agents. Laboratory studies on sorbent materials resulted in an improved capability to estimate the residual gas life of charcoal filters in masks and collective protective equipment.
			(b) Emphasis was directed toward the development of nondestructive methods of measuring the protective capacity of charcoal filters. The feasibility of using pilot canisters/tubes in parallel with larger carbon filters to estimate the residual gas life of the larger filters has been demonstrated through experimental testing. The feasibility of an alternate technique, using air sampling probes located in the carbon filter, has also been demonstrated experimentally under a contractual effort. Other techniques, such as, conversion of carbon monoxide (CO) to carbon dioxide (CO_2) and electrical/electronic methods, are being studied for future application as residual life indicators. The techniques which offer the greatest potential for an immediate solution for residual gas life indication are the pilot canister and the probe-in-bed approaches. A prototype pilot canister/tube assembly is currently being fabricated. In addition to testing of the assembly and the pilot tubes themselves, application of the prototype to larger filter units will be accomplished. Application of the probe-in-bed technique to large filters has also been initiated. Testing is in progress to determine the optimum filter location for insertion of the sampling probe. A sampling probe has been designed and fabricated for application to modular collective protection equipment (MCPE) gas filters. Testing to verify the design will be accomplished through in-house experimental effort.
			(c) 2 materials research contracts were in effect during fiscal year 1977, 1 of which was concluded late in fiscal year 1977. The contract calling for a survey of commercially available materials was satisfactorily concluded in September 1977. 2 basic materials were reported which were potentially suitable for the flexible lens area of a protective mask. A contract modification is planned for fiscal year 1978 to develop a 2-piece prototype mask utilizing a flexible lens coupled with a standard rubber faceblank. Other materials will be investigated for potential use as a lens material. A contract modification was made to study the feasibility of using a fluorinated ethylene propylene elastomer as a faceblank material. Progress has been satisfactory and the laboratory samples appear adequate however, more work remains before the material can be produced in sufficiently large quantities for molding studies.
			(d) Cooperative effort has been maintained with U.S. Army Natick Research and Development Command (NARADCOM) on the preparation of an all services chemical protective clothing plan. The 1st draft of this plan which includes the requirements of all services has been issued in draft form for review by the Army, Air Force, Navy, and Marine Corp representatives. A contract was awarded to Southern Research Institute on the development microencapsulated chemical reactants which can be attached to fabric and will neutralize liquid and vapor chemical agents which impinge upon the clothing. Tests were conducted to evaluate the protective efficacy of components of the USAF aircrew protective ensemble. Studies were continued on the conduct of end point tests of the protective efficacy of the suits, chemical protective (overgarments) both before and after wear against the effects of neat and thickened chemical agent. The results of these tests, it is anticipated, will be used to modify the logistic doctrine for wear and replacement of the overgarment.
4. (b) Advanced development defensive systems.	(.102)	(2.724)	Advanced development effort:
	(5.181)	(2.559)	1. Remote sensing alarm: Efforts during the past 2 yr have been limited to intermittent preparation for, and conduct of comparative testing of passive long path infrared (LOPAIR) and FLIR (forward looking infrared). The comparative testing is scheduled for 1st quarter fiscal year 1978 at Dugway Proving Ground.
			2. New protective mask: The new protective mask completed the advanced development phase and entered engineering development (ED) Sept. 19, 1977. Extensive laboratory and field testing comprising DT I have been performed. The Human Engineering Laboratory conducted a 6-week exercise of infantry equipment compatibility, maneuver and individual weapon performance. The conclusion of the test was that the new protective mask is superior when compared to the M17A1 mask. The Aeromedical Research Laboratory, Fort Rucker, performed a visual and optical analysis of the new protective mask versus the M24 aircrew mask. The information derived is being utilized to optimize the lens area design. Frankford Arsenal and Night Vision Laboratory have performed an optical coupling assessment with fire control and night vision devices. Extensive testing has been conducted to determine agent penetration resistance capability and material compatibility with field contaminants. Spectacle development has continued with the objective of providing a combat spectacle which can be utilized with the mask. An intensive effort is being pursued to improve the coatings at the environmental extremes (−25¼° to 125½°F.) with respect to crazing and softening, respectively. Contractual efforts have continued with emphasis being placed in the areas of quality assurance, manufacturing and maintenance engineering. The approval of the memorandum of understanding with Canada for canisters is still pending. Similarly, the joint service operational requirement for multiservice application is still pending.
(c) Collective Protection Systems.	(.000)	(0.55)	
	(0.70)	(0.15)	Engineering development effort:
			Modular collective protective equipment (MCPE): Modular collective protection equipment (MCPE) consisting of filter units, gas-particulate, XM56, XM59 (400 cfm) and XM62 (600 cfm) together with the entrance, protective, XM10 satisfactorily completed basic DT II/OT II. M56 filter unit and M10 protective entrance were type classified for TACFIRE use in March 1976. Compatibility tests of MCPE (collective protection equipment, CB, AN/TSQ-73, 200 cfm, XM17) servicing the AN-TSQ-73 were conducted in June 1977. Based on satisfactory performance, type classification will be sought in 1st quarter, fiscal year 1978. Work continues on the application of MCPE to the Patriot (SAM-D) system.
(d) Warning and detection equipment.	(.010)	(.864)	
	(.883)	(.029)	Engineering development effort:
			1. Chemical Agent Detector Kit, XM256: Phase II operational and developmental tests of the chemical agent detector kit, (XM256) were conducted and completed satisfactorily. The technical data package was updated to include recommendations resulting from the phase II tests. The development engineering verification acceptance review was held and the item was type classified standard. The simulant chemical agent identification and training set M72A2 was also type classified for use with the XM256 kit.

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation
	Prior year	In-house	
	Current fiscal year	Contract	
			2. Paper Chemical agent detector, XM9: The B-1 dye, used in the chemical agent detector paper (XM9), was found to be mutagenic by the Ames Assay. A special review was held and it was agreed to continue the development, using OSHA standards, pending medical approval of procedures for phase II development and operational testing. A contract was prepared for bioassay of the dye to determine the extent of mutagenicity/carcinogenicity per the recommendations of the Office of the Surgeon General of the Army. Engineering design tests were completed. An interference problem (false positive) was found with the lubricant, small arms (LSA) and it was proposed to mask the color by inclusion of a blue dye in the LSA. Frankford Arsenal tested 3 dyes submitted by Chemical Systems Laboratory and found that they did not change the lubricant properties of LSA.
(e) Medical defense against chemical agents.	(.120)	(4.442)	Exploratory development effort:
	(4.644)	(.322)	1. Compared two techniques for measuring leaks in protective respiratory equipment mounted on head forms (biological tracer and sodium chloride aerosol).
			2. Published research on respiratory and percutaneous absorption of the nerve agent VX.
			3. Submitted investigative drug applications (IND) for TAB (antidote for nerve agent) to Food and Drug Administration. Approval for testing was granted.
			4. Determined that pyridostigmine has considerable promise for prophylaxis and began preparation of IND.
			5. Curtailed immunoprophylaxis research because methods did not increase protection against candidate nerve agents.
			6. Began animal studies of incapacitating effects of nerve agents at sublethal doses and various therapies and prophylactic regimens.
			7. Initiated screening of new drugs for potential prophylaxis and treatment.
			8. Continued research on mustard (HD) at the molecular and cellular level.
			9. Developed a pathogenetic model for HD-induced skin damage, consisting of amplification of a DNA lesion which progresses to inflammation and vesication.
			10. Negotiated a contract with Johns Hopkins University to study the therapeutic efficacy of specific enzyme inhibitors in HD-induced skin damage.
			11. Investigated the effects of physostigmine on state-dependent learing in trained rats. Dosage of 0.3 and 0.6 mg/kg revealed no adverse effects on the simple acquisition or performance tasks but influenced later performance in their normal state.
			12. Demonstrated the dominant role of physical removal in decontamination of thickened agents. A solution containing acetone was more effective than present decontaminant and other alcohol solutions.
			13. Obtained best results with prophylactic applications of polyglycols, which produced a five-fold increase in the decontamination protection factor.
			14. Suggested use of surgical stockinet mitt for cleansing, instead of gauze squares.
			15. Designed heat sealed packages for improved access to decontaminant materials.
			16. Reduced eye effects of present skin decontaminant by eliminating ammonia and sodium hydroxide.
			17. Improved protection against nerve agent VX with new skin protection films containing liquid fluorochemicals or etylacrylate. Another ointment offered considerable protection against the nerve agent GB.
(f) Materiel tests in support of joint operational plan.	(.000)	(.010)	Efforts were directed toward the field testing of the following:
	(.010)	(.000)	1. Decontamination field expedient: This test was designed to determine: (1) the effectiveness of field expedient decontaminants in removing thickened agents from unpainted metal, canvas, and painted surfaces and (2) the degree of protection provided when vehicles, subjected to thickened simulant agent attack, are covered with materials available in the field. 120 laboratory trials and 8 field trials were conducted. Data analysis has been completed Report is scheduled for completion fiscal yaar 1978.
			2. LOPAIR/FLIR comparison test: This test is designed to obtain data on the relative capabilities of a LOPAIR system and a FLIR system equipped with spectral filters, to detect and to discriminate between simultant chemical agent clouds, various interferences, and clouds containing mixtures of simulant and interferring materials. Planning and coordination has been completed. Testing is scheduled for 1st quarter, fiscal year 1978.
			3. Decontamination capabilities of chemical units and teams (DECAP CHUTE): This test was designed to study the capabilities of U.S. forces to decontaminate equipment which had been subjected to a thickened chemical agent attack, to determine any measures which might be adopted to improve these capabilities, and to determine the relative effectiveness of standard decontamination procedures on specific agent simulants and to establish a standard baseline time required for effective decontamination of standard Army equipment. For this period, the final report was revised based on comments received from the test sponsor and published.
(g) Army materiel development tests.	(.000)	(.310)	Tests were conducted on the U.S. Army's defensive equipment and in the long-term environmental storage and surveillance testing. Test efforts were as follows:
	(.310)	(.000)	1. Chemical agent detector kit, XM256: This test effort is designed to perform a DT II test and to determine: (1) the technical performance; (2) safety of the items; (3) its maintenance test support package; (4) demonstrate whether engineering is reasonably complete; and (5) effects of extreme climatic environments. Testing in the area of safety, reliability, maintenance evaluation, sequential rough handling, adverse environments, interference, sensitivity, transportability and human factors evaluation has been completed. A report covering that aspect of the test effort has been published. Testing in the extreme climatic environments is continuing.
			2. XM9 chemical agent detector paper: This test is designed to determine if the XM9 meets the design requirements, performance standards, and technical characteristics of the SDR, effects of extreme climatic environments on the item, and whether engineering is reasonably complete. For this period, testing is in progress. Test will be completed in fiscal year 1978.
			3. Battery computer system: Test is designed to determine if system components can be successfully decontaminated after CB contamination without damage to the system. All planning has been completed. Testing is scheduled for fiscal year 1978.
			4. Digital message device (DMD): This test is designed to determine if system components can be decontaminated without damage to the system. Test has been completed and a report published.
			5. DT II of common thermal night sight (CTNS): Test is designed to determine if system components can be successfully decontaminated without damage to the system. For the period, the contamination/decontamination test was completed and a report published.
			6. DT II of Patriot air defense system: This test is designed to determine if system components can be successfully decontaminated, if subjected to a chemical attack, without damage to the system. During this period, planning was initiated. Test is scheduled for fiscal year 1980.
			7. Stinger guided missile system: This test was designed to determine if the Stinger system and storage case can be successfully decontaminated with standard decontaminants without deterioration of components or degradation of performance. Testing was completed and a final report published.
			8. M51 CB shelter system: This test is designed to evaluate the performance of the M51 collective protection shelter system to determine if the corrective actions taken relative to deficiencies and shortcomings reported in the DT III testing are satisfactory. During this period, test monitoring at the contractor's plant and Chemical Systems Laboratory was accomplished. Report was published.
			9. Power supply—Chemical agent alarm: This test is designed to evaluate the performance characteristics of the modified power supply for use with a chemical agent alarm. During this period, test monitoring at the contractor's plant and Chemical Systems Laboratory was accomplished. Report is scheduled for com letion in fiscal year 1978.
			10. Environmental surveillance: The long-term environmental storage and surveillance program had a total of 5 items undergoing some phase of testing at 1 or more of the test sites. Items consisted of masks, chemical detectors, and chemical alarm units.

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SEC. 1.—OBLIGATION REPORT ON CHEMICAL WARFARE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977—Continued

DEPARTMENT OF THE ARMY, RCS DD-D.R. & E. (SA) 1065—Continued

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977: REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1065—Continued

Description of R.D.T. & E. effort	Funds obligated (millions of dollars) Prior year Current fiscal year	In-house Contract	Explanation of obligation
5. Simulant test support	.190	.994	
	.804	.000	
(a) Materiel tests in support of joint operations plans and/or service requirements.	(.190)	(.994)	Efforts were directed toward the planning, conducting, and/or reporting of the following joint operational tests and operations research studies:
	(.804)	(.000)	

1. Thickened agent survey: This study reviewed past and current U.S. and foreign data on thickened chemical agents. Study was completed and was published in fiscal year 1977.
2. Thickened agent investigation: This test is designed to obtain data on the dissemination characteristics of bursting munitions filled with thickened simulant and to estimate dose-casualty relationships for such munitions. 18 field trials using thickened simulants were conducted. Analysis of data is in progress. Report is scheduled for completion in fiscal year 1978.
3. Agent transfer factors: This test is designed to provide data on the transfer factor and pickup associated with the field employment of vehicles and equipment when exposed to thickened agent munitions. Laboratory testing for obtaining transfer function and evaporation rates for selected simulants has been completed. The selection of 2 appropriate simulants for field use has been made. Field test portion of this project is scheduled for fiscal year 1978.
4. Simulant review and selection: This effort is a combination study and laboratory test and is designed to determine from laboratory/chamber experiments the physical/chemical properties most important in simulating thickened agents and to develop a spectrum of chemical agent simulants for use in the field. A complete literature review is being conducted and agent and simulant tables of physical and chemical description properties are being prepared. Compounds for evaluation for decontamination and dissemination testing have been selected and are being evaluated in the laboratory for thickening, vapor pressure, persistence, and reactivity with decontamination materials This study/test is a continuing effort. An interim report covering the fiscal year 1977 work has been published.
5. Effects of chemical attack on tactical staging operations: This effort is a combination study and test and is designed to determine the effects of an attack with chemical agents in tactical staging areas and to provide a data base for an appraisal of the effects of such an attack in tactical operations. The study will analyze, evaluate, and correlate the data from past pertinent studies and tests. The study will identify and validate knowledge gaps wherein the test phase can be designed. During this period, the literature review has been initiated. Study is scheduled for completion in fiscal year 1978.
6. Safety evaluation of the Air Force TMU-28/B spray tank: This test was designed to determine the operational hazards associated with the TMU-28/B spray tank when inadvertently released during takeoff or landing and if damaged from hostile fire—36 trials were conducted. Analysis of data is in progress. Report is scheduled for completion in fiscal year 1978.
7. Decontaminant requirement: This study determined the amounts of standard decontaminants required to decontaminate an Army unit which has been contaminated with persistent chemical agents. Study was completed and published.
8. Protection provided by wet weather gear: This study evaluated the protection afforded by standard Army wet weather gear against chemical agents. A literature review was completed. Laboratory testing was analyzed. A report was completed and published.
9. Vulnerability of the Marine landing vehicle (LVTP-7): This test will determine the vulnerability of the LVTP-7 vehicle when subjected to massive chemical attack. During this period, a test plan has been prepared and was conducted. Testing is scheduled for fiscal year 1978.
10. Capabilities of collective protection: This study will evaluate the CB collective protection facilities for both mobile and permanent structures. During this period, a literature review of past testing associated with collective protection units was in progress. Study is scheduled for completion in fiscal year 1978.

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30 1977; RCS DD-D.R. & E. (SA) 1065

Chemical warfare program	10.392	7.414	During the fiscal year 1977, the Department of the Army obligated $31,056,000 for procurement activities associated with chemical warfare agents, weapons systems, defensive equipment, and production base projects. Program areas of effort
	20.664	23.642	concerned with these obligations were as follows:

Lethal chemical program:
- Materiel procurement 0
- Production base projects $10,000
- Total lethal chemical 10,000

Incapacitating chemical program:
- Materiel procurement 0
- Production base projects 0
- Total incapacitating chemical 0

Defensive equipment program:
- Materiel procurement 30,328,000
- Production base projects 719,000
- Total defensive equipment 31,056,000

1. Lethal chemical progarm	.010	.010	
	.000	.000	
(a) Item procurements	(.000)	(.000)	No obligations were incurred for procurement of lethal chemical and items.
	(.000)	(.000)	
(b) Production base projects: Omnibus engineering and design to support 155 mm binary M687.	(.010)	(.010)	Obligations incurred for engineering and design to support 155 mm binary M687 projectile.
	(.000)	(.000)	
2. Incapacitating chemical program.	.000	.000	
	.000	.000	
(a) Item procurements	(.000)	(.000)	No obligations were incurred for procurement of incapacitiatng chemical items.
	(.000)	(.000)	
(b) Production base projects	(.000)	(.000)	No obligations were incurred for production base projects in support of incapacitating chemical programs.
	(.000)	(.000)	

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Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation
	Prior year	In-house	
	Current fiscal year	Contract	
3. Defensive equipment program	10.382	7.404	
	20.664	23.642	
(a) Item procurements:			
(1) Decontaminating apparatus, M12A1.	(.295)	(.544)	Obligations incurred for in-house support and procurement of M12A1 decontaminating apparatus.
	(1.223)	(.974)	
(2) Filter unit M8A3	(.077)	(.191)	Obligations incurred for procurement and in-house engineering support for M8A3 filter unit to supply purified air for crewmembers or armored vehicles.
	(.674)	(.560)	
(3) Filter unit, M13-A1.	(.000)	(.093)	Obligations incurred for procurement and in-house engineering support for M13A1 filter unit used to supply purified air for crewmembers of armored vehicles.
	(.802)	(.709)	
(4) Alarm, M8–M10, chemical agent.	(1.968)	(2.849)	Obligations incurred for procurement and in-house engineering support of chemical agent alarms used to detect chemical agents.
	(12.219)	(11.338)	
(5) Shelter system, M51.	(7.992)	(2.451)	Obligations incurred for procurement and in-house engineering support of M51 shelter used to provide CB protection to field units.
	(3.695)	(9.236)	
(6) Modular collective protective equipment.	(.000)	(.558)	Obligations incurred for procurement and engineering support of modular collective protection equipment used to provide CB protection to field units.
	(1.383)	(.825)	
(b) Production base projects:			
(1) MMT imp and mod of gas mask leakage testing.	(.000)	(.305)	Obligations incurred for improvement and modification of gas mask leakage testing.
	(.305)	(.000)	
(2) MMT for M229 refill kit component of chemical agent alarm.	(.030)	(.030)	Obligations incurred for in-house engineering support to improve M229 refill kit.
	(.000)	(.000)	
(3) MMT mod of charcoal filter tests.	(.000)	(.245)	Obligations incurred to conduct program for modification of charcoal filter tests.
	(.245)	(.000)	
(4) MMT evaluation of exhaust filter systems.	(.020)	(.020)	Obligations incurred to prepare manual on the use and application of CB filters in design of air ventilation systems.
	(.000)	(.000)	
(5) MMT for M8 paper.	(.000)	(.118)	Obligations incurred for engineering effort to improve M8 paper used to detect chemical agents.
	(.118)	(.000)	

SEC. 2.—OBLIGATION REPORT ON BIOLOGICAL RESEARCH PROGRAM FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977,
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Description of R.D.T. & E. effort	Funds obligated (millions of dollars)		Explanation of obligation
	Prior year	In-house	
	Current fiscal year	Contract	
Biological research program	1.608	10.159	During the fiscal year 1977, the Department of the Army obligated $15,913,000 for general biological research investigation and the development and test of physical and medical defensive systems. Program areas of effort were as follows.
	14.305	5.754	Biological research:
			Basic research (total biological research) $370,000
			Defensive systems:
			Exploratory systems 10,050,000
			Advanced development 253,000
			Engineering development 5,240,000
			Testing 0
			Total defensive systems 15,543,000
			Simulant test support 0
1. Biological research	.000	.233	
	.370	.137	
(a) Basic research	(.000)	(.233)	Basic research in support of biological defense materiel: This basic research includes studies on remote detection of biological aerosols, biocategorization by chemiluminescence, detection of residual bacteria and virus (all-clear kits), time/intensity chemiluminescence, mass spectrometry (MS) analysis of nucleic acids and disinfection of biological aerosols.
	(.370)	(.137)	In remote detection work, laser-fluorescence from pathogen aerosols was studied for potential as a remote detection concept in a contract with Illinois Institute of Technology. In biocategorization of chemiluminescence bacteria, tissue cells, and pollen were differentiated by this approach. In time/intensity chemiluminescence study, reaction curves were analyzed as a basis for programing computer recognition of biological responses by the XM-19 biological agent alarm. In the mass spectrometry analysis work, it was found that this method did not meet the objectives for sensitivity, rapidity and adaptability for field samples. Further work on this concept has been dropped. In the work on disinfection of biological aerosols, 2 alternatives to lactic acid were discovered.

Description of R.D.T. & E. effort	Funds obligated (millions of dollars) Prior year: Current fiscal year	Funds obligated (millions of dollars) In-house: Contract	Explanation of obligation
2. Defensive equipment program	1.608	9.926	
	13.935	5.617	
(a) Physical defense against biological agents	(.015)	(.754)	Exploratory development effort: Physical defense against biological attack: Evaluations of lactic acid and hypochlorite as aerosol decontaminants proceeded into final phases of testing in chambers in-house and by contract, and plans were finalized for a field test. Screening of commercially available chemicals as replacements for betapropriolactone and formaldehyde continued in the search for decontaminants having more desirable properties as cited in STOG; two of over 20 chemicals screened showed promise as sporacides and will be treated further. The new mask test facility entered the design phase, and the protocol for using volunteers for testing mask leakage completed review, preparatory to Surgeon General review and approval. The fluorescence yields from 5 biological materials tested and the low background fluorescense levels from the atmosphere as measured in contract studies continues to show promise for this LIDAR (laser induced detection and ranging) approach. A new contract was negotiated to explore signal enhancement techniques to optimize LIDAR signal to noise ratios to further upgrade the potential of the approach. Direct chemiluminescence without tape-wash fractionation of the sample and PACT (pattern recognition of stained particles) both showed good probability of success as candidate systems in ambient background tests. Work is proceeding to refine the instrumentation and to measure the sensitivity to aerosolized biological materials. Progress was made in improving the sensitivity and response times of the resazurin reaction for small numbers of bacteria. Viral detection remains an imposing problem; enzyme specific detection of tissue cell material accompanying the virus is being investigated as a likely approach to this objective. Differentiation among groups of biological materials by the time/rate chemiluminescence technique progressed through exploratory development and is being applied in the XM-19 engineering development program. Work continued on the upgrading and evaluation of aerosol assessment techniques. Effort was begun on the development of a method for field calibration of the XM-19 biological alarm with biological simulant aerosols.
	(1.102)	(.363)	
(b) Biological defense materiel concepts.	(.000)	(.000)	No effort expended in this area.
	(.000)	(.000)	
(c) Biological defense materiel.	(1.593)	(2.310)	Engineering development effort: Biological detection and warning system: The multiyear prime contract program for the biological detection and warning system (BDWS) XM-19 detector and XM-2 sampler was started. Conceptual designs were prepared and full mockups fabricated. The configurations emphasize ease of operation and maintenance at the organizational level and a high degree of commonality of major components and subassemblies. A novel wet collector design for use in the XM-2 was developed in-house and experimentally tested. Its performance led to a major redesign of the XM-2 and resulted in lowered unit costs, increased projected reliability and reduced logistics burden. Conceptual models of the XM-19 and XM-2 are currently being fabricated and will be utilized in the execution of engineering design testing. Contract and in-house efforts continued in techniques and methodologies offering improvements for sample concentration and aerosol testing of the system.
	(3.612)	(2.895)	
(d) Medical defense against.	(.000)	(6.685)	The experimental programs of the US Army Medical Research Institute of Infectious Diseases (USAMRIID) are targeted toward: (a) Medical defense against biological warfare (BW); (b) infectious illnesses which pose special problems to our military forces; and (c) the safe study of infectious, highly dangerous microorganisms in the unique and special containment facilities of USAMRIID. During the past year, the research programs of USAMRIID have been revised with work priorities reordered and assigned to some of the most virulent and pathogenic microorganisms known. Agreements were reached with the Center for Disease Control (CDC) for USAMRIID to initiate studies with Lassa fever virus, Ebola virus, Congo/Crimean hemorrhagic fever viruses, and Legionnaire's disease organism. Moreover, studies are now underway on botulism toxins and investigations will be initiates shortly with the toxins of anthrax. Work will continue on Machupo virus, the etiologic agent of Bolivian hemorrhagic fever, as well as Korean hemorrhagic fever and Dengue 1 virus. These organisms or toxins all possess significant BW potential, are lethal for man and present enormous safety problems. Fortunately, USAMRIID is 1 of the few laboratories in the free world where such agents can be studied with minimum risk to the investigator and no risk to the surrounding environment. The goal of this research is to develop safe and effective vaccines or toxoids for these highly dangerous but poorly understood diseases. Work in pathogenesis and immunogenesis will support these vaccine development studies. 2d order priorities include studies on Japanese B encephalitis, Argentine hemorrhagic fever, Rift Valley fever, Chikungunya, and Venezuelan equine encephalitis (VEE). Toxin studies will continue with staphylococcal enterotoxins A, B, and C and Pseudomonas exotoxins A and S. Ricksettsial studies will continue in exogenous tick-borne spotted fevers, epidemic typhus fever and Q fever. The organisms or toxins in his priority are also highly infectious for man, possess significant BW potential and pose special problems of safety; however, at the lower order of magnitude. 3d order priorities include studies on western equine encephalitis, eastern equine encephalitis, meliodosis and tularemia. Of special significance during fiscal year 1977 was the reactivation of a dynamic program with medical research volunteer subjects. USAMRIID lost this resource several years ago with the termination of the draft and Project Whitecoat. The new program, as of Sept. 1, 1977, was comprised of 94 volunteers. Thus, the Institute has regained its unique capability to test experimental vaccines first in small laboratory animals, in larger laboratory animals, in primates, and finally in man, provided the vaccine is determined to be safe and effective at each stage of study. Specific statement of progress are illustrated by but not limited to the following examples: Preliminary development studies are underway to develop a killed Bolivian hemorrhagic fever vaccine. A crude vaccine was prepared from the Malale strain grown in BHK-21 cells, and although this type of product could never be used in man, the validity of the experimental approach was demonstrated. The formalin-killed vaccine was antigenic and protected monkeys from challenge. Future work will center upon the laboratory preparation of a killed vaccine that can be certified as being acceptable for use in man. Chemical and structural characterization of Machupo virus, the etiologic agent of Bolivian hemorrhagic fever, has made significant progress which should facilitate vaccine development. One of the most interesting observations has concerned the great plasticity of this virus and has led go studies comparing the virulent and avirulent members of this group of arenavirus. Biochemical analyses of human pathogenic Machupo and nonpathogenic Pichinde and Tacaribe arenaviruses have revealed anticipated simularities and interesting differences. The 3 viruses exhibited common polypeptides of 70,000, 45,000, and 12,000 daltons, but the patterns of glycosylation differed for each. Glycosylated polypeptides are of major interest because they normally exist near the virion surface and are significant in specifying serologic differences between virus types. The research also showed that an internal 70,000 dalton-structural-protein was common to all 3 virus types and was relatively rich in the amino acid lysine. This reflects that particular protein associated with the ribonucleic acid or genome of the virus. Antibody produced in rabbits to this protein was broadly negative with the 3 viruses by complement fixation. Earlier work had shown the protein to be associated with the ribosomes which are contained in the virus. Thus, there is strong evidence that the 70,000 dalton polypeptide is the nucleocapsid. In addition to the structural proteins of these viruses, evidence is available for the presence of surface glycolipids on the 3 arenaviruses. The glycolipid is almost certainly derived from the host cell in which the virus is grown, and it is well known that antibody raised against cells of a particular species of mammal will possess significant neutralizing activity against arenaviruses grown in that species. Nevertheless, the data shows that glycolipids comprise the major biological role in pathogenesis and immunity. The possibilities are currently being examined. Early development in-house studies are underway to develop an attenuated dengue-1 vaccine. Current studies are designed to select attenuated coloinies of virus grown in cell lines which meet the substrate requirements established by the Bureau of Biologics. Substrains of dengue-1 virus have been isolate which show promise as potential seed stocks for an attenuated vaccine. it is projected that this vaccine will not be ready for attempts at industrial-scale development until fiscal year 1979. USAMRIID's efforts are coordinated with other USAMRDC-sponsored efforts to develop a quadrivalent vaccine to protect against all four serotypes of dengue virus. It was recently discovered that 2 species of monkeys, squirrel and cynomolgus, showed serologic evidence of Korean hemorrhagic fever (KHF) infection when inoculated either intramuscularly or intratracheally with flourescent antibody technique (FAT)-positive Apodemus lung materal provided by Dr. Ho Wang Lee of Korea. 1 cynomolgus and 3 squirrel monkeys became infected. This is an important finding because it is the first time within the United States that any laboratory animal has been infected with an agent that could be etiologic for KHF. Previous transmission of the suspected viral agent has been limited to the natural host rodent reservoir, Apodemus agrariae corea. At the present time, this animal has not been colonized in the laboratory and is available only in Korea. The successful reproduction in this laboratory of the indirect FAT developed by Dr. Lee, and the successful infection of the monkeys not only confirms Dr. Lee's findings but provides the tools necessary to study this militarily important disease at USAMRIID.
	(8.933)	(2.248)	

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 2.—OBLIGATION REPORT ON BIOLOGICAL RESEARCH PROGRAM FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977, DEPARTMENT OF THE ARMY, RCS: DD-D.R. & E. (SA) 1065—Continued

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION FUNDS FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1055—Continued

Description of R.D.T. & E. effort	Funds obligated (millions of dollars)			Explanation of obligation
	Current fiscal year	Prior year	In-house Contract	
				A critical need arose to develop an effective killed VEE vaccine. One potential danger of the live attenuated TC-83 vaccine was that vaccinated people or horses might become infectious for mosquitoes, which in turn might propagate and transmit VEE virus and establish a new transmission cycle of varients with renewed virulence in geographic areas otherwise free of the disease. Another consideration was the high reactogenicity of the widely used attenuated TC-83 vaccine; moreover, the attenuated live TC-83 vaccine posed an unquantitated threat to pregnant women and other special groups, such as children and the elderly. Studies were initiated to develop a formalin-killed VEE vaccine from the TC-83 attentuated strain of virus. Since a solid base of information was already available for this virus, in-house development costs have been small. Production lots of vaccine have been prepared under contract with Merrell-National Laboratories. Preliminary tests in 18 volunteers demonstrate the killed vaccine to be highly antigenic and safe—14 additional volunteers were inoculated in June 1977 with similar results. This new vaccine will be used to replace the use of TC-83 live attenuated vaccine in laboratory workers, and to provide booster doses in workers previously immunized with live TC-83 vaccine whose residual serological titers are considered inadequate. The new killed vaccine may prove safe enough for use in children, pregnant females and in other unique situations where the live vaccine is contraindicated. Strains of Rickettsia conorii of worldwide distribution have been received and are now being passaged in eggs for initial seed preparation. Studies on biologic markers are also under investigation. Moreover, approval has been granted for initiation of studies leading to the production of a purified, inactivated Rickettsia prowazeki vaccine. While it is still unknown why intravenous injection of staphylococcal enterotoxin B (SEB) (50 ug/kg) kills monkeys and rabbits within hours, present observations support thpe option that development of pulmonary edema is a significant factor. This is based on the finding that water accumulates in the lungs prior to SEB-induced death. Since pulmonary edema is treatable with continuous positive-pressure breathing (CPPB), and has been used effectively for both adults and children in the clinical setting, this approach was pursued. Using the same principle, CPPB (3-4 cm H_2O) was applied to conscious, SEB-inoculated (50-100 ug/kg) monkeys or rabbits. Of major importance is the fact that some of these animals have survived indefinitely. The present technique for applying CPPB is still primitive as applied to this particular experimental procedure and investigations are being conducted to improve the system. Medical research on respiratory infections is significant from the standpoint of both medical defense against biological warfare (BW) and the general health care of military personnel. Respiratory model infections for investigating pathogenesis and physiological alterations seen in the host, and for developing approaches to prophylaxis and therapy, are essential tools of this research. Ideally, these model systems must embrace a broad range of laboratory animals in order that research findings can be extended with confidence to man. Within this frame of reference, Klebsiella pneumonia in the mouse was employed as a model for a bacterial respiratory infection and recently a major breakthrough was made. The host range of K. pneumonia was extended to include rats and subhuman primates, including both squirrel and cynomolgus monkeys. A key factor was the discovery that clinical and generally fatal infections could be produced in all three species when the challenge organisms were introduced intratracheally as a liquid suspension. A challenger 5 x 10^5 K. pneumoniae, contained in 0.1 ml of volume, produced 80-percent mortality in rats within 9 days. Studies in monkeys showed a direct relationship between volume of inoculum and severity of infection. For example, 5 x 10^5 K. pneumoniae, when instilled into the cynomolgus monkey in 0.5 ml, failed to produce clinical illness, whereas the same number of bacteria in 3 ml was lethal. In the smaller squirrel monkey, 5,000 K. pneumonia contained in 0.5 ml produced a mild illness with transient bacteremia, whereas the same number of bacteria contained in either 1.0 or 1.5 ml was uniformly lethal. Dose-volume relationships, common among three species of experimental animals, provide an excellent model to effectively investigate respiratory pneumoniae. Previous studies concerning the host's metabolic response to various infections have clearly demonstrated that infection induces alterations in the availability of substrates and the utilization of metabolic pathways for energy production. For example, infection effectively prevents normal starvation-induced ketosis and instead enhances muscle catabolism to provide amino acids for glucose production via the process of gluconeogenesis. Excessive utilization of amino acids for energy production during an infection can eventually result in muscle wasting, increased output of urinary nitrogen, and subsequent negative nitrogen balance. Therapeutic reversal of nitrogen wasting during bacterial infection by intravenous hyperalimentation techniques have been most encouraging. Using the recently developed rhesus monkey and rat model, it has been possible to significantly mute the nitrogen excretion by providing the infected animal 0.5 gram of nitrogen per kilogram per day (amino acid mixture, BreAmine II), 78 calories per kilogram per day lipid (Intralipid), plus electrolytes and vitamins. Of key importance in these studies was the observation that although the provision of the nitrogen source alone was sufficient to achieve nitrogen equilibrium in noninfected monkeys, it still resulted in an 11-percent loss of body protein and a doubling of nitrogen excretion during illness. By comparison, in those infected animals provided with lipid in addition to the amino acid mixture, only 1 percent of the body protein was lost during the same time interval. Findings with the rat-hyperal-model support the conclusion that the infected host requires amino acids and additional calories to prevent wastage of body proteins during infection. The alveolar macrophage, localized immunoglobulins, and other localized factors including those of cell-mediated immunity, represent first lines of host defense against respiratory infections of significant military and public health importance. While lung lavage of man for purposes of pulmonary specimen collections in clinical studies is not new, the repeated lavage of living nonhuman primates for the collection of research specimens has not been reported. A recent significant accomplishment was the development of techniques to sequentially lavage the lungs of live rhesus monkeys in obtaining respiratory tract specimens of research importance. An average of 85 percent of the wash fluids introduced into the lung were recoverable as final specimens. Cellular component levels in these specimens were clearly adequate for research purposes and recovery of the monkeys following the procedure were uniformly uneventful. The development of this technique opens new avenues for research into the pathogenesis, immunology, and therapy of respiratory infections.
(e) Foreign biological threat	(.000)		(.142)	Operations research studies were conducted to evaluate and assess the biological threat to the United States and to U.S. military forces throughout the world. During this period 5 operation research studies were completed. 8 additional studies were in progress and are scheduled for completion in fiscal year 1978. A description of the studies is as follows: 1. Operations research studies completed in fiscal year 1977: (a) Study 3: Biological defense protocol—the biological preparedness of U.S. Army troops: An assessment was made of current capabilities and of biological defense requirements for the U.S. Army in the field. The estimate of the current capability was based on attitudes regarding biological defense and on training and defense equipment devoted to biological defense. A protocol for suitable biological defense was presented. (b) Study 8: Target vulnerability assessment: An analysis was made of the political, military, technological, and geographical conditions and developments in the target area that could contribute to the use of biological weapons and an assessment was made of the prospect for the use of and conditions for defense against such weapons. (c) Study 15: Biological cloud patterns and profiles; The characteristics and the behavior of biological aerosol clouds in the atmosphere were examined or postulated for a great many meteorological and terrain conditions. The defense requirements for each of these conditions were discussed. (d) Study 17: An evaluation of biological treaties, and some relationships to defense planning: an analysis was made of biological treaties with regard to weaknesses in the treaties, motives for violation of the treaties and the means available for observation of violations. (e) Study 18: Minimum resources for biological weapons capability: The technological capability necessary for the development of biological weapons was assessed. Particular attention was given to the role of biological weapons in the hands of small nations with limited resources for weapons development. 2. Operations research studies in progress and scheduled for completion in fiscal year 1978: (a) Study 6: Concepts of biological weapons development by small organizations: A previous study has assessed the requirement for nations with limited resources to develop a biological weapon. This study will evaluate the ability of trained, but uninformed, individuals to develop a biological weapon that could be used clandestinely against U.S. forces. During this period, an engineer and a biologist, both with no previous exposure to the concepts of biological weapons development and use, are reviewing past and present literature. Based on their review, an attempt to develop a biological weapon for specific uses will be made. Report is scheduled for completion in fiscal year 1978.
	(.253)		(.111)	

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 2.—OBLIGATION REPORT ON BIOLOGICAL RESEARCH PROGRAM FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977, DEPARTMENT OF THE ARMY, RCS: DD-D.R. & E. (SA) 1065—Continued

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION FUNDS FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1065—Continued

Description of R.D.T. & E. effort	Funds obligated (millions o dollars): Prior year — Current fiscal year	Funds obligated (millions o dollars): In-house — Contract	Explanation of obligation
			(b) Study 10: Biological detector effectiveness for bomblet attack: This study will evaluate the detection capabilities for an on-target bomblet attack against U.S. military forces based on current detection arrays. During this period the characteristics and the magnitude of a biological bomblet attack were defined. Current biological detector arrays will be positioned in the target area to determine detection capability when subjected to a bomblet attack.
			(c) Study 11: Role of large particles in biological defense: This study will assess U.S. troop vulnerability from biological attack involving large particle size aerosols. During this period aerosols of biological agents composed of particles up to 20 microns in diameter were evaluated as to their role in biological weapons. The implications of large particles to biological defense were examined. Some e perimental work has shown that large particles protect the agent to some extent from environmental effects and provide a larger foci for infection. The basis for the effectiveness of particles less than 5 microns in diameter is being reviewed.
			(d) Study 12: Biological detector criteria for fixed installations: This study will develop procedures to determine the effectiveness of various biological detector criteria in preventing casualties for fixed installations. To date a survey has been made of fixed installations with regard to climate regimes, heating and ventilation characteristics of buildings, biological cloud characteristics associated with representative fixed installations and detector requirements to prevent casualties at fixed installations. Currently a model is being developed for fixed installations.
			(e) Study 19: Refinement of target vulnerability analog: This study will provide for further characterization of target vulnerability parameters which will be adaptable to a number of target sites and larger target areas. During this period, finite meteorogical data has been received for selected climatic regimes. Analog criteria are being evaluated in terms of the meteorological parameters represented by the six regimes.
			(f) Study 22: Biological casualties and attack identification: This study will develop procedures to determine when an undetected biological attack has occurred. A biological attack can be unobserved and undetected and the fact that an attack has occurred may be evident only upon the development of casualties. Certain tactical targets may present a problem because localized casualty concentrations may not readily signal the occurrence of a biological attack. During this period an analysis of tactical target casualty rates and attack identification capability was initiated.
			(g) Study 23: Biological weapons in urban areas: This study will assess the vulnerability of military and civilian personnel in urban areas to biological attack. Doctrine and tactics for urban areas are not well developed; however, some general analyses have shown potential for the effective use of both chemical and biological weapons in these areas. During this period, an examination of the vulnerability of miltary and civilian personnel and of the capability for defense of personnel in such areas when subjected to chemical and biological weapons.
			(h) Study 24: Biological theater conflict: This study is to determine whether biological weapons are of value to nations in a tactical role in support of a predominantly armor invasion. Further development of armored penetration scenarios for NATO Europe is required. During this period, scope of the study has been defined.
(f) Army materiel development tests.	(.000)	(.035)	Modifications were completed on an inclosed test chamber, preliminary checkout trials were conducted in order to validate test procedures prior to testing of the XM19 detector/XM2 sampler system. 14 trials were conducted with the XM2 sampler to determine collection efficiency and to determine the capability of the XM2 biological sampler and collecting fluid to collect and maintain viability during holding. Data forwarded to Chemical Systems Laboratory.
	(.035)	(.000)	
3. Simulant test support	.000	.000	No effort expended in this area.
	.000	.000	

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS DD-D.R. & E. (SA) 1065

Biological research program	.000	.000	During the fiscal year 1977, the Department of the Army obligated $-0- for procurement activities associated with biological defensive equipment and production base projects.
	.000	.000	

SEC. 3.—OBLIGATION REPORT ON ORDNANCE PROGRAM FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977; DEPARTMENT OF THE ARMY; RCS DD-D.R. & E. (SA) 1065

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FUNDS FOR THE PERIOD SEPT. 30, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF REPORT: SEPT. 30, 1977; RCS DD-D.R. & E. (SA) 1065

Description of R.D.T. & E. effort	Funds obligated (millions of dollars): Prior year — Current fiscal year	Funds obligated (millions of dollars): In-house — Contract	Explanation of obligation
Ordnance program	.201	5.394	During fiscal year 1977, the Department of the Army obligated $5,976,000 for general research investigations, development and test of smoke, flame, incendiary, riot control agents and weapons systems, and other support equipment. Program areas of effort concerned with these obligations were as follows:
	5.775	.582	Smoke, flame, and incendiary program $3,754,000 Herbicide program* 0 Riot control program 1,448,000 Other support equipment program 650,000 Test support 124,000 Total ordnance program 5,976,000

*Department of the Army research on the Herbicide Program has been phased out.

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; REPORTING SERVICE: DEPARTMENT OF THE ARMY; DATE OF 1977; RCS DD-D.R. & E. (SA) 1065

Ordnance program	1.776	3.689	During the fiscal year 1977, the Department of the Army obligated $5,353,425 for procurement activities associated with smoke flame, incendiary, herbicide, riot control agents, weapons systems and other support equipment. Program areas of effort concerned with these obligations were as follows:
	3.577	1.664	Smoke, flame and incendiary program $1,423,000 Herbicide program 0 Riot control program 1,925,425 Other support equipment 2,005,000

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 4.—ANNUAL REPORT ON CHEMICAL AND BIOLOGICAL RESEARCH PROGRAM OBLIGATIONS, ADJUSTMENT SUMMARY, TO REPORT FOR THE PERIOD JULY 1, 1975, THROUGH SEPT. 30, 1976, DEPARTMENT OF THE ARMY, RCS DD-D.R. & E. (SA) 1065

ADJUSTMENT SUMMARY TO THE PERIOD JULY 1, 1975, THROUGH SEPT. 30, 1976

Page	Description	From—	To—
	SEC. I—CHEMICAL WARFARE PROGRAM		
	Under explanation of obligations, change figures as follows:		
1	First line, "Department of the Army obligated . . ."	$35,279,000	$33,364,000
	Chemical research:		
	Basic research	940,000	938,000
	Exploratory development	6,860,000	6,662,000
	Total, chemical research	7,800,000	7,600,000
	Lethal chemical program:		
	Exploratory development	1,709,000	1,578,000
	Advanced development	756,000	745,000
	Engineering development	4,543,000	4,067,000
	Testing	433,000	510,000
	Total, lethal chemical	7,441,000	6,900,000
	Incapacitating chemical program: Exploratory development, total	645,000	645,000
	Defense equipment program:		
	Exploratory development	11,770,000	11,425,000
	Advanced development	3,982,000	3,913,000
	Engineering development	2,344,000	2,394,000
	Testing	860,000	210,000
	Total, defense program	18,956,000	17,942,000
	Simulant test support	437,000	277,000

Page	Description	From—		To—	
		Prior year	In-house	Prior year	In-house
		Current year	Contract	Current year	Contract
	Under funds obligated, change figures as follows:				
1	Chemical warfare program	−0.022	32.396	−0.001	30.462
		35.301	2.883	33.365	2.902
3	1. Chemical research	−.006	7.535	−.003	7.362
		7.806	.265	7.603	.238
3	a. Basic research	(.000)	(.885)	(−.002)	(.883)
		(.940)	(.005)	(.940)	(.055)
5	b. General chemical investigations	(−.006)	(6.650)	(−.001)	(6.479)
		(6.866)	(.210)	(6.63)	(3.83)
11	Lethal chemical program	.091	7.166	−.002	6.625
		7.350	.275	6.902	.275
11	a. Agent investigations and weapons concepts	(.080)	(1.709)	(−.002)	(1.578)
		(1.629)	(.000)	(1.580)	(.000)
13	b. Agent pilot plant investigations	(−.005)	(.306)	(.000)	(.311)
		(.311)	(.000)	(.311)	(.000)
14	c. Tactical weapons systems:				
14	(1) Advanced Development	(.000)	(.245)	(.000)	(.229)
		(.450)	(.205)	(.434)	(.205)
14	(2) Engineering Development	(.016)	(4.473)	(.000)	(3.997)
		(4.527)	(.070)	(4.067)	(.070)
14	d. Army materiel development tests	(.000)	(.433)	(.000)	(.510)
		(.433)	(.000)	(.510)	(.000)
17	3. Defense equipment program	−.107	16.621	.004	15.561
		19.063	2.335	17.938	2.381
17	a. Physical protection investigations	(−.018)	(4.525)	(.004)	(4.044)
		(5.776)	(1.233)	(5.541)	(1.501)
22	b. Advanced development of defensive systems	(−.033)	(3.744)	(.000)	(3.765)
		(4.015)	(.238)	(3.913)	(.148)
24	c. Collective protection systems	(−.001)	(.307)	(.000)	(.323)
		(.521)	(.213)	(.536)	(.213)
24	d. Warning and detection equipment	(−.055)	(1.305)	(.000)	(1.339)
		(1.879)	(.519)	(1.858)	(.519)

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 4.—ANNUAL REPORT ON CHEMICAL AND BIOLOGICAL RESEARCH PROGRAM OBLIGATIONS, ADJUSTMENT SUMMARY, TO REPORT FOR THE PERIOD JULY 1, 1975, THROUGH SEPT. 30, 1976, DEPARTMENT OF THE ARMY, RCS DD-D.R. & E. (SA) 1065

ADJUSTMENT SUMMARY TO THE PERIOD JULY 1, 1975, THROUGH SEPT. 30, 1976

Page	Desciption	From—		To—	
25	e. Medical defense against chemical agents	(.000)	(5.880)	(.000)	(5.880)
		(6.012)	(.132)	(5.880)	(.000)
27	f. Materiel tests in support of joint operational plan	(.000)	(.284)	(.000)	(.000)
		(.284)	(.000)	(.000)	(.000)
28	g. Army materiel development tests	(.000)	(.576)	(.000)	(.210)
		.576	.000	.210	.000
30	5. Simulant test support	.000	.429	.000	.269
		.437	.008	.277	.008
30	a. Materiel tests in support of joint operational plans and/or service requirements	(.000)	(.429)	(.000)	(.269)
		(.437)	(.008)	(.277)	(.008)

SEC. II—BIOLOGICAL RESEARCH PROGRAM

	From—	To—
1 1st line "Department of the Army obligated . . ."	$17,203,000	$14,151,000
Biological research	387,000	387,000
Basic research	387,000	387,000
Exploratory development	0	0
Defensive systems	16,813,000	13,761,000
Exploratory development	11,658,000	10,588,000
Advanced development	−2,000	−2,000
Engineering development	4,658,000	3,068,000
Testing	499,000	107,000
Simulant test support	3,000	3,000

Under funds obligated, change figures as follows:	From— Prior year / Current year	From— In-house / Contract	To— Prior year / Current year	To— In-house / Contract
1 Biological research program	−0.008	11.400	0.000	11.003
	17.735	6.327	14.151	3.148
2 2. Defensive equipment program	−.008	12.630	.000	10.698
	16.821	4.183	13.761	3.063
2 a. Physical defense against biological agents	(.000)	(1.036)	(.000)	(1.036)
	(1.278)	(.242)	(1.263)	(.227)
4 c. Biological defense materiel	(−.006)	(2.628)	(−.003)	(2.631)
	(4.664)	(2.030)	(3.071)	(.437)
5 d. Medical defense against bioagents	(.000)	(7.088)	(−.000)	(6.685)
	(10.904)	(3.816)	(8.933)	(2.248)

SEC. III—ORDNANCE PROGRAM

Under funds obligated, change figures as follows:	From— Prior year / Current year	From— In-house / Contract	To— Prior year / Current year	To— In-house / Contract
First line, "Department of the Army obligated . . ."	$8,120,000		$7,776,000	
Ordnance program	−0.002	7.775	−0.010	7.712
	8.122	.345	7.786	.064
Smoke, flame and incendiary program	5,213,000		4,787,000	
Herbicide program	−2,000		−2,000	
Riot control program	1,775,000		1,691,000	
Other support program	912,000		930,000	
Test support	222,000		370,000	

DEPARTMENT OF THE ARMY ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS
(OCT. 1, 1976, THROUGH SEPT. 30, 1977) RCS DD-D.R. & E. (SA) 1065—Continued

SEC. 1.—OBLIGATION REPORT ON CHEMICAL WARFARE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, DEPARTMENT OF THE NAVY, RCS: DD-D.R. & E. (SA) 1065

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE NAVY, DATE OF REPORT: SEPT. 30, 1977, RCS: DD-D.R. & E. (SA) 1065

Description of effort RDTE	Funds obligated (in millions of dollars) Prior year Current fiscal year	In-house Contract	Explanation of obligation
Chemical warfare program	0.000	0.524	During the period Oct. 1, 1976, through Sept. 30, 1977, the Navy obligated $1,125,000 for research and development efforts
	1.125	.601	
1. Defensive equipment program	.000	.524	
	1.125	.601	
a. Exploratory development	.000	.144	Funds support defense requirements analysis, development of automated chemical/biological detection systems, joint development of all new CB protection to personnel and new type naval ships.
	.229	.085	
b. Engineering development	.000	.380	The purposes of this program are: (1) provide U.S. Navy ships with CW advanced warning capabilities utilizing passive infrared techniques; and (2) to provide U.S. Navy ships with a CW agent point sampling detector and surface contamination monitor.
	.896	.516	

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977: REPORTING SERVICE: DEPARTMENT OF THE NAVY; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E. (SA) 1065

Chemical warfare program	0.010	0.039	During the period Oct. 1, 1976, through Sept. 30, 1977, the Department of the Navy obligated $29,000 for procuremen associated with chemical warfare defensive equipment.
	.029	.000	
Defensive equipment program	.010	.039	
	.029	.000	
Protective clothing	.010	.039	Obligations to cover the procurement of chemical warfare protective clothing for distribution to Navy ships and stations.
	.029	.000	

SEC. 2.—OBLIGATION REPORT ON BIOLOGICAL RESEARCH PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, DEPARTMENT OF THE NAVY, RCS DD-D. R. & E. (SA) 1065

Negative.

SEC. 3.—OBLIGATION REPORT ON ORDNANCE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, DEPARTMENT OF THE NAVY, RCS DD-D.R. & E. (SA) 1065

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, REPORTING SERVICE: DEPARTMENT OF THE NAVY, DATE OF REPORT: SEPT. 30, 1977, RCS: DD-D.R. & E. (SA) 1065

Ordnance program	0.000	1.200	Funds obligated to support procurement of 81mm smoke rounds.
	1.200	.000	

DEPARTMENT OF THE AIR FORCE, ANNUAL REPORT ON CHEMICAL WARFARE AND BIOLOGICAL RESEARCH PROGRAMS (OCT. 1, 1976, THROUGH SEPT. 30, 1977), RCS: DD-D.R. & E.(SA) 1065: SEPT. 30, 1977

SEC. 1.—OBLIGATION REPORT OF CHEMICAL WARFARE LETHAL AND INCAPACITATING AND DEFENSIVE EQUIPMENT PROGRAMS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977, RCS DD-D.R. & E.(SA) 1065, DEPARTMENT OF THE AIR FORCE, SEPT. 30, 1977

OBLIGATION REPORT OF RESEARCH, DEVELOPMENT, TEST AND EVALUATION FUNDS FOR THE ANNUAL PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; REPORTING SERVICE: DEPARTMENT OF THE AIR FORCE; DATE OF REPORT: SEPT. 30, 1977; RCS: DD-D.R. & E.(SA) 1065

Defensive eduipment program:			
Exploratory development	.000	.000	
	.000	.000	
Engineering development	—.014	.858	Development and testing of agent detection devices and further development of modification kits for structures. Evaluation and development of various items of personnel protection gear.
	1.197	.325	
Total defensive	—.014	.858	
	1.197	.325	
Total R.D.T.E. obligations	—.014	.858	
	1.197	.325	

OBLIGATION REPORT OF PROCUREMENT FUNDS FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; DEPARTMENT OF THE AIR FORCE; RCS: DD-D.R. & E. (SA) 1035

Chemical warfare program	.000	.000	
	5.500	5.500	
Defensive equipment program	.000	.000	
	5.500	5.500	
Protective clothing and equipment.	.000	.000	Obligations used to complete the established basis-of-issue of protective clothing and equipment and thereby provide USAF personnel with a capability to operate in a chemical warfare environment.
	5.500	5.500	

SEC. 2.—OBLIGATION REPORT ON BIOLOGICAL RESEARCH PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; DEPARTMENT OF THE AIR FORCE; RCS: DD-D.R. & E. (SA) 1035; SEPT. 30, 1977—NEGATIVE

SEC. 3.—OBLIGATION REPORT ON ORDNANCE PROGRAM FOR THE PERIOD OCT. 1, 1976, THROUGH SEPT. 30, 1977; DEPARTMENT OF THE AIR FORCE; RCS: DD-D.R. & E. (SA) 1035; SEPT. 30, 1977—NEGATIVE- ●

THE HIGH COST OF REGULATION

● Mr. DOMENICI. Mr. President, pollsters have indicated that the American people consider the use of Federal regulation and bureaucracy the major domestic problem.

This problem affects manufacturers, consumers, and all individuals. We have entered the age of Federal regulation and there are few elements of life, commercial or otherwise, where the Federal Government does not have some role to play.

Newsweek magazine in this week's issue carries an article submitted by Henry Ford II which describes the effect of regulation on our free enterprise system and the cost to our society.

I ask unanimous consent that this assessment be printed in the RECORD.

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

THE HIGH COST OF REGULATION

As I look at our country today, I see a powerful but uncertain and unsteady giant being trussed up in a growing web of rules and regulations to the point where it can no longer exert its strength freely and effectively. I am reminded of the story of Gulliver in the land of the Lilliputians.

Perhaps it's only a coincidence that the recent period of rapidly rising government spending and roughshod regulation also has been a time of high unemployment, slow productivity improvement, soaring government deficits and unprecedented peacetime inflation. But I don't believe it's a coincidence at all. Despite a mounting record of failure and frustration, our leaders have failed to grasp the fact that too much government inevitably leads to economic decay.

It is obvious to everyone—or should be—that the more government spends, the less wealth is left for productive investment as well as for private consumption. What is not so obvious—and our lawmakers and regulators apparently choose to ignore it—is that private spending to meet government requirements has similar consequences.

I am not arguing with the need for government action to conserve energy, reduce harmful pollution and protect the health and safety of all of us. But I am arguing with the tendency to sanctify each goal—to seek instant perfection with little regard for costs and consequences. In our national effort to solve common problems caused by our private choices, we have spent too much time on moralistic and ideological disputes and too little time seeking practical compromises. Our real task is to find the best balance between benefits to people as citizens and costs to people as consumers.

DESIRABLE GOALS

I am not at all reluctant to say that some automotive regulations have been needed. The industry simply did not respond quickly and effectively enough to the harmful side effects of vastly increased automotive usage in highly populated areas. And some obviously desirable goals such as reduced emisssion of pollutants and increased passenger protection in the event of accidents could not have been achieved as readily without uniform, across-the-board government mandates. In retrospect, I think it is fair to say also that the law requiring greater fuel economy in motor-vehicle use has moved us faster toward energy conservation goals than competitive, free-market forces would have done.

But the effect of even the most desirable law can be unnecessarily costly and disruptive to both manufacturers and consumers if it is interpreted in a narrow or punitive way by those who enforce the law. Regulatory decisions can have far greater impact than was intended or foreseen by those who enacted the basic legislation. To the extent that those decisions are biased or overzealous, there can be no hope of seeing the law carried out objectively.

INSIDIOUS POWER

There is a real danger that regulation will continue to feed upon regulation and become not so much a means to an end as an end in itself. With the labyrinth of regulations, many in Washington and elsewhere find themselves possessed of a power greater in some respects than that of the Congress or state legislatures.

It is an insidious kind of power. It lacks accountability to the people, has few real restraints and avoids any immediate public outcry because it does not make any direct or substantial demands upon the U.S. Treasury. The staggering cost of meeting regulations falls first upon the affected industry and its customers, and only later does the impact begin to be felt by the society at large in terms of general price rises, slower economic growth and fewer jobs. One of our critical needs today is a "sunset law" for regulations and regulatory agencies.

What the regulators evidently do not recognize is that they are forcing some fundamental changes in the structure of our economy. To the extent that some companies are unable to sustain the level of spending required by government regulation, they could find it necessary to cut back operations, reduce product lines or—at the extreme—simply go out of business. One automobile company has already dropped out of the heavy-truck business because, by its own account, it "could not keep pace with the growing list of government standards." Despite efforts by government throughout the years to prevent concentration in industry, the regulators are fast bringing us to the point where only the largest companies can survive.

What troubles me most about all of this is our apparent inability or unwillingness to recognize that there is something wrong about the way we look at our national problems and the way we try to solve them. We want clean, sparkling rivers and streams wherever we go. But must we close down all the industrial plants along their shores to achieve that goal? We want clean air. But is 90 per cent clean much worse than 99.9 per cent clean? We want safe motor vehicles. But can the vehicle alone guarantee absolute protection from accidents and injuries?

Several years ago, I went to Washington at the invitation of the late Sen. Hubert Humphrey to testify before the Joint Economic Committee. I suggested that this country would be well-served if we introduced into the conduct of our national economy some of the planning concepts that are common in business. We had better know and understand all the factors that must be taken into account when we size up the economy and lay out our course for the future. We cannot have economic growth, balanced or otherwise, if we approach problems narrowly. We must know how each action affects another, and be willing to change or eliminate those that are counterproductive.

INCENTIVES

It seems to me also that we have made too little use of incentives in attempting to resolve many of our most difficult social and environmental problems. That's the essence of this economic system that has served our country so well for so many years. Even a donkey will respond to a carrot as well as a stick. The more we can encourage people—manufacturers and consumers alike—to want to do what should be done because it is demonstrably in their best interest to do so, the less damage will be done to our economy and to the society at large.

That assumes, of course, that we can arrive at some better way of deciding—by consensus—what our national priorities should be. To paraphrase Winston Churchill, never before have so few attempted to speak for so many with such devastating results.●

ENERGY AND JOBS—AN URBAN PERSPECTIVE

● Mr. RIBICOFF. Mr. President, Senator KENNEDY's Joint Economic Energy Subcommittee recently held several hearings on the relationship between energy and employment. These timely and comprehensive hearings have focused on the impact of energy policy on jobs and those steps which can be taken to provide additional employment as energy is produced or saved.

One of the witnesses at the hearings was Hartford Council President Nicholas R. Carbone. Nick Carbone is one of the Nation's most perceptive and respected authorities on urban affairs. His testimony brings a unique perspective to the relationship between the problems of urban America and our country's energy needs. As Councilman Carbone has observed, there must be a partnership between the Federal, State, and local governments to "work together to redefine the impact of energy policy on Americans."

I believe Mr. Carbone's comments are of interest and I ask unanimous consent that his testimony be printed in the RECORD.

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

ENERGY AND JOBS

I am pleased to join you today to discuss the role of energy policy in job creation. Our national energy policy is new and incomplete. In two weeks President Carter will announce America's first explicit urban policy. Behind both strategies and programs at the Federal, State, and Local levels must lie a response to our Cities' greatest need: Jobs. Our urban policy must be an investment strategy which creates employment opportunities.

Energy policy must also be shaped to play a central role in the task of urban job creation. As Congress moves closer to the historic adoption of the Humphrey-Hawkins full employment bill, the planning tools to create full employment must be utilized to shape our energy policy as a powerful instrument for economic growth.

The broad principles of an energy/jobs policy must be fashioned at the national level in cooperation between the Congress and the administration. But numerous state and local governments already have developed prototypes of energy programs that are putting people to work. We need to examine those ideas and implement the best of them in other states and local communities. That effort will require a partnership between all three levels of government.

That partnership must work together to redefine the impact of energy policy on Americans. Energy policy has come to imply penalties, sacrifice and prohibitions that affect some people more severely than others. In the atmosphere of mistrust and resentment that follows, it is difficult, if not impossible, to rally public understanding.

Energy policy does not have to mean unequal treatment and an unfair set of per-

sonal sacrifices. Energy conservation can be perceived as a positive step towards eliminating waste and creating jobs for Americans. According to Donald Gilligan, former Assistant Director of the New York State Energy Office: "The Northeast could increase its energy consumption by 40 percent over the next decade without a single new energy source—by simply eliminating waste." Energy conservation offers local officials and individuals opportunities to increase our options to reallocate capital and natural resources away from wasteful energy uses to job creating activities.

There are 3 basic principles which underline this theme—

1. Waste of Energy eliminates jobs;
2. Capital intensive production of energy eliminates jobs;
3. Lack of a comprehensive national and urban growth policy wastes energy and destroys cities.

Energy consumption and energy waste affect job loss.

In order to understand that relationship, let's look at how inflated costs have limited local government's ability to deliver services. Hartford's experience is typical. Since fiscal year '71–'72, Hartford's budget has increased from $94 million to $130 million, during the same period the consumer price index increased 50.5 percent—shrinking the value of today's dollar. Our total current budget would equal only $64 million in 1971–72 dollars, and in 1971–72 we were spending $94 million for city services. We have cut back in several ways. We have cut back through layoffs and attrition; our number of man years has been reduced by 20 percent. We are also delaying replacement of equipment such as street sweepers—which rose in price from $15,000 to $25,000 in five years.

And, at the heart of these inflationary price increases is the rising cost of energy. Since 1971, the cost of fuel oil has gone from 12 cents a gallon to 40 cents a gallon—a 228 percent increase. The price of gasoline has increased by 168 percent and electricity by 71 percent.

As Barry Commoner points out:

"It is no accident that we first experienced double digit inflation when the previous constant price of energy not only drives all prices upwards—it creates uncertainties that delay new industrial investment. It forces economic dislocations that costs jobs. It is a prescription for inflation and unemployment. Here, then is the real meaning of the energy crisis. It is not a distant prospect of someday running out of energy. Rather, it is the immediate prospect of economic catastrophe."

How can we as a nation avoid that economic and social catastrophe? Massive multibillion dollar projects such as the Alaskan Pipeline don't seem to be the answer. Neither do proposals to build networks of huge nuclear power plants. Nuclear power plants, Commoner points out, have had to meet a whole series of new safety and environmental protection requirements that were not built into the original design. These refinements have helped push up the costs of a nuclear power plant by 130 percent in five years. Since waste and reprocessing problems are still unresolved. nuclear power plant costs will continue to increase. In Commoner's words:

"That explains why nuclear power is the most expensive energy source." and "that is why utilities constantly demand higher rates to raise the huge amounts of capital needed to build nuclear power plants."

Our country also faces severe limitations in the availability and cost of capital. Given the shortage, we must make a choice—will we use the bulk of our capital to build costly nuclear power plants to produce costly electrical power? Or will we use our capital in ways that will reduce our energy costs, put our people to work, rebuild our cities and improve the quality of life for most Americans?

If the American people believed that the latter choice were realistic, they would demand that we make it. I believe that that option is realistic, that we can achieve those goals—if we are willing to implement a sensible energy policy.

We must help the American people understand that the lack of a comprehensive national and urban growth policy not only destroys cities, it saps our nation's strength through unnecessary waste of energy. What are the energy costs of unbalanced growth? What are the energy costs of the destruction of our Northeastern and Midwestern cities? In Hartford, we have estimated that the total capital cost of replacing our City is 8–10 billion dollars including private and public buildings, parks, streets, sewers, etc. It is ironic that the lack of a national urban policy is systematically destroying this capital base—by forcing people to leave to seek employment; and by underfinancing local governments so that we are unable to maintain our capital investment.

It is ironic that while we all decry the waste of energy, and while we decry the shortage of capital, we are wasting these resources and harming our environment through the absence of a growth policy.

The cost of new housing is exploding yet as we all know, the cost of rehabilitation is dramatically less than the cost of new construction. We also see a water crisis is developing, which I believe could someday overtake the energy crisis in importance in parts of our country—and coincidentally provide the Northeast with the advantage of an unparalleled natural resource. We also see the crisis in the mushrooming capital budgets in areas of high growth, placing unnecessary demands on local taxpayers. All of these phenomena are due to a lack of a comprehensive national growth policy.

We need a national growth policy not only to save our Northeastern Cities but also to save energy. We must understand that cities are inherently energy conserving. Buildings are closer together, reducing energy costs. Apartment dwellings are lower in energy costs per unit than detached houses. Public transportation is more readily available and financially possible in cities and the commute from home to job is shorter.

Given the principles that wasted energy eliminates jobs, that capital intensive production eliminates jobs, and that the lack of a national urban policy eliminates jobs and hurts our cities, what should we do? Our cities are already taking innovative steps towards a comprehensive energy policy at the local level—but they need assistance from Washington. Unfortunately the Schlesinger plan would shift the emphasis away from local governments, and put the responsibility in the hands of state governments. There is a role for the cities, of course, but local government holds the responsibility for building codes, zoning laws and a variety of regulations that have direct impact on energy conservation.

The Schlesinger plan also would place emphasis on the role of private utility companies in retrofitting, weatherization and financing. There are two major flaws in this. First, it does not recognize the role of public utilities in the delivery of water and sewer services. Secondly, electric and gas utility companies need increased revenues to maintain the debt service on existing and future capital expansions. Conservation efforts that have lowered demand also reduced revenues and utilities have responded with rate hikes. Putting conservation in the hands of utility companies would seem to place consumers in the midst of a no-win conflict of interest.

Further, the present winterization effort, deals primarily with middle and upper income people. Tax credits will help the homeowner conserve energy and save money, but the tax credit will not assist the urban poor and the working poor concentrated in apartment dewellings. As energy costs rose, landlords in Hartford began shifting the cost of energy to their tenants, so that 75 percent of Hartford's tenants now bear the responsibility of paying for their own heat and hot water. This is almost always the case in our poorest neighborhoods. When landlords are not paying heating bills, the tax credit won't motivate them to invest in insulation, storm windows or more efficient boilers. The tenant who is paying the heating bill can't get a tax credit even if he or she can afford to winterize the apartment.

As a result of this situation, at least 50 percent of our multi-family units won't be winterized nor will they utilize new technologies such as solar collectors.

The Community Renewal Team of Hartford, which operates our winterization program for poor people, estimates that we need $10 million to insulate all substandard living units occupied by the poor in the Hartford region. Last year CRT's total budget for insulation was $120,000—approximately 1 percent of the total need.

But, the Schlesinger program is not an energy program for cities nor is it an energy program which places priority on job creation. Let me cite some specific examples of the ways in which energy policy can be used to create jobs. The City of Hartford is establishing a Community Energy Corporation which will hire and train unemployed city residents to retrofit and audit existing structures. We will work on public buildings and hope to branch into homes and apartment buildings in the City and in surrounding suburban communities. We are attempting to change state legislation so that our regional water bureau could contract with the energy corporation to retrofit homes within its jurisdiction. The publicly-managed water bureau can act both as a technical resource and as a capital source for money borrowed at public rates. Secondly, within CEC funds that would be ordinarily considered a profit will be used by the public corporation to conserve energy in poor people's homes and apartments.

It is estimated that the Community Energy Corporation, with a public investment of $125,000, can winterize 1,200 homes on a cost basis. This will create 15 jobs for city residents at a cost per house of $106.00. This results in a total cost per job of public money of $8,400 in the first year. Compare this figure of less than $10,000 per job for C.E.E. with the average cost of job creation for nuclear power. Compare this figure with the $40,000 required in capital to create a manufacturing job. Clearly, energy conservation is job intensive. In addition, the skill profile of winterization makes it a profession accessible to those suffering from structural unemployment.

The second cornerstone of a job creating energy policy must be a massive federal, state, and local partnership to create a solar industry on a job intensive and decentralized basis.

In California, the campaign for economic democracy has sponsored SOLAR cal—a legislative package submitted to the California Assembly, SOLAR cal is a package of 12 bills of which four are central. SOLAR cal would make available, through the utilities, consumer loans at low interest rates. These rates would be set by the public utilities Commission and monthly installments on the loan would be no higher than present monthly utility bills.

SOLAR cal would create a public not-for-profit corporation which would use state and federal dollars to make loans to small businesses for the production and installation of solar energy. The $10 million in equity would

stimulate the growth of solar energy and capital would be made available to small enterpreneurs and community based organizations. Also, SOLAR cal would establish the use of state CETA funds to finance the training of personnel for local community development private corporations that would manufacture and install solar equipment. CETA would be used as a way of allocating jobs in the Solar industry to those who most need them.

Finally, SOLAR cal would create a commission to provide a plan to solarize California. The California Center for Public Policy has estimated the net number of jobs that would be created in California alone, through the promotion of solar energy. Let's assume a 75 percent retrofit of homes for solar space and water heating; and 100 percent solar space and water heating in new residential and commercial construction. It is estimated that the SOLAR cal proposal would create a new number of 378,000 new jobs over a 10-year period beginning January 1, 1981.

CEC and SOLAR cal share two basic assumptions. One, public guidance and public control are the cornerstone of the national energy industry. We cannot afford to have ownership of the sun in the same way we have monopolistic ownership of petroleum by an industry unresponsive to the needs of our people or even the controls of our government. Secondly, SOLAR cal and CEC are based around the principle that energy policy and planning can create jobs for the structurally unemployed.

There are other important national examples. In Springfield, Vt., local officials plan to use seven old mill dams to generate electricity for that town's 10,000 residents. Local officials predict that a series of hydro-electric plants will cut the town's electric bill in half. This plan could be duplicated in small towns and in big cities all across the country. The U.S. Army Corps of Engineers reports that at least 48,000 untapped dam sites could be used to develop electricity. Just 10 percent of the 3,000 dam sites available in New England could supply enough electricity for the entire city of Boston. Hydro-Electric power is safe, non-polluting, relatively inexpensive, produced from a renewable energy source and can reduce the cost of energy for industrial production—helping to hold down inflation.

Wilton, Maine is looking to relatively new technology of solar energy. Wilton is constructing a sewage treatment plant that would use solar energy to heat the building and fuel the process. Methane gas will be produced as a by-product and stored as a back-up fuel. In addition, Portland, Oregon has studied a capital improvement program to see how long-range physical plans for the city could be developed that would accomplish the two goals of reducing city government energy costs while stimulating energy efficient development patterns. Dallas, Texas has developed a set of energy efficient building design standards for all new facilities and structures that are being renovated.

Since energy affects virtually every aspect of our lives—social, economic, political and cultural—a city comprehensive energy plan needs to touch all levels of municipal policy including zoning, land use building codes, transportation, economic development and education. In Hartford we are looking at how we might revise our zoning and land policies. We plan an economic multiple use of structures so that people can work, shop and entertain themselves in the same complex. We are looking at our building codes to determine whether or not the City could require an energy audit on any building that is sold so that energy deficiencies would have to be corrected before transfer of title. The proposal would guarantee that every structure in the city over time would be completely retrofitted.

This City energy policy is being managed by a new standing committee of the Council which involves all nine members. They are actively involved in the study of all aspects of our energy policy including zoning, land use, transportation and job creation.

In conclusion, we must examine what we can do next. What should be the roles of the Federal, State and Local Governments? We need a partnership that involves all three levels of government so that we can create a system which conserves energy, creates jobs and improves the quality of urban life. The National League of Cities has called for federal assistance to cities in the form of direct federal subsidies, and energy extension service, a general revenue sharing plan, and local energy conservation and development banks. The SOLAR cal proposal creates a state role in planning, land use management and a public capital source as an attempt to engage a city in intelligent energy planning. Hopefully, the President's requirement of a State urban strategy as part of the urban policy will create growth policy.

Finally, whatever is done must be based on the following four principles of action. These principles share a common goal. An energy policy should create jobs, not waste capital. An energy policy should create jobs for those in greatest need, the structurally unemployed. These principles for action are:

1. We should utilize energy sources which are job intensive as a strategy for full employment.

2. A new capacity for state and local government to manage an energy service must be created at a level equally important with existing public services, police, fire and education.

3. Energy growth must be based upon the utilization of public capital. Public capital will both lower the cost of energy saving and more importantly public capital will help to decentralize the control of the energy industry.

4. A national growth and urban policy must be made an effective tool of energy. The policy must support the survival of one of our greatest energy resources—our cities.

Thank you very much.●

SOLAR ACCESS LEGISLATION

● Mr. HART. Mr. President, the impressive package of solar legislation that was introduced on Monday is designed to encourage and expand the use of solar energy. I commend my colleagues in both Houses for the many innovative proposals that have been set forth. It must be recognized, however, that the viability of solar energy as an alternative energy resource ultimately depends upon direct access to the Sun's rays.

Although sunlight flows unobstructed through nearly 93 million miles of space, it is often impeded in the final few feet before it touches the Earth. Since most of the Sun's rays that reach a particular piece of land must necessarily strike it at an angle, very little of the sunlight collected by a solar device comes to it from directly above the land on which it rests. In Colorado, for example, the usual angle for a solar collector is roughly 60 degrees above the horizontal. This angle means that, for most installations, the rays reaching the collector will be coming across adjacent properties and may eventually be blocked by buildings, walls, trees, or other construction, not anticipated by the installer of the solar collector.

A homeowner whose solar collector is shaded by a neighboring structure may have no legal redress. A solar energy user's legal right to sunlight varies from State to State and is, for the most part, undefined and unclear. A residential solar energy user may well be hindered by restrictive covenants, building codes, and municipal ordinances, that prevent or discourage rooftop location of solar collectors. The critical question of how sunlight, upon which solar energy is dependent, is to be allocated, is just beginning to be examined. With the emergence of solar energy as an important and increasingly reliable alternative to gas, oil, and coal for heating buildings, the questions regarding legal access to the Sun cry out to be resolved. If they are not, the prospect of legal tangles over denied access is likely to scare both developers and homeowners away from solar heating and cooling.

Measures which help clarify legal access to solar energy can play a vital role in stimulating advances in technology and eliminating institutional barriers. Such measures will serve to protect the solar user from a shadow and avoid litigation between neighbors, while promoting the development and use of solar energy devices.

Legislative initiatives in this area have traditionally been the prerogative of State and local governments and should clearly remain so. The Federal Government can, however, provide the crucial support needed by States and municipalities that seek to press forward and address these emerging problems.

Accordingly, I am preparing legislation which would establish a program of matching Federal grants to States for the purpose of conducting solar access reviews, by which States would identify legal alternatives to assure access to direct sunlight and methods of encouraging adoption of such alternatives. A number of States across the country have already developed solar access planning studies, but some, unfortunately, have not been able to proceed due to the lack of funds. Federal grants earmarked for solar access studies would provide the boost necessary to get many of these State programs off the ground.

I believe this legislation will provide a solid foundation for the growth and expanded use of solar energy throughout our Nation.●

CLUES TO THE EARLY HISTORY OF THE SOLAR SYSTEM

● Mr. LEAHY. Mr. President, yesterday I had inserted into the CONGRESSIONAL RECORD a paper by Alan Rohwer entitled "What Does the Amateur Astronomer Contribute to Scientific Research?" This was one of many papers presented at a recent conference on scientific research in Vermont.

Today I ask that unanimous consent be given to print in the RECORD an equally informative and scientific paper by Dr. John C. Drake entitled "Clues to the Early History of the Solar System."

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

METEORITES: CLUES TO THE EARLY HISTORY OF THE SOLAR SYSTEM

(By John C. Drake)

ABSTRACT

Meteorites provide important insight into the early chemical evolution of the solar system. Type 1 carbonaceous chondrites closely approximate the original composition of the solar nebula. The compositional and mineralogical variability of other meteorite groups results from various periods of chemical fractionations occurring during the original condensation process and later events. Radioactive age dates indicate that meteorites formed rapidly approximately 4.5 billion years ago. Although many meteoritic processes are not well understood (for example chondrule formation and orbital perturbations) information gained from their study provides unique insight into evolutionary processes active in the early history of our solar system.

INTRODUCTION

The problem of using meteorites to interpret the early history of the solar system has several facets. First, it is necessary to establish the range of compositional and textural relationships exhibited by meteorites and then to evaluate their significance. The second problem is to establish when meteorites were formed, if in fact they did form during the early history of the solar system rather than at some later date. Thirdly scientists must establish the extent to which meteorites have been altered during their existence. If they have undergone extensive alteration since the time of their formation it becomes much more difficult to unravel their history. Finally it is necessary to ascertain whether or not they have their origins within the solar system, and, if so, in what part.

References to objects falling from the sky exist in the writings of the ancient Greeks and Romans (Krinov, 1960, p. 1–3; Wood, 1968, p. 1–4). It was not, however, until the end of the eighteenth century that the study of these objects was pursued in a scientific manner and an extraterrestrial source generally accepted. In 1794, Chladni, working at the University of Berlin, published a book entitled "Observations on a Mass of Iron found in Siberia by Professor Pallas, and on other Masses of Like Kind, with some Conjectures respecting their Connection with certain natural Phenomena" (Wood, 1968, p. 3) in which he forcefully presents the case for an extraterrestrial origin for these and other similar objects. Howard, an English chemist, discovered nickel in both stony and metallic meteorites, thus leading him to conclude, in 1802, that both types were not terrestrial material (Sears, 1975, 1976; Sears and Sears, 1977). Biot's report of the L'Aigle meteorite shower (April 26, 1803) further substantiated Chladni's and Howard's conclusions and thus the recognition that meteorites were of cosmic origin became established (Mason, 1962, p. 6–7). Until the return of the first lunar samples by Apollo 11 in July, 1968, meteorites were the only material of extraterrestrial origin available for study. The study of lunar samples and data from unmanned space probes has greatly increased the importance of meteorite studies. As more information becomes available, it is increasingly apparent that meteorites are unique in chemistry and texture, and are therefore invaluable clues in deciphering the early history of our solar system. Because of this the study of meteorites continues to be an area of interest for geologists, physicists, astronomers and chemists. Recent literature on meteorites is voluminous and this paper will not attempt a comprehensive survey. Rather, selected topics and controversies will be presented to give some idea of the varied nature of the subject material and the problems associated with using meteorites to interpret the early history of the solar system.

CHEMICAL AND MINERALOGICAL CHARACTERISTICS

Many different criteria, including chemical composition, textural relationships and mineralogy, have been used in attempts to devise a systematic classification of meteorites. In any classification scheme, however, it is important to determine whether the chosen criteria merely establish convenient, but arbitrary, subdivisions on a natural continuum or represent truly distinct groups. It is further necessary to establish whether the parameters upon which a classification system is based represent fundamental differences in origin and evolution or are merely convenient descriptive characteristics. Although there is now general concensus among meteoriticists regarding the format of the classification there are still varied interpretations as to the significance of the divisions.

Meteorites can be conveniently divided into three major groups on the basis of composition and mineralogy; (A) the irons composed primarily of nickel-iron alloys, (B) the stones which contain mostly silicate minerals and (C) the stony-irons which are a mixture of metals and silicates in approximately equal proportions. Although iron meteorites are those most frequently (59%) reported as finds (i.e. those meteorites that are found but not seen to fall), stony meteorites are probably far more abundant in space as indicated by the high percentage (92%) represented by those meteorites actually seen to fall and subsequently collected. The difference between the relative abundances of "falls" and "finds" undoubtedly represents the ease with which metallic meteorites can be distinguished from terrestrial rocks as well as their greater resistance to weathering processes on the surface of the earth. Stony-irons represent only a small percentage of either falls or finds (6% and 2% respectively; Mason, 1962, p. 3).

Iron meteorites are primarily composed of intergrowths of two nickel-iron alloys. Kamacite, a low nickel alloy is generally the predominant phase with taenite, a high nickel alloy, present in lesser amounts. The majority of metallic meteorites (the so-called octahedrites), after being cut, polished and etched with dilute acid, show an oriented intergrowth of these two minerals, known as a Widmanstatten pattern. This results from the alignment of taenite lamellae parallel to specific crystallographic directions within the more abundant kamacite host. These textures are frequently continuous over hundreds of centimeters indicating that many metallic meteorites are giant single crystals of metal. In order for crystals this size to develop, the rate of cooling must have been very slow. Rapid cooling tends to promote the formation of many nuclei rather than continued growth on one or a few crystals. Experimental work has shown that the compositions of both kamacite and taenite systematically change when temperature is lowered. Nickel atoms diffuse through the crystal lattices of these minerals enabling the compositions to re-equilibrate at lower temperatures. By combining appropirate experimental data regarding the rates of diffusion and predicted compositions with analytical data describing the distribution of nickel in the two minerals it is possible to calculate cooling rates for these meteorites (see Wood, 1968, p. 30–39; Wood, 1964; and Goldstein and Short, 1967a, 1967b; for a more detailed discussion of the technique and interpretation of results).

The results of these studies indicate a range of cooling rates from 0.4 degrees centigrade per million years (m.y.) to 500 degree centigrade per m.y., but with most iron meteorites falling in the range 1–10 degrees centigrade per m.y. Because metal is such an efficient conductor of heat these extremely low cooling rates are possible only if the metal were covered with a thick layer of insulation, such as silicate minerals. If, in fact, metallic meteorites represent the cores of parent bodies, it is possible, using conductivity data, to calculate the thickness of rocky material required to produce the measured rates of cooling. Such calculations (Goldstein and Short, 1967a, 1967b; Wood, 1968, p. 39) indicate radii ranging from 70 to 300 kilometers for the parent bodies, which compare favorably with the radii of asteroids, the largest of which is Ceres with a radius of 477 km (Hartmann, 1975), but are substantially smaller than the moon whose radius is 1738 km (Kopal, p. 5, 1969).

Stony-iron meteorites are the least abundant group. But, because they are transitional in mineralogy and texture between the more abundant iron meteorites and stony meteorites, their significant may well exceed their relative abundance. The stony-irons can be sub-divided into the two major groups that differ in chemistry, mineralogy, texture and probably mode of origin. The pallasites consist primarily of olivine, $(Mg, Fe)_2SiO_4$*, nodules or fragments set in a generally continuous matrix of nickel-iron. Investigations by Buseck and Goldstein (1969) suggest that these meteorites formed under conditions of equilibrium crystallization at very slow cooling rates (0.5 to 2 degrees centigrade per m.y.). This low cooling rate may indicate that they came from a deeper, better insulated source than most iron meteorites. These meteorites are products of extreme chemical differentiation resulting in the accumulation of olivine grains. Native metal was either interstitial to or intruded into the olivine rich zones (Buseck, 1977; Scott, 1977). Mesosiderites, the other main group of stony-irons consists primarily of pyroxene, $(Mg, Fe)SiO_3$, calcium-rich plagioclase, $CaAl_2Si_2O_8$, and nickel-iron alloy, with the latter existing as discrete grains rather than a continuous mesh. Texturally, many mesosiderites show evidence of crushing and brecciation (composed of numerous angular rock and mineral fragments) while mineral compositions indicate a lack of chemical equilibration (Powell, 1971). Cooling rates for mesosiderites, determined from nickel diffusion patterns in the metal alloys, are the lowest of any single meteorite group (0.1 degrees per m.y.). This, however, may be indicative of the cooling rate only in the temperature interval 500°C to 350°C. The textures and compositions of silicate minerals in these meteorites indicate a more rapid rate of cooling at higher temperatures. Mineralogical and textural criteria suggest that this group of meteorites has had a complex history including crystallization from an igneous silicate melt (a magma) ". . . brecciation, metal-silicate mixing, . . . burial, metamorphism (recrystallization at elevated temperatures) and ultimately removal from the parent body." (Powell, 1971, p. 5).

Stony meteorites, in which silicate minerals are predominant, are the most abundant groups, as indicated by the relative number of falls (92%). This group has been further subdivided into the chondrites which are meteorites containing small rounded inclusions (chondrules) of glass and/or minerals and the achondrites which lack chondrules. Achondrites, more than any other group of meteorites, resemble many terrestrial igneous rocks in both texture and mineralogy. They consist mainly of plagioclase, $CaAl_2Si_2O_8$, pyroxene, $(Mg, Fe)SiO_3$, and olivine, $(Mg,Fe)_2SiO_4$. The characteristics of these meteorites suggest that they crystallized from magmas formed when some meteorite parent bodies were partially or totally remelted.

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*In all chemical formulas the numbers indicate the relative number of atoms of the preceding element(s) present in a formula unit.

Chondrites are the most abundant type of meteorite observed as falls. Like the other major groups of meteorites they represent a wide range of texture, mineralogy and bulk composition which has led to numerous classification systems. The one most commonly used currently is that proposed by Van Schmus and Wood (1967) which incorporates both chemical and textural criteria. Major subdivisicns are based upon the following bulk chemical parameters; (A) the ratio SiO_2/MgO, (B) the ratio of metallic iron to total iron, Fe(m)/Fe(t), (C) the ratio of iron to silica $Fe(t)/SiO_2$ and (D) the amount of iron in olivine and pyroxene crystals. These criteria permit five different groups to be distinguished: (A) type E which is characterized by a relatively high SiO_2/MgO ratio and essentially no oxidized iron, hence a high Fe(m)/Fe(t) ratio, (B) the H, L, and LL groups (for high, low, and low low iron content) which comprise the "ordinary chondrites", having SiO_2/MgO ratios of about 1.6 (the ordinary chondrites are differentiated by Fe(m)Fe(t) ratios ranging from 0.6 for H to 0.1 for LL) (C) the "carbonaceous" or C chondrites which have low SiO_2/MgO and contain little or no native metal. These chemical groups are subdivided on the basis of mineralogical and textural (petrologic) characteristics. One extreme (type 6) contains highly recrystallized matrix constituents, with these characteristics; chondrules are poorly defined having been recrystallized in conjunction with the matrix glass is absent having been transformed into more stable crystalline minerals; minerals are in equilibrium with one another, and there is little volatile material (e.g. H_2O, C). The other extreme (type 2) contains well defined chondrules, glass, an opaque unrecrystallized matrix, disequilibrium associations of minerals and a high content of volatiles (H_2O=4–18%, C=0.6–2.8%; Van Schmus and Wood, 1967, p. 757). Type one chondrites, of which only C varieties have been found, are unique in that they contain no chondrules but have high volatile contents ($H_2O \approx 20\%$, $C \approx 2.8\%$) similar to the matrix of type 2 chondrites (which are also all type C).

There are additional chemical differences among the groups that are significant in developing any theory of origin. Many volatile elements (such as Sb, Rb, Cs, Ge, Se, Te, Ag, Bi, In, Tl, Zn, and Cd) in type 2 and type 3 carbonaceous chondrites (C–2 and C–3) are depleted by relatively constant amounts compared to type 1 carbonaceous chondrites (C–2=0.5×C–1; C–3=0.3×C–1; Grossman and Larimer, 1974, p. 85, Fig. 9). Ordinary chondrites are also depleted in volatile elements relative to C–1 but two distinct patterns exist. One group of elements (Cu, Au, Ga, Ge, Sn, Sb, S, and Se) are depleted by a constant factor (0.25×C–1) whereas a second group (Te, Ag, Zn, Cd, Hg, Cl, Br, I, Pb, Bi, In and Tl) show increasing amounts of depletion, up to 0.002×C–1 for In and Tl (Larimer and Anders, 1967). In addition to minor and trace elements (whose cosmochemical importance far outweighs their abundance) many more abundant elements (Al, Ca., Ti, Mg and others) are also depleted in ordinary and E group chondrites relative to carbonaceous chondrites. A fractionation of metal (Fe, Ni, Co) and silicate (correlated with Si) is also indicated by the systematic differences in the Fe/Si ratio among H, L, and LL chondrites. In summary, the chondrites exhibit numerous and complicated chemical and textural differences, the details of which must be considered when formulating any theory of origin. Fractionation among various chondritic meteorites exists for (A) those elements which are present in minerals at high temperatures (e.g. refractory elements), (B) those elements associated with nickel-iron metal, (C) slightly volatile elements showing constant depletion factors and (D) highly volatile elements showing variable depletion patterns. Although there is general agreement on the observational evidence, different interpretations exist as to how and when these variations were established, that have important ramifications on deciphering the evolutionary history of these objects. For example, the origin of chondrules, the small spherical inclusions from which chondrites derive their name, has been particularly enigmatic. The glassy nature or devitrification texture of many of these objects implies that they were at one time liquid and subsequently cooled to a glass. However, at the postulated pressures existing within the primordial solar nebula, gases should condense directly to solid crystalline substances rather than liquids. Hypotheses of origin include: (A) primary condensation during transient high pressure events, (B) metastable precipitation of liquids from super-cooled gases, (C) secondary formation from remelted dust by electrical discharges, (D) remelting caused by high velocity impacts between dust grains and (E) remelting caused by large scale impacts on meteorite parent bodies (Grossman and Larimer, 1974, p. 86; Wasson, 1972, p. 745; Wood, 1968, p. 77–84 and p. 100–107). Because chondrites are the most abundant group of meteorites (falls), any comprehensive discussion of the solar system must consider this group in detail.

AGES OF METEORITES

It is necessary to determine the ages of meteorites in order to assess their genetic significance. In general all dating techniques applied to meteorities rely on the spontaneous decay of radioactive elements with known half-lives (the half-life is the time required for one half of the radioactive atoms originally present to decay). As stated by Anders (1963, p. 402): "Five important events in the history of meteorites can be dated by radioactivity. In somewhat simplified terms they are (A) nucleosynthesis, (B) melting of the meteorite parent bodies, (C) cooling of the meteorite parent bodies, (D) breakup of the meteorite parent bodies and (E) fall of the meteorites." The first of these dates (A) which gives some estimate of the time interval required for the formation of the solar system, depends upon "extinct" radioactivity. This is a radioactive element such as I (129)[1] present in the original solar nebula that has a relatively short half-life. I(129) is converted to Xe (129) with a half-life of about 16 million years (short in terms of geological time!). Because Xe (129) is a gas it will be rapidly lost by diffusion at high temperatures, and will not be retained by a meteorite parent body until the temperature has fallen to 300 degrees Kelvin (0 degrees centigrade=273 degrees Kelvin) (Anders, 1963). Thus, if the original I (129) concentration can be estimated the residual Xe (129) gives an estimate of the time interval between accretion and cooling to 300 degrees K. Such determinations indicate that this length of time was about 100 million years after the cessation of nucleosynthesis reactions creating these elements. This interval is relatively short compared to the age of meteorites.

Meteoritic ages are usually determined using radioactive elements with longer half-lives. Various elements have been used including: Rb (87) to Sr (87); U (235) to Pb (208) + 7He (4); U (238) to Pb (206) + 8He (4); Th (232) to Pb (208) + 6He (4); and K (40) to A (40) + Ca (40). Meteorite ages based upon rubidium (RB) to strontium (Sr) decay relationships cluster around 4.5 billion years indicating that these objects achieved their present chemical identities at about that time. Radioactive age-dates based upon a gaseous decay product such as argon–40 or helium–4, are generally younger ranging from 4.5 billion years to less than 1 billion years. Because the decay product is a gas, these ages (so-called gas retention ages) indicate the time at which the temperature was sufficiently low that the gas could no longer diffuse out of the solid material. Thus the lower ages reflect the cooling interval from the time of formation or, in the case of some of the extremely young sizes, a reheating event that drove off previously formed gas in effect "resetting" the radioactive clock. Radioactive age-dates therefore suggest that meterites formed during a relatively short time interval approximately 4.5 billion years ago, and that some may have been reheated.

CONDENSATION OF SOLAR MATERIALS

In order to understand condensation processes in the primordial solar nebula it is necessary to know the relative abundances of the element prior to and during that event. As has been previously discussed, various classes of meteorites differ from one another by being depleted, or enriched, in a variety of constituents. In order to fully understand the processes of meteorite formation one must determine whether chemical fractionation involved enrichment or depletion. To do this requires quantitative information about the composition of the primordial solar nebula. Is it possible that some group of meterorities is composed of this ancient material? If so which is the best candidate and which groups represent products of various fractionation events that have separated primordial material into chemically distinct entities. Various lines of chemical, mineralogical and textural criteria suggest that type 1 carbonaceous chondrites most closely approximate the average composition of the early solar system, and that with the exception of a few very light elements such as hydrogen and helium this group represents the interstellar gases and dust from which the sun, planets and solar system bodies were formed. Chemical evidence for the primitive nature of type 1 carbonaceous chondrites has been summarized by Anders (1971). The cosmic abundances of individual nuclides in C–1 meteorites varies in a systematic way related to mass, and it is difficult to envision any chemical process that would transform an originally irregular distribution to a regular one. There is a very good correlation between element abundances in C–1 meteorites and both primary cosmic radiation and solar abundances which are thought to have maintained their primordial characteristics. In examining the relative abundances of elements in various meteorite groups it is possible to hypothesize processes leading to depletion of C–1 starting material but difficult to formulate a satisfactory process enriching C–1 relative to other groups. Finally any meteorites containing chondrules are highly suspect as starting materials because the chondrules themselves are depleted in volatile elements indicating a chemical fractionation; C–1 meteorites are the only chondrites that do not contain chondrules. On the basis of mineralogical and textural criteria, C–1 chondrites (as well as other type 2 and 3 chondrites) exhibit no evidence of recrystallization or chemical reaction. They contain many hydrous minerals and organic compounds (non-biogenic) that would be rapidly lost during any reheating or metamorphic event. The minerals present are commonly not in equilibrium with one another, whereas if chemical reactions had taken place they most likely would be.

If in fact type I carbonaceous chondrites do approximate to the composition of the primitive solar nebula it is necessary to determine the processes giving rise to the great diversity of meteorite types that now exist. Within the past decade this problem has been attacked by numerous investigators who have developed theoretical models predicting the sequence of minerals condensing from a high temperature gas (greater than

[1] Brackets following an element symbol enclose the mass (isotope) number.

2000°K of solar composition as it is cooled (for example Blander and Katz, 1967; Larimer, 1967; Larimer and Anders, 1967, 1970; Grossman, 1972, 1975; Grossman and Larimer, 1974). The results of these studies show that there is an orderly sequence in which the elements condense as temperature is lowered. The major elements condensing at high temperatures (the refractory elements) are Ca, Al, Ti and Si which form minerals such as corundum (AL_2O_3 at 1758°K), perovskite ($CaTiO_3$ at 164°K), melilite ($Ca_2Al_2SiO_7$-$Ca_2MgSi_2O_7$ at 1625°K), spinel ($MgAl_2O_4$ at 1513°K), metallic nickel-iron (Fe, Ni at 1473°K) and diopside ($CaMgSi_2O_6$ at 1450°K) (all temepratures in degrees Kelvin at a total pressure of 0.001 atmospheres; Grossman, 1972). Some of the minerals formed at high temperatures actually become unstable and disappear at lower temperatures by reacting to form new substances. For example under the specified conditions corundum becomes unstable at 1513°K, reacting with the remaining gas to form spinel. Between the temperatures of 1400°K and 1200°K many of the major minerals, such as olivine pyroxene and plagioclase condense while at lower temperatures many of the trace metals including Ag, Pb, Bi and Tl, condense. A characteristic pattern throughout the entire sequence is that a given element is almost completely removed from the vapor within a very short temperature interval. In addition various minerals are stable only below specific temperatures. For example magnetite (Fe_3O_4) is stable below 400° and troilite is stable below 700°. This means that within the sequence of condensates are various element and mineral relationships that should provide reasonable estimates of condensation temperatures.

Given this prediction of condensation sequences it is necessary to reexamine the mineral and element associations in meteorites to determine whether or not the predicted relationships are corroborated by natural occurrences. Evidence for the high temperature condensates appeared in a dramatic fashion at 1.05 a.m. on 8 February 1969 when a fireball, visible as far north as Arizona passed over southern Chihuahua, Mexico, and landed near Pueblito de Allende, depositing debris over 300 square kilometers. The Allende meteorite (named, as is customary, after a nearby geographical feature) is a type 3 carbonaceous chondrite containing numerous light-colored inclusions. Detailed examination of these inclusions revealed a variety of the predicted high temperature Ca-Ti-Al minerals including spinel, gehlenite, anorthite, diopside, perovskite, corundum and Ca-Al rich glass. Although spinel and other high temperature minerals had been previously reported in several other meteorites (Grossman and Larimer, 1974, pp. 79–83), the research on Allende drew attention to the significance of these minerals. Marvin, et al. (1970) postulated that they might represent actual samples of the early high temperature condensate, a conclusion subsequently substantiated (e.g. Grossman, 1975). Other geochemical relationships are also explicable in terms of a condensation model. Larimer and Anders (1970) suggest that the compositional relationships among the various chondrite classes can be explained by condensation. Thus the Ca, Al, Mg and Si concentrations in ordinary chondrites (H, L and LL) can be derived by removing 40 percent of the Ca and Al, 23 percent of the Mg and 15 percent of the Si from an original mix having the composition of C–1. This implies that an early, high temperature condensate was not incorporated in ordinary chondrites. Similar controls are postulated by Larimer and Anders for the more volatile elements. They suggest that the observed compositional depletions are related to varying proportions of a high temperature volatile-poor condensate and a low temperature volatile-rich condensate. Although many meteoriticists accept a model containing a mixture of high and low temperature condensates (Wood, 1968; Dodd, 1969) it has been suggested (Van Schmus and Wood, 1967; Dodd, 1969; Wasson, 1972) that the depletion of some volatiles is due in part to subsequent metamorphism (e.g. reheating/recrystallization) of meteorite parent bodies rather than initial condensation temperatures. Correlation between volatile content and petrologic type is cited as evidence for this point of view. In either instance the condensation studies have provided a theoretical model which agrees in many aspects with the evidence observed in meteorites.

Meteorites other than chondrites (the irons, stony-irons and achondrites) represent a far more complicated genetic history. In all instances these latter groups show evidence of severe chemical fractionation, most likely occurring in a meteorite parent body after accretion. Theories of their origin involve additional processes, including melting of parent bodies resulting in the partial or total segregation of metal from silicate minerals and resultant crystallization from igneous magmas.

SOURCE OF METEORITES

The preceding discussion has attempted to indicate some of the applications of meteoritical investigations to the interpretation of solar system evolution. It remains, however, to establish a solar system source for these objects. Several lines of evidence are relevant to this problem: (A) do orbital data suggest a solar system source? (B) are meteorite compositions correlative with other solar system objects? (C) are meteorites ages compatible with a solar system source?

Precise orbital information for meteorites is scanty. In order to make appropriate calculations a meteorite must be photographed from two or more locations. The entries of only three meteorites have been thus documented. In 1959 a meteorite landing near Pribram, Czechoslovakia was simultaneously photographed from several locations. Calculations based upon these photographs indicate that the meteorite had an elliptical orbit with an aphelion (maximum distance from the sun) of 4.05 astronomical units (1 a.u. equals the average distance between the sun and earth, 92,870,000 miles) and a perihelion (minimum distance from the sun of 0.79 a.u.). In order to gain additional information on meteorite orbits the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts, established a series of automatic cameras called the Prairie Network, in the midwest. On the evening of 3 January, 1970, four of these cameras photographed a fireball, pieces of which were subsequently recovered near Lost City, Oklahoma, in the foothills of the Ozark Mountains. One piece was actually found within approximately 700 meters of the predicted impact site. Orbital calculations again indicate an elliptical path with aphelion between Mars and Jupiter (McCrosky et al., 1971). Other fireballs photographed by the Prairie Network and thought to represent unrecovered meteorites also had elliptical paths with aphelia between Mars and Jupiter. Most recently the entry of a meteorites was photographed on February 7, 1977, by the Canadian Meteorite Observation Recovery Project. Fragments were recovered within 0.5 km of the predicted impact location near Innisfree, Alberta, Canada (Anonymous, 1977a, b). Data from these observations indicates that meteorites probably originate within our solar system since objects from without would be expected to have parabolic or hyperbolic orbits (Wood, 1968, p. 8).

The source of meteorites within the solar system is problematic. One potential source is the asteroid belt between Mars and Jupiter. Over 2000 asteroids with well defined orbits have been identified in this region, the largest being Ceres with a diameter of 955 kilometers (Hartmann, 1975). Spectral studies of the asteroids reveal a very close correspondence between them and the various classes of meteorites (Chapman, 1975, 1976) indicating that the surface of asteroids may be similar to analyzed meteorites. The sizes of asteroids (less than 1000 kilometers diameter) correlates well with the size of meteorite parent bodies inferred from cooling rate calculations. A major problem in ascribing an asteroidal source to meteorites is identifying a mechanism which will perturb material from the asteroid belt into an earth crossing orbit. Theoretical calculations by Wetherill (1974) suggest that, on the basis of current knowledge, it is difficult for asteroids to undergo sufficient orbital perturbations within the time period allowed by cosmic ray exposure ages (approximately 10 million years) to achieve earth crossing orbits. Mechanisms proposed for such orbital alterations are associated with perturbations caused by Jupiter. However, the flux of material generated by these effects may not be sufficient to account for the estimated meteorite flux. Apollo objects, asteroids already having earth-crossing orbits, of which 19 have been identified, (Hartmannn, 1975) undoubtedly supply some meteoritic material. But they have a dynamic life expectancy of only 10 million to 100 million years (Wetherill, 1974) so that a continuing supply is still required, which Wetherill, postulates may be, in part, comets. It is difficult, however, to reconcile the mineralogical and textural characteristics of many meteorites with a cometary origin.

The age of meteorites further substantiates a solar system origin. Although it is difficult to determine a precise age of the earth it is 'inferred from multiple and rather complicated observations . . . . that the earth is approximately 4.5 billion years old" (Verhoogen, et al. 1970, p.1). This correlates well with the age of the moon (approximately 4.5 billion years: Burnett. 1975, p. 23) and meteorite ages. This suggests, but does not confirm the possibility that approximately 4.5 billion years ago our solar system was rapidly evolving giving rise to the various bodies present today. The alternate explanation is that the various bodies present today were coincidentally formed at the same time but that their current proximity within the solar system was established at a later date.

Approximately 10 billion grams of extraterrestrial dust strikes the earth each year (Wetherill, 1974) which include approximately 500 "first-sized or larger" meteorites of which only 10 to 20 are recovered and examined by meteoriticists (Wood, 1968, p. 12). Other than the lunar samples returned by the Apollo missions, however, meteorites are our only samples of extraterrestrial material. They have therefore deservedly been studied to an extent far disproportionate to their absolute quantities. These investigations indicate that meteorites formed in the solar system during its early stages of evolution. As the solar gas, initially at a high temperature, cooled various minerals condensed depleting the remaining gas. Theoretical studies have provided detailed insight into the condensation sequence and the nature of the related chemical fractionations. Both high temperature and low temperature condensations are preserved in meteorites, and there is substantial evidence that at least one group of meteorites (C–1 chondrites) closely approximates the composition of the primordial solar gas excluding such extremely volatile elements such as hydrogen and helium. The process of accretion, giving rise to meteorite parent bodies was very rapid (approximately 100 million years) compared to the age of these objects (4.5 billion years). The great diversity of meteorite types is explicable in terms of chemical fractionation of the primitive condensate, chondrule-forming processes (which are

highly speculative), partial melting and associated chemical fractionation and possibly metamorphism in parent bodies. Thus meteorites preserve a record of events occurring 4.5 billion years ago that have been essentially obliterated on earth by subsequent geologic cycles of igneous activity, erosion, sedimentation and metamorphism. They are therefore important clues in determining the early history of the solar system including the earth and other planets.

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PROPOSED ARMS SALES

● Mr. SPARKMAN. Mr. President, section 36(b) of the Arms Export Control Act requires that Congress receive advance notification of proposed arms sales under that act in excess of $25 million or, in the case of major defense equipment as defined in the act, those in excess of $7 million. Upon such notification, the Congress has 30 calendar days during which the sale may be prohibited by means of a concurrent resolution. The provision stipulated that, in the Senate, the notification of proposed sales shall be sent to the chairman of the Foreign Relations Committee.

In keeping with my intention to see that such information is immediately available to the full Senate, I ask unanimous consent to have printed in the RECORD at this point the five notifications I have just received. A portion of one of the notifications, which is classified information, has been deleted for publication, but is available to Senators in the office of the Foreign Relations Committee, room S–116 in the Capitol.

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

DEFENSE SECURITY ASSISTANCE AGENCY,
Washington, D.C., March 14, 1978.

In reply refer to: I–14226/77ct.

Hon. JOHN J. SPARKMAN,
Chairman, Committee on Foreign Relations, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b) of the Arms Export Control Act, we are forwarding herewith, Transmittal No. 78–16, concerning the Department of the Army's proposed Letter of Offer to Canada for major defense equipment, as defined in the International Traffic in Arms Regulations (ITAR), estimated to cost $11 million. Shortly after this letter is delivered to your office, we plan to notify the news media.

Sincerely,

ERNEST GRAVES,
Lieutenant General, USA, Director, Defense Security Assistance Agency.

Attachments.

[Transmittal No. 78–16]

NOTICE OF PROPOSED ISSUANCE OF LETTER OF OFFER PURSUANT TO SECTION 36(b) OF THE ARMS EXPORT CONTROL ACT

(i) Prospective Purchaser: Canada.

(ii) Total Estimated Value:

	Million
Major defense equipment*	$11.0
Other	0.0
Total	11.0

*As included in the U.S. Munitions List, a part of the International Traffic in Arms Regulations (ITAR).

(iii) Description of Articles or Services Offered: 123,228 rounds of 81mm ammunition (M374A3) with fuzes.

(iv) Military Department: Army.

(v) Sales Commission, Fee, etc. Paid, Offered or Agreed to be Paid: None.

(vi) Date Report Delivered to Congress: March 14, 1978.

DEFENSE SECURITY ASSISTANCE AGENCY,
Washington, D.C., March 14, 1978.

In reply refer to: I–13467/77 ct.

Hon. JOHN J. SPARKMAN,
Chairman, Committee on Foreign Relations, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b) of the Arms Export Control Act, we are forwarding herewith, Transmittal No. 78–18, concerning the Department of the Navy's proposed Letter of Offer to the Federal Republic of Germany for major defense equipment, as defined in the International Traffic in Arms Regulations (ITAR), estimated to cost $7.1 million. Shortly after this letter is delivered to your office, we plan to notify the news media.

Sincerely,

ERNEST GRAVES,
Lieutenant General, USA, Director Defense Security Assistance Agency.

[Transmittal No. 78–18]

NOTICE OF PROPOSED ISSUANCE OF LETTER OF OFFER PURSUANT TO SECTION 36(b) OF THE ARMS EXPORT CONTROL ACT

(i) Prospective Purchaser: Federal Republic of Germany.

(ii) Total Estimated Value:

	Million
Major defense equipment*	$7.1
Other	0.0
Total	7.1

*As included in the U.S. Munitions List, a part of the International Traffic in Arms Regulations (ITAR).

(iii) Description of Articles or Services Offered: Ninety-six (96) SEASPARROW missiles (RIM–7H–5).

(iv) Military Department: Navy.

(v) Sales Commission, Fee, etc. Paid, Offered or Agreed to be Paid: None.

(vi) Date Report Delivered to Congress: March 14, 1978.

DEFENSE SECURITY ASSISTANCE AGENCY,
Washington, D.C., March 15, 1978.

In reply refer to: I–13126/77ct
Hon. JOHN J. SPARKMAN,
Chairman, Committee on Foreign Relations, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b) of the Arms Export Control Act, we are forwarding herewith, Transmittal No. 78–19, concerning the Department of the Army's proposed Letter of offer to Korea for major defense equipment, as defined in the International Traffic in Arms Regulations (ITAR), estimated to cost $14.0 million. Shortly after this letter is delivered to your office, we plan to notify the news media.

Sincerely,

ERNEST GRAVES,
Lieutenant General, USA, Director Defense Security Assistance Agency.

Attachments.

[Transmittal No. 78–19]

NOTICE OF PROPOSED ISSUANCE OF LETTER OF OFFER PURSUANT TO SECTION 36(b) OF THE ARMS EXPORT CONTROL ACT

(i) Prospective Purchaser: Korea.

(ii) Total Estimated Value:

	Million
Major defense equipment*	$14.0
Other	0.0
Total	14.0

*As included in the U.S. Munitions List, a part of the International Traffic in Arms Regulations (ITAR).

(iii) Descriptions of Articles or Services Offered: Sixteen (16) M88A1 tank recovery vehicles.

(iv) Military Department: Army.

(v) Sales Commission, Fee, etc. Paid, Offered or Agreed to be Paid: None.

(vi) Date Report Delivered to Congress: 15 Mar 1978

DEFENSE SECURITY ASSISTANCE AGENCY,
Washington, D.C., March 15, 1978.

In reply refer to: I–2240/78ct
Hon. JOHN J. SPARKMAN,
Chairman, Committee on Foreign Relations, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b) of the Arms Export Control Act, we are forwarding under separate cover, Transmittal No. 78–20, concerning the Department of the Army's proposed Letter of Offer to NATO not for major defense equipment as defined in the International Traffic in Arms Regulations (ITAR), estimated to cost $88.8 million.

Sincerely,

ERNEST GRAVES,
Lieutenant General, U.S.A., Director, Defense Security Assistance Agency.

Separate cover: Transmittal No. 78–20, Policy Justification.

[Transmittal No. 78–20]

NOTICE OF PROPOSED ISSUANCE OF LETTER OF OFFER PURSUANT TO SECTION 36(b) OF THE ARMS EXPORT CONTROL ACT

(i) Prospective Purchaser: NATO.

(ii) Total Estimated Value: Major Defense Equipment,* other $88.8 million, total $88.8 million.

(iii) Description of Articles or Services Offered: Digital computers, logistics, engineering, documentation production, installations and training to support the Solid State up-grading modification to [deleted] Nike-Hercules air defense missile system.

(iv) Military Department: Army.

(v) Sales Commission, Fee, etc. Paid, Offered or Agreed to be Paid: None.

(vi) Date Report Delivered to Congress: March 15, 1978.

* As included in the U.S. Munitions List, a part of the International Traffic in Arms Regulations (ITAR).

DEFENSE SECURITY ASSISTANCE AGENCY,
Washington, D.C., March 15, 1978.

In reply refer to: I–9787/77ct
Hon. JOHN J. SPARKMAN,
Chairman, Committee on Foreign Relations, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b) of the Arms Export Control Act, we are forwarding herewith, Transmittal No. 78–22, concerning the Department of the Army's proposed Letter of Offer to Korea for major defense equipment, as defined in the International Traffic in Arms Regulations (ITAR), estimated to cost $31.4 million and support costs of $8.7 million for a total estimated cost of $40.1 million. Shortly after this letter is delivered to your office, we plan to notify the news media.

Sincerely,

ERNEST GRAVES,
Lieutenant General, USA, Director, Defense Security Assistance Agency.

Attachments.

[Transmittal No. 78–22]

NOTICE OF PROPOSED ISSUANCE OF LETTER OF OFFER PURSUANT TO SECTION 36(b) OF THE ARMS EXPORT CONTROL ACT

(i) Prospective Purchaser: Republic of Korea.

(ii) Total Estimated Value:

	Millions
Major defense equipment*	$31.4
Other	8.7
Total	40.1

*As included in the U.S. Munitions List, a part of the International Traffic in Arms Regulations (ITAR).

(iii) Description of Articles or Services Offered: Six (6) Boeing Vertol model CH–47C helicopters, spare engines, ground support equipment and spare parts.

(iv) Military Department: Army.

(v) Sales Commission, Fee, etc. Paid, Offered or Agreed to be Paid: None.

(vi) Date Report Delivered to Congress: March 15, 1978.●

MR. NICHOLAS CARBONE ON ENERGY AND JOBS

● Mr. McGOVERN. Mr. President, on yesterday the Subcommittee on Energy of the Joint Economic Committee, chaired by Senator KENNEDY, conducted hearings on the relationship of energy development to the creation of jobs.

Testifying before this hearing, which I had the privilege to attend, was Mr. Nicholas R. Carbone, a distinguished member of the Hartford, Conn., city council. Mr. Carbone is one of our most thoughtful urban leaders. He presented a most impressive statement to the committee yesterday, which was interrupted by a rollcall on the Panama Canal treaties.

Since the full text of Mr. Carbone's statement was therefore not given to the committee yesterday, I ask unanimous consent that it be printed in the RECORD so that Members of the Congress will have easy access to this important statement.

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

ENERGY AND JOBS

I am pleased to join you today to discuss the role of energy policy in job creation. Our national energy policy is new and incomplete. In two weeks President Carter will announce America's first explicit urban policy. Behind both strategies and programs at the Federal, State, and Local levels must lie a response to our Cities' greatest need: Jobs. Our urban policy must be an investment strategy which creates employment opportunities.

Energy policy must also be shaped to play a central role in the task of urban job creation. As Congress moves closer to the historic adoption of the Humphrey Hawkins full employment bill, the planning tools to create full employment must be utilized to shape our energy policy as a powerful instrument for economic growth.

The board principles of an energy/jobs policy must be fashioned at the national level in cooperation between the Congress and the administration. But numerous state and local governments already have developed prototypes of energy programs that are putting people to work. We need to examine those ideas and implement the best of them in other states and local communities. That effort will require a partnership between all three levels of government.

That partnership must work together to redefine the impact of energy policy on Americans. Energy policy has come to imply penalties, sacrifice and prohibitions that affect some people more severely than others. In the atmosphere of mistrust and resentment that follows, it is difficult, if not impossible, to rally public understanding.

Energy policy does not have to mean unequal treatment and an unfair set of personal sacrifices. Energy conservation can be perceived as a positive step towards eliminating waste and creating jobs for Americans. According to Donald Gilligan, former Assistant Director of the New York State Energy Office: "The Northeast could increase its energy consumption by 40 per cent over the next decade without a single new energy source—by simply eliminating waste." Energy conservation offers local officials and individuals opportunities to increase our options to reallocate capital and natural resources away from wasteful energy uses to job creating activities.

There are 3 basic principles which underline this theme.

1. Waste of Energy eliminates jobs.

2. Capital intensive production of energy eliminates jobs.

3. Lack of a comprehensive national and urban growth policy wastes energy and destroys cities.

Energy consumption and energy waste affect job loss.

In order to understand that relationship, let's look at how inflated costs have limited local government's ability to deliver services. Hartford's experience is typical. Since fiscal year '71–'72, Hartford's budget has increased from $94 million to $130 million. During the same period the consumer price index increased 50.5%—shrinking the value of today's dollar. Our total current budget would equal only $64 million in 1971–72 dollars, and in 1971–72 we were spending $94 million for city services. We have cut back in several ways. We have cut back through layoffs and attrition; our number of man years has been reduced by 20 per cent. We are also delaying replacement of equipment such as street sweepers—which rose in price from $15,000 to $25,000 in five years.

And, at the heart of these inflationary price increases is the rising cost of energy. Since 1971, the cost of fuel oil has gone from 12¢ a gallon to 40¢ a gallon—a 228% increase. The price of gasoline has increased by 168% and electricity by 71%.

As Barry Commoner points out:

"It is no accident that we first experienced double digit inflation when the previous constant price of energy not only drives all prices upwards—it creates uncertainties that delay new industrial investment. It forces economic dislocations that costs jobs. It is a prescription for inflation and unemployment. Here, then, is the real meaning of the energy crisis. It is not a distant prospect of someday running out of energy. Rather, it is the immediate prospect of economic catastrophe."

How can we as a nation avoid that economic and social catastrophe? Massive multi-billion dollar projects such as the Alaskan Pipeline don't seem to be the answer. Neither do proposals to build networks of huge nuclear power plants. Nuclear power plants, Commoner points out, have had to meet a whole series of new safety and environmental protection requirements that were not built into the original design.

These refinements have helped push up the costs of a nuclear power plant by 130% in five years. Since waste and reprocessing problems are still unresolved, nuclear power plant costs will continue to increase. In Commoner's words:

"That explains why nuclear power is the most expensive energy source," and "that is why utilities constantly demand higher rates to raise the huge amounts of capital needed to build nuclear power plants."

Our country also faces severe limitations in the availability and cost of capital. Given the shortage, we must make a choice—will we use the bulk of our capital to build costly nuclear power plants to produce costly electrical power? or will we use our capital in ways that will reduce our energy costs, put our people to work, rebuild our cities and improve the quality of life for most Americans?

If the American people believed that the latter choice were realistic, they would demand that we make it. I believe that that option is realistic, that we can achieve those goals—if we are willing to implement a sensible energy policy.

We must help the American people understand that the lack of a comprehensive national and urban growth policy not only destroys cities, it saps our nation's strength through unnecessary waste or energy. What are the energy costs of unbalanced growth? What are the energy costs of the destruction of our Northeast and Midwestern cities? In Hartford, we have estimated that the total capital cost of replacing our City is 8–10 billion dollars including private and public buildings, parks, streets, sewers, etc. It is ironic that the lack of a national urban policy is systematically destroying this capital base—by forcing people to leave to seek employment; and by underfinancing local governments so that we are unable to maintain our capital investment.

It is ironic that while we all decry the waste of energy, and while we decry the shortage of capital, we are wasting these resources and harming our environment through the absence of a growth policy.

The cost of new housing is exploding yet as we all know, the cost of rehabilitation is dramatically less than the cost of new construction. We also see a water crisis is developing, which I believe could someday overtake the energy crisis in importance in parts of our country—and coincidentally provide the Northeast with the advantage of an unparalleled natural resource. We also see the crisis in the mushrooming capital budgets in areas of high growth, placing unnecessary demands on local taxpayers. All of these phenomena are due to a lack of a comprehensive national growth policy.

We need a national growth policy not only to save our Northeastern Cities but also to save energy. We must understand that cities are inherently energy conserving. Buildings are closer together, reducing energy costs. Apartment dwellings are lower in energy costs per unit than detached houses. Public transportation is more readily available and financially possible in cities and the commute from home to job is shorter.

Given the principles that wasted energy eliminates jobs, that capital intensive production eliminates jobs, and that the lack of a national urban policy eliminates jobs and hurts our cities, what should we do? Our cities are already taking innovative steps towards a comprehensive energy policy at the local level—but they need assistance from Washington. Unfortunately the Schlesinger plan would shift the emphasis away from local governments, and put the responsibility in the hands of state governments. There is a role for the cities, of course, but local government holds the responsibility for building codes, zoning laws and a variety of regulations that have direct impact on energy conservation.

The Schlesinger plan also would place emphasis on the role of private utility companies in retrofitting, weatherization and financing. There are two major flaws in this. First, it does not recognize the role of public utilities in the delivery of water and sewer services. Secondly, electric and gas utility companies need increased revenues to maintain the debt service on existing and future capital expansions. Conservation efforts that have lowered demand also reduced revenues and utilities have responded with rate hikes. Putting conservation in the hands of utility companies would seem to place consumers in the midst of a no-win conflict of interest.

Further, the present winterization effort, deals primarily with middle and upper income people. Tax credits will help the homeowner conserve energy and save money, but the tax credit will not assist the urban poor and the working poor concentrated in apartment dwellings. As energy costs rose, landlords in Hartford began shifting the cost of energy to their tenants, so that 75% of Hartford's tenants now bear the responsibility of paying for their own heat and hot water. This is almost always the case in our poorest neighborhoods. When landlords are not paying heating bills, the tax credit won't motivate them to invest in insulation, storm windows or more efficient boilers. The tenant who is paying the heating bill can't get a tax credit even if he or she can afford to winterize the apartment.

As a result of this situation, at least 50% of our multi-family units won't be winterized nor will they utilize new technologies such as solar collectors.

The Community Renewal Team of Hartford, which operates our winterization program for poor people, estimates that we need $10 million to insulate all sub standard living units occupied by the poor in the Hartford region. Last year CRT's total budget for insulation was $120,000—approximately 1% of the total need.

But, the Schlesinger program is not an energy program for cities nor is it an energy program which places priority on job creation. Let me cite some specific examples of the ways in which energy policy can be used to create jobs. The City of Hartford is establishing a Community Energy Corporation which will hire and train unemployed city residents to retrofit and audit existing structures. We will work on public buildings and hope to branch into homes and apartment buildings in the City and in surrounding suburban communities. We are attempting to change state legislation so that our regional water bureau could contract with the energy corporation to retrofit homes within its jurisdiction. The publicly—managed water bureau can act both as a technical resource and as a capital source for money borrowed at public rates. Secondly, within CEC funds that would be ordinarily considered a profit will be used by the public corporation to conserve energy in poor people's homes and apartments.

It is estimated that the Community Energy Corporation, with a public investment of $125,000, can winterize 1,200 homes on a cost basis. This will create 15 jobs for city residents at a cost per house of $106.00. This results in a total cost per job of public money of $8,400 in the first year. Compare this figure of less than $10,000 per job for CEC with the average cost of job creation for nuclear power. Compare this figure with the $40,000 required in capital to create a manufacturing job. Clearly, energy conservation is job intensive. In addition, the skill profile of winterization makes it a profession accessible to those suffering from structural unemployment.

The second cornerstone of a job creating energy policy must be a massive federal, state, and local partnership to create a solar industry on a job intensive and decentralized basis.

In California, the campaign for economic democracy has sponsored SOLAR cal—a legislative package submitted to the California Assembly. SOLAR cal is a package of 12 bills of which four are central. SOLAR cal would make available, through the utilities, consumer loans at low interest rates. These rates would be set by the Public Utilities Commission and monthly installments on the loan would be no higher than present monthly utility bills.

SOLAR cal would create a public not-for-profit corporation which would use state and federal dollars to make loans to small businesses for the production and installation of solar energy. The $10 million in equity would stimulate the growth of solar energy and capital would be made available to small entrepreneurs and community based organizations. Also, SOLAR cal would establish the use of state CETA funds to finance the

training of personnel for local community development private corporations that would manufacture and install solar equipment. CETA would be used as a way of allocating jobs in the Solar industry to those who most need them. Finally, SOLAR cal would create a commission to provide a plan to solarize California. The California Center for Public Policy has estimated the net number of jobs that would be created in California alone, through the promotion of solar energy. Let's assume a 75% retrofit of homes for solar space and water heating; and 100% solar space and water heating in new residential and commercial construction. It is estimated that the SOLAR cal proposal would create a new number of 378,000 new jobs over a 10 year period beginning January 1, 1981.

CEC and SOLAR cal share two basic assumptions. One, public guidance and public control are the cornerstone of the national energy industry. We cannot afford to have ownership of the sun in the same way we have monopolistic ownership of petroleum by an industry unresponsive to the needs of our people or even the controls of our government. Secondly, SOLAR cal and CEC are based around the principle that energy policy and planning can create jobs for the structurally unemployed.

There are other important national examples. In Springfield, Vt. local officials plan to use seven old mill dams to generate electricity for that town's 10,000 residents. Local officials predict that a series of hydro-electric plants will cut the town's electric bill in half. This plan could be duplicated in small towns and in big cities all across the country. The U.S. Army Corps of Engineers reports that at least 48,000 untapped dam sites could be used to develop electricity. Just 10% of the 3,000 dam sites available in New England could supply enough electricity for the entire city of Boston. Hydro-electric power is safe, non-polluting, relatively inexpensive, produced from a renewable energy source and can reduce the cost of energy for industrial production—helping to hold down inflation.

Wilton, Maine is looking to relatively new technology of solar energy. Wilton is constructing a sewage treatment plant that would use solar energy to heat the building and fuel the process. Methane gas will be produced as a by-product and stored as a back-up fuel. In addition, Portland, Oregon has studied a capital improvement program to see how long-range physical plans for the city could be developed that would accomplish the two goals of reducing city government energy costs while stimulating energy efficient development patterns. Dallas, Texas has developed a set of energy efficient building design standards for all new facilities and structures that are being renovated.

Since energy affects virtually every aspect of our lives—social, economic, political and cultural—a city comprehensive energy plan needs to touch all levels of municipal policy including zoning, land use building codes, transportation, economic development and education. In Hartford we are looking at how we might revise our zoning and land policies. We plan an economic multiple use of structures so that people can work, shop and entertain themselves in the same complex. We are looking at our building codes to determine whether or not the City should require an energy audit on any building that is sold so that energy deficiencies would have to be corrected before transfer of title. The proposal would guarantee that every structure in the city over time would be completely retrofitted.

This City energy policy is being managed by a new standing committee of the Council which involves all nine members. They are actively involved in the study of all aspects of our energy policy including zoning, land use, transportation and job creation.

In conclusion, we must examine what we can do next. What should be the roles of the Federal, State and Local Governments? We need a partnership that involves all three levels of government so that we can create a system which conserves energy, creates jobs and improves the quality of urban life. The National League of Cities has called for federal assistance to cities in the form of direct federal subsidies, and energy extension service, a general revenue sharing plan, and local energy conservation and development banks. The SOLAR cal proposal creates a state role in planning, land use management and as a public capital source. The City of Hartford has created a public capital source as an attempt to engage a city in intelligent energy planning. Hopefully, the President's requirement of a State urban strategy as part of the urban policy will create growth policy.

Finally, whatever is done must be based on the following four principles of action. These principles share a common goal. An energy policy should create jobs, not waste capital. An energy policy should create jobs for those in greatest need, the structurally unemployed. These principles for action are:

1. We should utilize energy sources which are job intensive as a strategy for full employment.

2. A new capacity for state and local government to manage an energy service must be created at a level equally important with existing public services, police, fire and education.

3. Energy growth must be based upon the utilization of public capital. Public capital will both lower the cost of energy saving and more importantly public capital will help to decentralize the control of the energy industry.

4. A national growth and urban policy must be made an effective tool of energy. The policy must support the survival of one of our greatest energy resources—our cities.

Thank you very much.●

SOLAR COALITION LEGISLATIVE PACKAGE

● Mr. HART. Mr. President, I would like to commend to my colleagues the package of legislation which was introduced on Monday by the Solar Coalition, an informal group of Senate and House Members dedicated to the early realization and widespread use of solar energy.

The Solar Coalition compiled an impressive record of legislative successes during its first year. Of nine bills introduced during the last session of Congress, eight have been adopted in whole or in part by both Houses.

In looking at the second coalition package, it would be well to assess where we have been and where we are going in national efforts to promote solar energy.

The United States is a latecomer in harnessing the Sun's power. Many industrialized and lesser developed nations have long used solar energy to compensate for a lack of domestic energy resources. Relatively inexpensive and seemingly inexhaustible supplies of fossil fuels retarded the growth of the solar industry in America.

The Arab oil embargo and the reality of dwindling domestic petroleum reserves compelled us to recognize the tenuousness and vulnerability of a national economy based on limited and interruptible energy sources. This miscalculation was largely responsible for the worst recession this Nation has endured in the post-World War II period.

It was in the crisis atmosphere of 1973–74 that the first landmark solar legislation was enacted into law. The Solar Heating and Cooling Demonstration Act, sponsored in the Senate by the late Senator Humphrey, and the Non-Nuclear Energy Research, Development and Demonstration Act of 1974 established an aggressive Federal program of research, development, demonstration and commercialization of solar technologies. Between 1974 and 1977, the Federal Government commitment to solar energy increased thirtyfold, from $10 to $300 million.

However, there are signs that our national commitment to solar energy is waning. The administration's proposed budget for fiscal year 1979—if adjusted for inflation—actually reduces the national solar effort. Outlays for the various solar technologies still comprise only 3 to 4 percent of the Federal energy budget. Certainly, this level of commitment is not consistent with the realignment of our energy priorities called for by the President in his energy message to the Nation last year.

Mr. President, we stand at a crossroad in determining our energy future. We can continue the "business as usual" approach to the development of solar and other energy alternatives, or we can act now to pre-empt the possibility that interruptions of fossil fuel supplies will cause radical disruptions of the Nation's economy and social fabric. The transition from an economy which is dependent upon depletable fossil fuels to greater reliance on renewable energy technologies will be a monumental undertaking, requiring an unprecedented peacetime investment of the Nation's resources. But a national commitment to solar energy today will ease the transition to a post-petroleum world.

This is the founding premise of the solar coalition. The legislative package which the coalition is introducing today will serve to renew our commitment to the early realization and widespread use of solar energy.

I will be sponsoring several bills in conjunction with the solar coalition in the coming weeks. Among them will be a proposal to promote solar and other renewable energy sources overseas.

Generally speaking, Third World nations are richly endowed with sunlight, have cheaper labor costs and can ill-afford the large capital costs and ongoing currency drain required by conventional energy sources. These nations are ideally suited for the use of appropriate scale solar technologies.

Besides being a benign instrument of U.S. foreign policy, a comprehensive international solar program would also accelerate the development of the domestic solar energy industry.

I will also be introducing legislation to address the issue of solar access. Although sunlight flows unobstructed through nearly 93 million miles of space, it is often impeded in the final few feet before it touches the Earth. Since most of the Sun's rays that reach a particular piece of land strike it at an angle, very little of the sunlight collected by a solar

device comes to it from directly above the land on which it rests.

At the present time, a homeowner whose solar collector is shaded by a neighboring structure may have no legal redress. A solar energy user's legal right to sunlight varies from State to State and is, for the most part, undefined and unclear. A residential solar energy user may be hindered by restrictive covenants, building codes, and municipal ordinances that prevent or discourage the use of solar collectors. The critical question of how sunlight is to be allocated is only now being examined.

Accordingly, I am preparing legislation which would establish a program of Federal matching grants to States for the purpose of conducting solar access reviews, which would permit States to identify legal alternatives to insure access to direct sunlight.

Recent studies have revealed that wind energy is the solar technology with the greatest potential for making an early and significant contribution to the Nation's energy "mix." In the coming week, Senators McINTYRE, DURKIN, and I will be introducing an amendment to the fiscal 1979 Department of Energy authorization bill to greatly expand the present Federal effort to develop this energy source.

Photovoltaics—the conversion of sunlight to electricity—is one of the most promising solar technologies. Despite dramatic reductions in the cost of photovoltaic cells in recent years, they are still too expensive for most common applications. I will be introducing legislation to bring the cost of photovoltaic cells down to a level which would be competitive with utility-generated electricity. Under this proposal, the Federal Government would assist the fledgling photovoltaics industry through systematic purchases of photovoltaic panels for its own uses. If carefully planned, these purchases would create a stable, long-term photovoltaics market which would justify investments in plants and equipment by manufacturers of photovoltaic cells. The Government purchases would be geared to promote competition between different cell designs and production methods so as to continually reduce costs.

Mr. President, these and other proposals should continue the momentum generated by the solar coalition today. It is my sincere hope that Congress will reaffirm its commitment to solar energy through early and favorable consideration of the coalition's legislative package.●

BRIDGEPORT WEATHER STATION—WHAT PRICE ECONOMY?

● Mr. RIBICOFF. Mr. President, in late January the National Weather Service announced that it would close some 19 weather service facilities throughout the country by September 30. This decision was an economy move, a part of a zero base budget effort to reduce Federal expenditures. One of the weather stations to be closed is located in Bridgeport, Conn. Its closing will save six staff positions and an estimated $173,170 annually.

While economy in government is a laudable objective, the closing of the Bridgeport weather station is a particularly ill-conceived move. As the entire Connecticut congressional delegation observed in a letter to Commerce Secretary Kreps, closing this vital weather station on the New England coast will eliminate on-the-scene weather forecasting for the entire Long Island Sound region from Greenwich to Stonington, Conn., and the entire north shore of Long Island.

Other facilities—such as those at Hartford and Boston—cannot properly cover weather forecasting along the Sound. The simple fact is that coastal weather is far different from inland weather. I also understand that the Hartford weather station personnel already have difficulty handling their current assignment and, during weather crises, local officials are unable to communicate with the Hartford station because phone lines are constantly occupied. This is of critical importance as school systems, law enforcement agencies, and other units of local government must depend on the weather forecasts from the Bridgeport weather station, especially during the winter.

The recent winter blizzards which Connecticut has experienced attest to the need for continued, accurate weather monitoring. An inland facility is simply unable to accurately duplicate an on-the-spot installation.

Closing the Bridgeport weather station will be a false economy. I am hopeful, therefore, that the Commerce Department and NOAA will reconsider its decision and maintain this important forecasting activity. In this regard, I am pleased and encouraged to know that the Senate State, Justice, Commerce, Judiciary, and Related Agencies Appropriations Subcommittee will go into weather service reductions at Bridgeport and elsewhere thoroughly when NOAA testifies.

In order that our colleagues may better understand the depth of sentiment in Connecticut on this issue, I ask unanimous consent that two radio editorials broadcast by WELI in New Haven, an editorial from the Bridgeport Post, the Connecticut delegation letter to Secretary Kreps, and statements from two private organizations be printed in the RECORD.

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

EDITORIAL

What price economy? Back in 1969, the New Haven area lost the weather station located at Tweed-New Haven Airport. We were told then that our weather information thereafter would be coming from the weather bureau at Sikorsky Airport in Stratford. Now we learn that that facility will be closed down at the end of September.

If the events of recent days have demonstrated anything to us it is that the people of Southern Connecticut need a weather station, one that has time and people to accurately report on the weather conditions in our area. We need . . . and will continue to need . . . the up-to-the-minute forecasts . . . that factor in our unique geography, our proximity to Long Island Sound. It is not sufficient to give us forecasts originating from Windsor Locks as the government is proposing. This information misses the target as far as we in the Greater New Haven area are concerned.

We need information that will tell us with precision about the onset of conditions that might require school and commercial closings; information that will enable the boaters in our area to go out on the Sound with confidence in the weather forecasts; information that may be used by pilots who regularly pick the brains of the forecasters at Sikorsky to determine the safety of flying conditions.

It's time to let our elected representatives know that we disapprove of the planned closing of the weather bureau at Stratford; that, as taxpayers, we resent and deplore this shabby treatment.

Write to Help WTLI Save Your Weather, Box 816, New Haven, CT. 06504; we will forward your cards and petitions to our elected officials.

EDITORIAL

Nothing demonstrated more clearly the need for a local weather station than the huge snow storm that struck our area on February 6th.

As motorists struggled to free themselves from mountainous drifts . . . and business and social life virtually came to a standstill . . . as families waited and worried about those who had not yet Made It Home . . . and the collective consciousness of communities dwelled almost totally on the storm and what to do about it . . . decisions had to be made. Informed decisions. Based on fact. Not on conjucture. Not on irrelevant statistics that might be applicable 40 or 50 miles away. Rather . . . the need was for accurate information pertaining to the area in which we live so we could know what to expect from the weather and how to arm ourselves against its onslaught.

No question about it . . . says the city of New Haven's staff meteorologist, Ed Schoonmaker . . . the proximity of the weather bureau at Sikorsky Airport in Stratford was a significant factor in collecting the import data . . . and making the important decisions. And the chief meteorologist at the Stratford facility, Ray Edwards, points out that there are enormous variables between the weather here and the weather in Windsor Locks which would be the source of our reports and forecasts if the government does away with the Stratford bureau. Our position on Long Island Sound causes fluctuations from hour to hour . . . fluctuations which cannot be anticipated, ascertained or forecast from a far-away weather station.

We're sure you share our concern with maintaining the weather bureau in Stratford. Please send your cards, letters and petition in support to: Weather WELI, Post Office 816, New Haven, Connecticut, 06504. This is Frank Moore.

BOATS AND WEATHER

The announcement that the federal government intends to close its weather bureau at Sikorsky Memorial Airport has boat owners up in arms, and for good reason.

Conditions on Long Island Sound can change in a matter of minutes converting a calm sea into churning white water. Without advance warning of impeding storms or changes in the wind, boatmen, be they operators of sailboats or power craft, can be seriously endangered.

The weather bureau provides an invaluable serxice by informing the media of the potential for severe storms, permitting the pru-

dent sailors on Long Island Sound to be informed about weather conditions.

Some of these "salts" have banded together to form "Mariners to Fight to Save the National Weather Service." They join in a common cause with pilots, businessmen, school officials and just plain folk who rely on the weathermen in Stratford to help them plan their daily activities.

Washington continues to say southern Connecticut can depend on weather stations in New York and Windsor Locks for up-to-date forecasts of local conditions.

The boatmen say that's hogwash, and we agree.

The weather station at Sikorsky Airport saves lives and helps mariners protect their property from storm damage, according to the boatmen. Their voice of protest against Washington's verdict joins a loud chorus of petitioners who rightly insist the decision must be reversed.

WASHINGTON, D.C.,
January 31, 1978.

Hon. JUANITA M. KREPS,
Secretary of Commerce, U.S. Department of Commerce, Washington, D.C.

DEAR MADAME SECRETARY: We are deeply concerned with the announcement by Dr. George P. Cressman, Director of the National Weather Service, that the Bridgeport, Connecticut, weather station will be closed no later than September 30, 1978.

Closing this vital weather station on the New England Coast will eliminate on-the-scene weather forecasting for the entire Long Island Sound region from Greenwich to Stonington and the entire North Shore of Long Island. The annual cost for maintaining this station is only $173,170, and it is our firm belief that this is money well spent.

Testifying to its need is the Weather Bureau itself, which stated in 1969 that the Tweed-New Haven Airport weather station was being closed only because Bridgeport's weather station could cover both areas. Currently, Federal Aviation Administration tower personnel at the Tweed-New Haven Airport are required to make 24-hour weather observations. This service will shortly cease.

Elimination of all professional weather services from Bridgeport and New Haven will have a marked negative impact on the entire coastal area described above. We have been informed by Dr. Cressman that the areas in question will be able to rely on the Boston and Hartford weather stations. These two stations constantly rely on updating their forecasts with information received from the Bridgeport meteorologists!

The 1969 closing of the Tweed-New Haven weather station, predicated on maintaining a fully operational Bridgeport weather station, may have been a bureaucratic expedient at the time. However, we will not now be satisfied with the mere explanation that Boston and Hartford will replace Bridgeport's weather station. Those two stations are too geographically remote to provide the type of meteorological service required by the Connecticut and Long Island users who constantly depend on Bridgeport's weather service.

We respectfully request that you look into this situation immediately and that you reconsider the closing of the Bridgeport weather station. Your prompt attention to this very critical matter will be appreciated, and we anxiously await your response.

Sincerely yours,

CONNECTICUT MARINE
TRADES ASSOCIATION, INC.,
March 7, 1978.

MRS. JUANITA M. KREPS,
Secretary, Department of Commerce, Washington, D.C.

DEAR MRS. KREPS: I am writing on behalf of the 200 members of the Connecticut Marine Trades Association to express our strong and total opposition to the proposal to close down the weather station located at Sikorsky Airport in Stratford, Connecticut.

Many of our customers use their boats on Long Island Sound. Many of them are boat owners simply because they are fishermen who enjoy their sport on Long Island Sound. A boat is critical to them if they want to fish. Equally as important to all boat owners using the Sound, given the nature of the weather in this area, is accurate and reliable weather information. If they are out enjoying a day's fishing, they may only have a transistor radio and the weather reports they receive over the radio can be important.

They need accurate information from a relatively local location. The differences between reports from Stratford and those from Bradley Field in Windsor Locks are often significant. Information collected and disseminated from Bradley Field may come too late to the boater on the Sound. On the other hand, information from Stratford can give the boater time to pack up and get safely back to shore before a storm.

Since much of our weather comes from the south and the west, the Stratford location is ideal for covering and warning the Sound, much of which is north of and almost all of which is east of Stratford. For the same reason, weather systems may be on the Sound or close to it before Bradley Field can report them.

In short, a weather station in Stratford is vital to the safety of the thousands of boat owners who use Long Island Sound.

While CMTA applauds the effort to hold the line on government spending, we feel the closing of the weather station at Stratford is both unnecessary and foolish. We urge you to support restoration of the funding for that weather station.

Sincerely,

R. O. PALMER,
Chairman of the Board.

POSITION PAPER TO KEEP BRIDGEPORT WEATHER STATION OPEN

We are surprised and distressed to learn the United States Department of Commerce plans to shut down the Bridgeport, Connecticut weather service station at Sikorsky Airport, as of October 1, 1978. If this decision is to be changed it must be acted upon before March 31, 1978. Budgetary cuts are given as the reason and Windsor Locks (Bradley) as the alternative.

We, the United Boat Owners of America, feel this shut down could be disastrous to the life and property of coastal residents and all mariners using Long Island Sound. We ask you to take the time to read and seriously consider the following.

First, some observations regarding aviation interests.

1. The aviation industry at Sikorsky will not be comfortable at a sub-standard airport. And some may be forced to move to Hartford or, more probably, Westchester.

2. Instrument landings (ILS) will no longer be practical. While this could be overcome by an FAA "observer", it borders on amateurism. and offers no protection for transient recreational and business pilots who would be prohibited from landing if no "observer" were available.

3. Coastal weather is far different from inland weather. There is no way that Bradley can accurately duplicate an on-the-spot installation.

4. Student and "low time" pilots rely heavily on the weather station for planning cross-country flights. They actually visit the station, pore over the weather charts and discuss their flight with the weather personnel. They are very concerned about having a safe flight and many would be in trouble if they encountered bad weather.

But, we are even more concerned about coastal residents, and mariners in particular.

At present, mariners using Long Island Sound do not have access to current weather information. The "stale" weather they do get is usually too general to be reliable. They listen to their household radio and tune in disc jockeys or news programs. Many have purchased a weather radio and listen to NOAA (New York 162.55 FM) and get a 3 to 4 hour old marine report covering 6,000 square miles, from Block Island to Manesquan, that includes Long Island Sound and New York Harbor.

In short, the quality of weather information for mariners is a disgrace. The irony is that the information already exists, but is not accessable to the mariner.

On behalf of our Connecticut and New York members and all mariners and Coastal residents living on or using Long Island Sound, we ask your support to make current weather information available to all.

To this end, UBA proposes the following.

1. Sikorsky (Bridgeport) weather station must remain in operation.

2. Sikorsky (Bridgeport) weather station be included in aviation weather reports.

3. NOAA weather (N.Y.C.) at Rockefeller Center be directed to retape the aviation weather broadcast, add it to their own weather report, and continue to broadcast on 162.55 FM (popular weather band).

4. NOAA weather (N.Y.C.) at Rockefeller Center be directed to upgrade reports hourly between the hours of 6AM and midnight.

The foregoing proposals would cost nothing. NOAA (N.Y.C.) already broadcasts on tape, as does aviation weather. The end result would be hourly weather for all when they need it.

In closing, we again ask your support. The good that will come from keeping this weather station far outweighs the cold indiscriminate decision of a budget cut.■

ALCOHOL FUELS

Mr. BAYH. Mr. President, yesterday I shared with my colleagues my sharp sense of disappointment with the Department of Energy's progress to date in the alcohol fuels area. At that time I included copies of testimony given at Appropriations Committee oversight hearings on alcohol fuels which I chaired on January 31, a copy of the Department of Energy's recently released position paper on alcohol fuels and a copy of S. 2400, my National Alcohol Fuels Commission bill. I inadvertently failed to include a copy of a letter I sent to Secretary Schlesinger which indicated my dissatisfaction with the Department's progress.

Mr. President, I ask unanimous consent that a copy of the letter I sent to Dr. Schlesinger be printed in the RECORD.

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

COMMITTEE ON APPROPRIATIONS,
Washington, D.C., March 16, 1978.

Hon. JAMES SCHLESINGER,
Department of Energy, Washington, D.C.

DEAR MR. SECRETARY: I know that you and I share a mutual concern about the very real possibility of a liquid fuels shortage sometime in the 1980's. Last spring when the President unveiled the National Energy Plan, he emphasized the importance of an effective national energy policy and compared the effort needed to meet this challenge with the "moral equivalent of war." I have been encouraged by the high priority placed by the President on resolving our energy problems and have strongly supported most of his efforts over the past year.

One crucial ingredient missing from the National Energy Plan was an accelerated program for introducing a mix of alternative energy sources—especially liquid fuels—into our energy budget in a timely fashion. In light of this earlier omission. I have welcomed the Department's efforts this year to fashion a near-term program to assure development of substitutes for our diminishing fossil fuels.

As we look toward the future, I think it is clear to most of us that there is not going to be one answer to our energy problems, but that future supplies will come from a number of diverse sources. Those of us with responsibility for shaping government policy owe it to the Nation to explore every option available to us as thoroughly as possible.

As you know, I believe that utilization of alcohol fuels in a variety of settings is a near-term option that has not received the attention it merits. I have no doubt that alcohol fuels can become efficient and economical energy supplements with a relatively small federal investment if we apply our best technology to this effort.

In light of this conviction, I am quite disappointed with the Department's efforts to date to explore the potential of this alternative fuel. I have just received the Alcohol Fuel Task Force Position Paper on Alcohol Fuels. The Position Paper contains no information beyond what the Department submitted in response to the alcohol fuels Appropriations Committee oversight hearings which I chaired on January 31. Moreover, it was not accompanied by the revised program plan and budget information associated with it that the Committee requested at that time. It does reflect a lack of effort, commitment, and foresight with respect to this energy source on the part of the Department, which I find disturbing. It also indicates that DOE has made no discernible progress on alcohol fuels since last fall when the Task Force was formed.

I would hope that the Department will, in fact, take a fresh look at this area, as your witnesses in our January hearings indicated. I reiterate my request that DOE move imaginatively and aggressively to tap the energy potential of our most abundant and renewable resources.

I look forward to receiving the remainder of the Task Force Report, which I understand contains a revised alcohol fuels program plan and indicates what resources the Department would need to meet the Task Force goals.

I seek your earliest possible reassurance that the Department will move to meet its responsibilities in this area. I hope that you will construe these comments in the constructive manner in which they are offered. I will do whatever I can on this end to help you out and would like to proceed as allies and not adversaries.

Sincerely,

BIRCH BAYH,
U.S. Senator.●

INDEPENDENCE FOR LITHUANIA

● Mr. RIBICOFF. Mr. President, I join with the more than 1 million Lithuanian Americans across the Nation in celebrating the 60th anniversary of Lithuanian independence.

Lithuania has a rich, vital heritage dating back over 700 years. When independence was declared by the Republic of Lithuania in 1918, it was a testimony to the perservance of the Lithuanian people and the strength of their struggle against foreign domination. The next twenty years saw the Lithuanians thrive in their political freedom. They prospered in the absence of economic oppression, and their culture flourished. The forcible annexation of Lithuania by the Soviet Union in 1940 crushed all apparent signs of independence.

The denial of self-determination and the repression of dissent continue today, and the prospects for change rarely improve from one year to the next. Yet the desire for independence within the hearts of the Lithuanian people has never lessened. Though religious and political freedoms are only a distant goal now, the Lithuanians have never ceased their dedication to that goal. Thousands of Lithuanians last year spontaneously demonstrated in the streets of Vilnius for their basic human rights. Even though Soviet troops crushed this uprising, it was a graphic example that the Lithuanians will never accept repression as a way of life, nor will they let their freedom be compromised. Such determination to maintain their national identity has earned the Lithuanians the respect of free men everywhere. It has also fueled the struggle of Lithuanian Americans who work tirelessly for the establishment of a just society in their homeland.

President Carter and his administration have continued the longstanding U.S. policy of nonrecognition of the forced incorporation of the Baltic States into the Soviet Union. With human rights as a basic point of our foreign policy, those rights recognized by the Helsinki agreements deserve constant attention in Eastern Europe. The legitimate aspirations of the Lithuanian people cannot and will not be satisfied by empty gestures from Soviet leaders. We must insist on the reuniting of families, to urge release of political prisoners, and to permit the practice of religion without the threat of reprisals.

Mr. President, it is fitting that Americans of all heritages join with Lithuanians in proclaiming their proud struggle for self-determination and basic human rights. Their past accomplishments and their present efforts will never be forgotten. With our help and the help of freedom-loving peoples everywhere, their dream will some day be a reality.●

INDEPENDENCE FOR ESTONIA

● Mr. RIBICOFF. Mr. President, I salute the Estonian people and their commitment to self-determination on the 60th anniversary of the Declaration of Independence of Estonia.

After defending their nation against foreign aggressors for nearly 2 years after their independence was declared, the Estonians were finally able to celebrate this freedom in 1920 with the adoption of a democratic constitution and a series of reforms aimed at establishing a democratic society.

Like its Baltic neighbors, Estonia suffered the forcible annexation of its land by the Soviet Union in 1940, never to regain this lost freedom. But no foreign power could deny the Estonians their desire to be free. Though the Soviets have attempted to convince outsiders that Estonians enjoy complete freedom today, their gestures have not subdued Estonian desire for true independence.

Estonians have suffered under Soviet domination—forced relocations to isolated areas, denial of human rights, and attempts to obliterate the last vestiges of the once thriving Estonian culture. In view of this suffering, the courage and determination of Estonian Americans who work to keep alive the Estonian heritage deserve our support.

The history of the Estonian peoples' fight for freedom serves as an inspiration to the entire world. We must continue to voice our concern for the treatment of these people and focus attention on their plight. If others can capture the commitment of the Estonians themselves their struggle may yet be won.●

MACHINISTS' PRESIDENT WINPISINGER ON ENERGY AND JOBS

● Mr. McGOVERN. Mr. President, on yesterday, the Subcommittee on Energy of the Joint Economic Committee, chaired by the distinguished Senator from Massachusetts, Senator KENNEDY, conducted hearings on the relationship of energy policy to the creation of jobs. As a member of the committee, it was my privilege to participate in these important hearings.

One of the witnesses who testified on yesterday was Mr. William Winpisinger, president of the Machinists Union. Mr. Winpisinger is one of our most creative, courageous, and effective labor leaders.

I ask unanimous consent that his provocative statement be printed in the RECORD.

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

DETAILED STATEMENT BY WILLIAM W. WINPISINGER

Mr. Chairman, Members of the Committee: My name is William W. Winpisinger. Since July 1977, I have been privileged to serve as International President of the International Asscciation of Machinists and Aerospace Workers.

IAM membership is found in nearly every sector of the U.S. industrial complex—aerospace, air transport, automotive, construction, electronics, light manufacturing, metals fabrication, machine and machine tool, tool and die, maritime, shipbuilding, nonferrous metals and mining, and railroads.

All these industries are highly sensitive to energy supplies, sources and prices. The nation's energy policies, or lack of them, directly impact the jobs, income and security of IAM members employed in them.

Regrettably, it is not possible to report in any definitive way, or to quantify by sector of Industrial Occupation category, just what the extent of energy impact is on the IAM membership; except in a negative way. We learned, for example, that some 15 to 18 thousand IAM members in Ohio were idled from work for approximately two weeks during the natural gas shut-off in the winter of 1976/77. In 1974 during the oil embargo, we learned that 2000 air transport workers were idled when the airlines used the scare as an excuse to curtail marginally profitable and unprofitable flights and schedules. We also learned during the embargo scare that some 8000 civilian aircraft manufacturing employees suffered reduced worktime, layoffs and loss of income, due to an emergency low priority for fuel for civilian light aircraft aviation purposes.

Not only do we not know the impact of energy inputs and alternative energy sources on employment within industries where we

have members, we are appalled to learn that there is no definitive analysis or study for the nation on a macro basis. The Department of Energy has made no such study. The Office of Management and Budget has made no study. The Commerce Department has no study. The Bureau of Labor Statistics has no study. And the Congressional Research Service has no energy/employment analysis or study.

In effect, Mr. Chairman, what we have is the evolvement of a national energy policy, albeit it is far from coherent, that concerns itself with control, allocation, prices and profits, but utterly fails to take into consideration its impact on the human factor of production.

We can develop the most profuse energy production and utilization program conceivable, but if it results in widespread displacement of human labor, what good will it do?

As Richard Grossman and Gail Daneker have pointed out in their study, *Guide to Jobs and Energy*, industry has historically substituted energy for labor. After substitution for labor in each process of the production chain, the total number of workers needed for production decreases. (See Appendix A.)

This fact alone seems to contradict the current industrial management argument, and of government spokespeople, too, that "more energy leads to more jobs."

According to Grossman and Daneker, greatly increased energy consumption in primary metals; stone, clay and glass; food; chemicals; and paper products has resulted in static or declining employment over the past 20 years. They note the same for steel, aluminum, and agriculture. They also note that between 1961 and 1973, electric utilities increased their kilowatt output by about 130 percent, their revenues by 260 percent, their construction costs by 340 percent. But employment in electric utilities increased only 21 percent.

Indeed, productivity is linked directly to industrial energy consumption. And, herein lies the dilemma of IAM members and working people in general. As the productivity index goes up, jobs and job opportunities appear to decline.

Further, it is no longer safe to say, as we often do, that displaced production workers will find employment in service industries. Will they find employment as supermarket clerks? Boxed beef and packaging machinery are replacing meatcutters and stock room clerks. As bank tellers? Electronic fund transfers and automatic drive-up windows are taking over. Centrex has already replaced telephone operators. So has taped and prerecorded messages. And computerized switching and billing systems are displacing thousands.

In the IAM, direct job loss is coming about in the highly skilled stamping, machine tool and tool and die industries through the Numerical Control (computerized) tools and automated control panels. The energy required to operate these machines is electricity, and electric consumption is on the increase. But the number of jobs decreases.

The point is, increased energy consumption may not create jobs in the economy. There may not be a correlation between energy growth and the economy. Certainly it is true in certain microeconomic instances.

At this stage of the game, on a macro-basis no one knows for certain. But we should know. It is time, perhaps, to begin focusing on energy efficiency, rather than labor efficiency. A good share of the energy supply problem may be found in wasteful, expensive and mismatched uses of energy. Such a focus may save jobs as well as en-energy.

Lack of reliable energy—employment impact data not only inhibits the deliberations and proceedings of this distinguished committee, it also impedes development of a comprehensive national manpower policy and achievement of a full employment economy. The latter, one assumes, is what really matters.

It would seem reasonable to suggest that the Bureau of Labor Statistics in the Department of Labor and the Department of Energy form statistical analysis and support groups to provide the Executive, the Congress and the public with reliable energy impact data.

Similarly, it would seem reasonable to expect that national energy programs emanating from the White House would include employment impact analyses, and that future energy development, conservation and conversion proposals and programs would contain job impact analyses. There is no other way for working people and trade unions to compare the relative merits of one energy source with another.

But working people are not only concerned with their jobs, they are also concerned with the prices they pay for home energy uses. There was a time when nonprofit consumer-owned and publicly-owned power and utility agencies and systems provided a cost yardstick, against which costs and rates of private investor-owned utilities could be measured. In that way consumers and regulatory agencies had some objective means to determine when excessive consumer rates and rate increases were occurring.

That yardstick principle has been seriously eroded over the past two decades, an erosion due in no small part to a lack of access to valid investor-owned cost and financial data. If measurement of energy efficiency is to be realized, if working people are asked to sacrifice their jobs to greater energy inputs and if consumers are to be asked to pay for energy development and conversion projects, then it is only fair that they be given information which comes from a source other than the energy companies and utilities themselves. So we would recommend that Department of Energy or perhaps SEC make this data available on a regular and timely basis.

Working people are also dependent on energy for transportation to and from work. Gasoline and oil prices are a large part of their "costs of doing business." Energy orthodoxy requires them to continue relying on gasoline for the bulk of their transportation needs, at least until the year 2000. Any new technologies with respect to auto fuels is not seriously considered, although conservation measures such as speed limits and fuel consumption (mpg) standards are. Meantime, the petroleum glut has not noticeably reduced gasoline pump prices, which soared 77.4 percent from the beginning of the OPEC embargo through first half of 1977. Profits of leading oil companies during the same period increased an average of 103.4 percent, while average weekly earnings for workers increased 38.5 percent over that nearly six-year period.

It is amazing how the economics of scarcity and the law of supply and demand inevitably redound to the profit ledgers of the energy companies and the glory of free enterprise.

ENERGY OVERVIEW AND COMMENTARY

Growth demand for energy is based on orthodox assumptions related to population and GNP growth. The assumption is that energy demand increases exponentially over time, and must, if the production of goods and services is to keep pace with increases in the number of people and their needs and demands.

In the near future, that is up until the year 2000, it is assumed by orthodox analysts that energy supply will lag behind demand. How they can be certain is questionable. Available figures describing supply and reserves of fossil fuels and uranium appear to be under the control of and dominated by the energy companies. It is to their advantage to understate reserves and current production. It is further assumed that up until the year 2000, the major portion of our energy supply must come from known and developed technologies. This assumption is based on a historical precedent that 20 to 30 years is required from development of a new technology to its commercial application.

Hence, according to the orthodoxy, in the near future, our energy supply must continue to come from fossil fuels, nuclear reactors, and hydro electric power.

The fallacies of these assumptions appear to be several. First, there is currently an oil glut, due to stepped up domestic discovery, Alaska pipeline and North Sea oil production, and the federal strategic petroleum stockpile program. (Energy Preparedness).

Secondly, the production of coal and conversion from natural gas to coal-fired industrial and electric generating plants has increased. Western strip mining of low-sulfur coal has increased and, until the recent strike by coal miners, eastern deep mining operations were on a sharp upswing.

Third, natural gas reserves, according to industry sources, appear to be declining, but, natural gas producers argue, if prices are deregulated, then they can greatly increase their supply. Apparently, the answer to this riddle will become known when Congress makes its decision on deregulation. If natural gas prices are deregulated, then one is left to surmise that the producers will release a new set of supply figures, which will relieve the natural gas shortage. How much natural gas may actually be in the ground, will probably remain a mystery for decades, or until someone other than the producers make the surveys, gather and report the statistics. In any case, following the producer's logic, we should expect increased natural gas production in the near future, if the price they are exacting is met. The issue clearly is one of price in the near term, rather than supply, and the shortage is in the figures, not in the ground.

In the case of nuclear energy, fission currently provides about nine percent (some sources say one percent—it depends upon whose figures one uses) of national needs. Industry and government proponents of nuclear power project that it will provide 20 percent of total electical energy by 1985 and about 50 percent by 2000. These projections are based on the assumption that there are sufficient domestic uranium reserves to feed some 232 planned nuclear plants, an assumption which may be open to doubt, if Canadian sources of uranium cannot be tapped. Again, the energy companies supply their own figures, so there is no objective way of knowing the extent of uranium reserves. Some existing fast breeder reactors are already judged to be technologically outdated, but industry and orthodox experts are touting fission on the basis that, by the time uranium reserves are depleted, a breeder reactor which converts unusable uranium into plutonium, will be on the line in force. In the meantime, the federal government will have to have overcome critical safety and waste disposal problems. This is a little bail-out program destined to cost taxpayers several billion dollars by 1985, the earliest possible date for permanently disposing of nuclear wastes, according to OMB.

But again we have a basic contradiction between the orthodox economic assumption of scarcity on the one hand, and industry assurances of a plentiful supply of nuclear energy on the other.

It is the kind of double-think and contradiction that permeates the economics of the entire energy industry.

As for nuclear fusion, there is no known way to control the one-million degree heat and energy release that would make it useful. For this source, the experts are right. There won't be a significant increase in supply of energy.

Orthodox thinking gives little credence to geothermal, wind, and solar power, in our energy future. Noxious gases, excessive salinity and land surface collapsing are said to prevent substantial geothermal development. Wind once generated electricity and pumped water on millions of American farms, but it is now argued that to generate one megawatt of power requires a windmill of 180 feet in diameter on a 200 foot tower, with an average wind velocity of 30 miles per hour. Thus, thousands of towers would be needed to replace one coal generating plant. Perhaps, but think of the jobs that could be created in manufacturing if farmers went back to using their own individual windmills.

Solar energy gets more attention than geothermal or wind, but even so, it is predicted that by 2000, only one-third of new construction and one-third of old construction will be fitted with solar heating systems. It is conceded by the orthodoxy that solar heating will play an increasingly larger part in meeting future energy needs, but we are cautioned not to be overly optimistic about solar heating systems, since the energy supplied for this purpose would be only about five percent of the national energy need.

There is a curious observation to be made in this survey of the orthodox assumptions underlying our present energy policy. Apparently there is no prospect of supply ever catching up with demand. Of the fossil fuels, it is said the petroleum supply will be exhausted, possibly within 30 to 40 years; natural gas supplies will be exhausted, possibly in 10 to 20 years; coal will be exhausted, possibly within 300 to 500 years. Hence, we can see why the President's National Energy Plan puts so much emphasis on coal.

About nuclear power, it is said that conventional fission reactors will exhaust their low-cost fuel supply (uranium) possibly within 30 to 40 years. Fast breeder reactors are thought to be able to greatly extend the potential fuel supply (plutonium) of fission reactors, but none say it will be low cost and safety and waste disposal problems, as well as the President's non-proliferation desires, must be solved. Fuel supply for fusion reactors is virtually unlimited, at what cost is unknown, but fusion's feasibility is still to be proven.

It is said that the number of sites for future hydroelectric power is extremely limited, but overlooked is the fact that only 800 of 50,000 dams in the U.S. are licensed to produce power. Thus, there would appear to be a great deal of potential if existing dams were to be fitted with turbine generators. That would create a considerable number of jobs in electrical machinery and electrical equipment manufacturing, construction and maintenance. Power generated at small dams could be used for individual industrial units or possible even individual farm needs. Or it could be used as peaking power for larger systems.

Neglected in the orthodox survey of power sources are synthetic petroleum products produced from coal, although a number of energy companies are currently engaged in government-funded synthetic research and development projects. It is conceivable that synthetics will supply a significant portion of not only energy needs, but petrochemical needs in the near future. Coal gasification demonstration projects are already in existence. Synthetic motor oil is on the market in limited supply and petroline, a synthetic gasoline, may be marketed next. DOE Secretary Schlesinger has unofficially put priority on creation of a liquid fuel replacement for the transportation sector.

All liquefied natural gas (LNG) does not have to be imported. There are remote areas of the U.S. where it might be economically feasible to process it, too.

Overlooked also is biomass energy, which could be a significant source of energy on farms and ranches and in small rural communities, assuming they are given the means and initial funding to construct and operate biomass plants. Loans and grants are now available for rural and small community water and sewer systems. Electric generation from biomass and solid waste disposal plants could similarly be funded, thus creating jobs and job opportunities in thousands of depressed rural communities. And the research and development, design and engineering, construction and manufacture of these small generating plants would create thousands of jobs upstream.

But one should focus more closely on the development and utilization of solar energy. There are two basic systems for solar energy production. One is at hand and familiar. That is terrestrial solar power. The second is in the research and development stages and futuristic. That is Solar Power Space Satellites.

First, all the technology necessary is in hand for terrestrial solar power development for hot water and building heat. Many firms are already marketing solar home heating and hot water heating systems. The American Solar Energy Association has outlined a comprehensive federally assisted program to have 11 million homes in America fitted with solar hot water systems by 1985. This contrasts with President Carter's goal of 2.5 million homes by 1985 and DOE Secretary Schlesinger's goal of 1.3 million solar homes by 1985.

The State of California, by the way, is well on the road to solar home heating and will have more solarized homes in 1985 than the entire nation.

In Japan, 2 million homes have solar hot water heating. Israel has 200,000 solar homes. And Australia requires that solar heating units be installed on all new buildings constructed in the energy-short northern provinces.

There is absolutely no reason why technology should be used as an excuse to delay or prevent the installation of solar hot water and building heating systems. It must be promising, for an energy giant such as Exxon to already be in the business. And a giant aerospace firm, Gruman Corp., is on the market with solar passive and active building heat systems. (A passive system stores energy where sunlight strikes building walls or floor or roof and is capable of providing 80 to 100 percent of a structure's space conditioning requirements, but cannot easily be added to existing structures. An active solar system can be bolted onto roofs or walls of existing buildings and can supplement conventional furnaces, by moving, with fans and pumps, solar heated air or liquid to storage areas, from which the heat can be withdrawn as needed).

Solar is also being applied industrially, at a soup canning plant and in laundries and car washes in California; at a fabric drying plant in Alabama; at a concrete block factory in Pennsylvania; and for pasteurization at a brewery in St. Louis.

According to the American Solar Energy Association, the potential for solar application is 45 million homes, 10 million apartment houses and 15 million commercial and farm buildings, which could be retrofitted, and 2 million new structures built each year.

The beauty of solar is that it is renewable, nonpolluting and its installation is labor intensive.

In fact, the Solar Energy Association, in testimony before the House Committee on Small Business, has very forcefully demonstrated that conversion to solar energy can be looked upon as major employment program for the hard core, low and semiskilled unemployed. But a major solar conversion effort would also provide thousands of jobs for skilled carpenters, sheetmetal workers, plumbers and other building tradesmen who are suffering from chronically high unemployment. Upstream from installation, thousands of fabricating and manufacturing jobs would also be created.

The Solar Heating and Cooling Demonstration Act of 1974, has been in operation for three years now. The technology and reliability of solar heating and cooling have been proven. The major barrier to an all-out solar conversion program is front-end money for mass production and marketing and initial installation costs for consumers. In terms of employment, taking the strain off the advertised "shortage" of fossil fuels, and nuclear power, it is sound economics and common sense for the federal government to boost solar power on a massive scale.

There are two precautions that should be taken however. One is that the giant energy companies are already casting a covetous eye upon solar. This is in line with their "total" energy concept. The established energy companies should not be permitted entry into the solar industry. If they are permitted entry, it will be just a matter of time before history repeats itself and the cost of solar power will be pegged to the monopolistic price of petroleum, natural gas, coal and uranium. Solar power must be the people's power. Solar power must restore the low-cost competitive yardstick that has been missing from the energy scene for over two decades.

The second precaution is that, in its infancy, the solar power industry will be highly susceptible to confidence games, quick buck artists, and sham manufacturers and installers. The industry and consumers must be protected against these opportunists and predators, through an enforceable licensing system at the state and local levels. Warranties for work, parts, service system performance and safety must be strict and adhere to standards promulgated and for review by the Consumer Product Safety Commission, Bureau of Standards, and Housing and Urban Development Department.

The far term future for solar power may be further augmented by the Solar Power Satellite. Futuristic in concept and design, the Solar Power Satellite is at least as feasible at this stage, as is nuclear fusion. Simply put, the idea is to put a large satellite in geosynchronous orbit some 22,000 miles above the earth. In that orbit, the satellite is constantly illuminated by the sun. The solar rays are converted to electricity by an array of solar cells or photovoltaic cells, which generate electricity directly when sunlight falls on them. The electricity is then transmitted to an Earth receiving site, from where the power distribution system will fan-out to communities and homes. It can be tied-in with existing transmission and distribution systems. Huge and heretofore unknown amounts of electric power can be generated by this method—several satellites could produce more electricity than all other alternative sources combined now produce.

Barriers to Solar Power Satellites becoming reality are large. The first is a safety and environmental problem stemming from the microwave beam which would transmit the energy from space to the earth collector. Microwaves can be extremely hazardous if not kept within minimal strength tolerances. Microwave environmental-effects experiments have yet to be completed and the danger eliminated. A second barrier is the cost of the program. Such an undertaking is similar in scope and cost to the Apollo program, or from $60 to $80 billion. At this early stage, electric power from the Solar Space Satellite is not cost-competitive with other sources.

Since the technology to develop the system is at hand, and since its development would provide socially useful employment for a large corps of highly trained scientists and engineers and highly skilled technicians and craftspeople, research and development funding by the federal government ought to be encouraged, and expanded. Currently

some 12 or 15 aerospace firms have been or are involved with Solar Power Satellites. However, if solar power is to be the people's power, one would expect such a vast publicly funded program to be federally-owned and operated, rather than the property of a few private corporate giants.

As a general statement, when the survey of growth demand, development status and prospects for future energy from all sources is completed, one can only conclude that all sources must continue to be developed, with as much public benefit emphasis as possible. Until employment impact analyses are made, until supply, demand, reserve and private cost and financial data are reliably reported, then working people have no choice but to accept the assumptions of orthodox economists and energy experts.

For if the lights do go out, or the power is shut off, or the oil does stop flowing, working people will be the last to know and the first to find it out.

CONSERVATION

Meantime, there are certain conservation measures which can be undertaken to prolong the life of nonrenewable resources, and hopefully will delay further increases in energy prices.

A functional definition of conservation is taken from Dr. Duane Chapman, in *Energy Conservation, Employment and Income,* published last year.

"Conservation in a philosophical sense has taken two partly contradictory meanings, one emphasizing the preservation of natural environments and the other giving its concern to the public interest in the proper management and development of natural resources."

Energy conservation, therefore, is not simply a matter of "returning to earth" principles. It is not a no-growth economic principle. It is not a return to the horse and buggy days or some idyllic and pastoral early 18 Century never-never land.

Energy conservation is not abandonment of the nation's technology base, nor the impediment to future technological development. It is not lower living standards or a downgrading of skills and wage and income levels.

It may be development and mass marketing of the electric automobile. It may mean the upgrading of skills and income levels of mechanics, tradespeople and workers in general.

Energy conservation is more than turning off lights, abiding by speed limits, setting the thermostat at 65 degrees and wearing warm woolen sweaters indoors. It is corporate responsibility to refrain from non-competitive and price gouging practices. It is corporate responsibility to serve the consuming public first, at the expense, perhaps, of profit maximization. It is government responsibility to regulate the regulated in the interest of the public and social accounting system.

Energy conservation is a greater sharing of privately held, whether usurped or purchased, resources, with members of the public at large.

CONTROL OF ENERGY COMPANIES

If we are to get a handle on the mind-boggling dimensions of the energy issue, then we must somehow rise above the laws of economics that are distorting the discussion.

We must, instead, raise the issue on ethical grounds. We must infuse and elevate the discussion, to the plane of justice and equity. These human values must become the common denominator in solving the energy crisis.

With that understood, we can then reduce the problem to five manageable components. These five components of the energy problem are: Control, allocation, prices, profits, and sacrifice.

Control is the key to the other four elements.

The energy companies seized control of the oil industry at the turn of the century. That is well known. What may be less well known is that they became multinational oil companies after World War I, when they, with considerable and indispensable help from the U.S. State Department, gained valuable concessions in the Mideast. They were in Mexico before that. One of the historical amazements of that turbulent period in Mexican history is that the American oil interests were able to prevail upon both sides of the Mexican civil war to preserve their oil fields and pipelines. Apparently that is what General Pershing was doing down there. In reality, the Punitive Expedition was an oil preservation operation.

Another measure of the control and power of the oil interests occurred during World War II. Allied forces were alarmed by fuel shortages. The Roosevelt Administration proposed public acquisition of the holdings in Saudi Arabia. That made eminent sense in terms of national security and the war effort. But it didn't make sense to the American oil interests. Operating from within the war councils, they torpedoed that proposal, and another, which called for construction of a government-owned refinery and pipeline in the Middle East. They termed public ownership as "fascist" and argued it would shackle "free enterprise." Standard Oil of California, Texaco, Jersey Standard and Mobil blocked the effort. The concern was not the war effort, rather it was control over the supply of crude and the mischief it might cause to their pricing policy if the government delivered and sold to independents outside the fraternity.

Now Franklin D. Roosevelt was a powerful President. World War II was a powerful cause. But the oil companies were more powerful than all.

These are but two of many historical examples which demonstrate what we mean by control, with control meaning power. The oil companies have it and the government and people do not.

Currently, the multinational energy companies maintain and perpetuate their power through the manipulation of at least five levers of power.

First, Exxon, Mobil, Gulf, Standard of California and Texaco are, for all practical purposes, part and parcel of the OPEC Cartel. Along with British Petroleum and Royal Dutch Shell, they comprise the "seven sisters," who've dictated production, distribution, sales and prices since the 1920s, for Iraq, Iran, Saudi Arabia, and Kuwait.

All are vertically integrated, i.e., they not only drill and pump crude, but they refine, transport and sell petroleum products through their own retail outlets. "From the wellhead to the gas pump" is the common expression.

In spite of the Arab embargo, in spite of the takeover of the oil lands themselves, by the Saudis, the Iranians and others, in spite of the OPEC countries arbitrarily increasing the price of crude fourfold, in spite of all this, Exxon, Mobil, Standard of California, Gulf and Texaco remain in the Middle East doing business as usual and enjoying the new artificially high world prices for oil.

And to remain there, they have had to influence, if not dictate, U.S. foreign policy, while assuaging the chauvinistic temperaments of kings, shahs and sheiks.

The companies are in Venezuela and Canada, too, and in Algeria and Indonesia and Alaska and the North Sea and the Antarctica. But they have used the OPEC Cartel as a scapegoat to absolve themselves from any responsibility for the energy crisis and all the while they are part of it and reaping its benefits.

A second lever of power used by the energy companies is the joint venture. There are domestic joint ventures and foreign joint ventures. There are horizontal joint ventures and vertical joint ventures. There are temporary and permanent joint ventures.

All are used for one primary purpose: to reduce the rigor and risks of competition.

The joint venture is not a subsidiary; it is a step child; it is a separate corporate enterprise in which the bulk of the stock is owned by two or more parent companies.

There are joint venture pipelines; joint venture refineries; joint venture exploration companies and joint venture bidding combinations for offshore and oil shale leases. The Alaska Pipeline is a joint venture.

This joint activity would seem to be prima facie evidence of anti-competitive abuses. Yet Congress and the Department of Justice are amazingly tolerant. No one knows how many joint ventures there are among the oil companies. Experts agree there are hundreds.

Exports also agree that joint ventures avoid competition; provide a common meeting ground for supposedly competitive firms; result in the exchange of information and production and marketing planning; concentrate economic power; and foreclose economic participation on the part of alternative businesses and potential competitors. And, needless to say, joint ventures have not led to lower prices for petroleum products.

Such behavior amounts to merger, which could be prosecuted under the anti-trust laws. In fact, it has become clear, in view of the current energy debate, that we are dealing with one giant petroleum octopus with only its tentacles labeled Exxon, Gulf, Texaco, etc.

The third lever of control and power exercised by the energy industry is the interlocking directorate.

The Clayton Act states, "no person at the same time, shall be a director in any two or more corporations . . ." which are engaged by virtue of their business and location of operations, as competitors.

Tell that to the energy companies.

Primary interlocks occur between oil companies and other energy companies. General Dynamics, you may be surprised to learn, is a major coal producer, and has a director sitting on the board of Diamond Shamrock Oil Company. Republic Steel is also a big coal producer, and shares a director with Standard of Ohio. Republic Steel and Marathon Oil are also interlocked through one director.

In utilities, we find interlocks between Mobil and Consolidated Edison, Standard of Indiana and Commonwealth Edison, Standard of Ohio and Detroit Edison, and Getty Oil and Southern California Edison.

Imagine an environmentalist walking into a Con Ed board meeting and suggesting it switch to solar power, with the Mobil Oil director sitting there!

There's more. The oil companies are locked into uranium mining and milling companies, liquefaction and even solar energy research and development firms. And, to a lesser extent, natural gas.

The glue that binds this welter of corporate relationships together is—money. And money is the fourth lever the energy companies use to consolidate and expand their power.

At last count, fourteen banks were tied to 18 of the largest oil companies, through interlocking directorates. All the big names are involved: Exxon and Morgan Guaranty; Exxon and Chase Manhattan; Exxon and Bank of America; Gulf and Mellon National; Mobil and Chemical Bank; Mobil and First National; Texaco and Continental Illinois; Texaco and Chemical; Atlantic Richfield and Chase; Atlantic Richfield and First Chicago. There are dozens more. A diagram showing the lines running from oil companies to banks and back, looks like a piece of string art.

Banks aren't the only financial tie with the energy companies. Insurance companies, investment companies and foundations are very much a part of the complex, too.

For example, Continental Oil Company (Conoco) has primary interlocks with Bankers Trust Company, Morgan Guaranty and Continental Illinois Bank & Trust. These banks, in turn, have interlocks with insurance, investment, and other energy companies.

In case of the Conoco and Morgan Guaranty tie, secondary interlocks occur with four of the nation's largest insurance companies—John Hancock, Aetna, Metropolitan and Penn Mutual; two coal companies, three other major oil companies, two large utilities, and a gas pipeline.

That's all under the Morgan roof. Conoco has two other banks tied-in, in similar fashion.

Multiply this network by all the major oil companies, and some idea can be had of the enormous concentration of wealth and power centered in the industry.

Interlocking directorates make it all possible.

It is difficult to perceive the lines of distinction and ownership between banks and energy companies. Ordinarily, one might expect it is the banks who ultimately call the shots. But when it is realized that literally millions of dollars in employee benefit funds are deposited by the energy companies, in the major banks, then the lines of authority and distinction become even more blurred. In effect, what we have is a siamese octopus, with the world economy wrapped in its clutches.

There is one more lever of power employed by the companies and banks, virtually invisible, but essential to their economic and political hegemony. It is the accounting firm.

A mere seven firms audit the books of the largest oil companies. The services these firms render go beyond accounting and auditing, to include tax assistance. They perform well in the latter function. The multinational energy companies haven't paid taxes on their foreign profits for years and, in reality do not pay taxes here at home, since they are, in essence, tax collectors, who pass the cost of taxes onto consumers, in the form of prices. They also receive all investment tax credits enjoyed by other members of the corporate world.

The "Big Seven" accounting firms also design data processing and information systems, do consulting, executive recruiting and pension and investment planning for the companies.

The advantages of this concentration are fairly obvious. A uniformity of practices and procedures is established, which tends to reduce the industry to conformity.

Data for revenues, operating costs and other financial figures are closely guarded as inside and proprietary information, not to be divulged for public consumption or government regulatory purposes. There are ample cases where the energy companies and their banking trusts have refused to open their books to the Securities and Exchange Commission and even the Congress.

Finally, there remains the possibility that accounting firms are used as conduits for the flow and exchange of information and policy among and between the members of the energy-financial sodality.

These then are the levers of power used by the energy interests to control and monopolize the industry, victimize the economy and command the government.

To summarize, there are five:

The OPEC Cartel Arrangement;

The Joint Venture;

The Interlocking Directorate;

Banking and Financial Institution Interties, and

The Accounting Firm Fraternity.

Political contributions and the interchange of corporate with federal energy agency personnel are two highly visible abuses of power, but presumably are commonly known. Why belabor the obvious?

We can deduce from this didactic discussion, several generalizations.

The first is that structural challenges to and changes in the private control of energy investment are probably preconditions to the political possibility of solving the energy crisis in an equitable and just manner.

This is why we need continued regulation of natural gas and home heating fuels.

This is why we must insist on full financial disclosure from energy companies.

It is why we must look to the rejuvenation of federal anti-trust prosecutions in the energy industry.

It is why we must insist on horizontal and vertical divestiture of the energy giants.

It is why we must look toward public, as opposed to private development of alternative energy sources.

What has been described in this analysis of corporate control and power is a kind of reactionary socialism, which makes the future of America contingent upon investment decisions by and in behalf of a few corporate entities and extremely wealthy people.

When this or next winter's excessively high fuel bills come rolling in; when the gas pump prices increase and the electric rates soar through the fuel adjustment clause, it won't be the perpetrators of this energy scandal who will sacrifice and suffer.

Since the crisis of 1973/74, average weekly earnings of working people have increased roughly 6 percent per year. Energy company profit increases have outstripped wage increases nearly threefold—averaging 17 percent per year. The inequity for working people is bad enough.

For the seven million or more unemployed it is tragic. And unconscionable.

There is a fundamental and human right to the basic necessities of life. The energy crisis is denying this right to millions of Americans.

It remains for public spirited and progressive citizens to remind the nation's policy makers and the public, that the sun and solar energy belong to the people, not the energy companies; that the waters of the ocean and the rivers belong to the people, not the monopolies; that the children of the ghettos have as much claim to ownership of public lands, oil shale and offshore oil deposits, as do a few private investors.

Thank you.●

ELECTORAL REFORM

● Mr. BAYH. Mr. President, earlier today a task force brought together by the Twentieth Century Fund issued its report on electoral reform and announced its proposal for a national bonus plan for electing the President and Vice President. This proposal calls for retaining the electoral vote system but adding an additional 102 electoral votes to be awarded on a winner-take-all basis to the candidate with the most popular vote nationwide. The task force report says that this national bonus "in essence virtually eliminates the possibility of defeat for a popular vote winner, which was the priority for proponents of direct election, while at the same time preserving those aspects of the existing system that are seen by its defenders as bulwarks of the two-party system and of federalism."

This proposal is very similar to a suggestion put forward by Arnold J. Levin in the May 22, 1977, Washington Post. The Senate Judiciary Subcommittee on the Constitution has examined this proposal and others made previously. At the request of the minority members of the subcomittee, Mr. Levin's version of the national bonus plan was reprinted at page 531 of the Record of Hearings on the Electoral College and Direct Election, July 20, 22, 28, and August 2, 1977.

As a result of the subcommittee's studies over the last 10 years I feel strongly, as I have for some time, that the best way to elect our President and Vice President is through direct popular election, as proposed in Senate Joint Resolution 1. However, it is important for the people of our country and for my colleagues to have before them all proposals that are advanced. With that in mind, I am introducing today the proposed national bonus plan constitutional amendment which was put forward this morning by the Twentieth Century Fund Task Force.●

THE ANNUAL MEETING OF STATE HISTORIC PRESERVATION OFFICERS

● Mr. LEAHY. Mr. President, in late February the National Conference of State Historic Preservation Officers convened in Washington, D.C., for its eighth annual meeting. The State officers, in cooperation with Federal agencies, administer national laws and programs related to preservation in the 50 States, the District of Columbia, and five territories. The conference proceedings reflected the broad impact of the preservation movement on the social and economic development of our country and its communities. It is clear that preservation plays an important role in a broad range of domestic issues of the highest priority to Americans.

My distinguished colleagues are well acquainted with my long interest in the preservation movement and my conviction that we must, as a people, take stock of our cultural heritage and recognize that it is in our best interest to protect and maintain architectural landmarks, archeological properties, and historically significant areas in our cities, towns, and countryside.

The preservation movement is to be commended for its record of accomplishment in thousands of communities across the country where it time and again has proven a key to economic revitalization and civic pride. It also is to be applauded for its determination to participate actively in the public planning process at every level so that preservation is recognized as a promising option as we confront issues bearing fundamentally on the quality of life in America.

I believe that the voice of preservation should be heard clearly in our public and decisionmaking forums. The movement's potential must be firmly articulated.

Secretary of the Interior Cecil D. Andrus and the Director of the Interior Department's recently created Heritage Conservation and Recreation Service, Chris T. Delaporte, both addressed the annual meeting of State historic preservation officers on February 28. Their statements speak eloquently to issues and opportunities for the historic preservation movement today. Mr. Delaporte speaks specifically of an initiative that the new Service is undertaking, with

broad public and private participation, to assess nationwide preservation activity and to add new dimensions to preservation planning and policy formulation. This effort will receive my close attention.

I respectfully commend Secretary Andrus's and Director Delaporte's statements to my colleagues in the Congress and ask unanimous consent to print the texts of their addresses in the RECORD of this day's Senate proceedings.

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

REMARKS BY SECRETARY OF THE INTERIOR CECIL D. ANDRUS

Some of you may be familiar with the joke about the fighter pilot who upon spotting enemy planes said to his co-pilot: "Let's turn 360 degrees and get the heck out of here."

My schedule for today turned 360 degrees, or maybe 720 degrees. At any rate, I am pleased that we were able to reschedule some other obligations so that I could end up here where I wanted to be in the first place.

Our good friend and colleague Merle Wells has kept me informed of the splendid record of accomplishment in our historic preservation partnership and the role of the State Historic Preservation officers in this unique program.

I'm also very enthusiastic about the opportunities I see ahead for this partnership as a result of the President's initiative in calling for the National Heritage program. So, I welcome this occasion to tell you this in person.

When I became Secretary of the Interior, I made it clear that at the core of all of our decisions would be an ethic of conservation.

I am not, nor is this Administration, anti-development. But I think it is accurate to say that we are for wise development and wise utilization of our national resources.

Our decisions on all crucial issues have been guided by the principle of protecting the quality of our environment—the environment in which we, and our children, and their children, must live.

This approach led us to take a strong stand to protect the priceless resources of Redwood National Park—and I'm both proud and relieved that we are about to see congressional action to achieve this goal.

We have likewise taken a strong stand on the completion and protection of the Appalachian Trail. Again, working with Congress, we are approaching successful resolution of this crucial question.

We have approached our national energy crisis with the same principle of conservation in mind—and I believe that we have been able to provide a resource base for energy production without unacceptable environmental costs.

And in our Alaska recommendations we have sought to learn from the mistakes of the past, and to chart a responsible and reasonable course toward the preservation and wise utilization of a tremendous national resource.

But the natural resources of a nation include more than its land and water, more than its mineral and agricultural resources. The most important—and essential—natural resource of any nation is its people, and any "natural resource" decision which ignores this fact is, to that very degree, inadequate.

When one thinks of the strength of a nation it is all to easy to think only in terms in tangibles and quantifiable factors. The importance of these factors—of strategic energy reserves, of available and usable water, of agricultural output—is obvious of course.

But equally important are some intangibles, and some of the most important of these can be summed up in the word "heritage."

It is essential that the citizens of a nation have the sense of belonging and the sense of direction which comes from the knowledge of their "roots."

To know who we are we must have a sense of who we have been.

And we must take steps to preserve the essential fabric of that reality for our own benefit and that of those who come after us. Thus, what you do—and what we do *together*—is of great importance.

The President's recognition of this is reflected in his decisions and policy directives concerning development of a National Heritage program.

What we have been—our common inheritance—is both cultural and natural. To the extent we do not wisely protect either, we as a nation are diminished.

It is this realization that forms the foundation of the President's heritage program.

We also realize that in considering the diverse resources that make up our natural and cultural heritage, it is just as essential to recognize necessary differences in approach as it is to maximize common ground and joint strengths.

The new program and the Heritage Conservation and Recreation Service are structured to take advantage of both.

I know that as this conference progresses, you will be discussing the proposed program in great detail. I do not want to preempt that discussion.

I know that as you have carefully and thoughtfully considered the new program, you have found some points which have pleased and encouraged you—and others which have disappointed you.

Among the latter, I suspect, are the requested funding level of the Historic Preservation Fund, and this year's suggested matching ratio for planning and inventory grants.

In that regard, I will only point out to you what must already be obvious—the competition for the financial resources of the Federal government is intense.

Those of us who fought in the Fiscal Year 79 battle of the budget are not licking our wounds—we are at work on our strategy for FY 80. You can be assured of a strong presentation from those who represent you during the budget formulation process next year. Bob Herbst, David Hales, Chris Delaporte and I have had some discussions on this.

I say this not as a commitment to increased funding, but as assurance that we will do our best in representing the legitimate funding needs of historic and natural preservation.

In this process we will need your help. It is, for example, difficult to defend large funding increases when, all together, you have more than $30 million in unobligated funding from previous years. Let's put that money to work.

On a related point, it is incumbent on all of us to do a better job of demonstrating the importance of what we do, and its relationship to the major issues which concern this nation.

The National Heritage program is going to give preservation a voice and a hearing in the planning and decision-making forum here in Washington that it has not had previously. This is long overdue. It's time that the accomplishments and the proven economic and social benefits of historic preservation are given the credit they merit.

It's time our movement was better understood. But it's up to us to make that happen.

The historic preservation movement in the United States has always been and will always be more than just an administrative initiative or an organizational framework. It is more than funding formulas, more than comprehensive planning, and more than programming and budgeting. All these do is comprise a structure to support something far more vital, far more compelling. That something is an ethic, a philosophy, a commitment to maintain the links essential to civilization.

It is this kind of impetus that lies behind the National Heritage program. It lies behind the legislative and other initiatives we hope to be taking, with your cooperation, to expand consideration of and protection of our Nation's valuable heritage resources.

Our cause springs from the grass roots, from thousands of communities and millions of people in all walks of life who care deeply about the quality of life.

You, the State Historic Preservation Officers, are the key to the movement's success. We in Washington can provide a structure, a national focus and certain incentives, as we have in the past and as we now have with the National Heritage program.

But these initiatives are for naught if they fail to connect with the rising commitment of concerned Americans in their neighborhoods and communities. You provide that link. You are that connection. You are the real producers.

I believe that this Administration holds enormous promise for America. I don't say this because I'm expected to say it.

There are huge problems and challenges facing this country now, and great possibilities. As a Nation, we are taking a closer look than we have in a long time at ourselves, our cities, our communities, our neighborhoods, and our other human and material resources.

I've come here today to express directly to you my commitment to our common effort. I've also come to ask for your support—as well as your continued advice and guidance—on the National Heritage program.

This Administration views this program as a beginning, not an end product, and we look forward to working with you as we guide its development. We need feedback—your constructive criticism when we're wrong and your appraisal of what we are doing right.

As I consider our opportunities—and responsibilities—to preserve and protect our national heritage, I am reminded of one Alaska Native's remarks on our opportunities in Alaska. He said, and I'll paraphrase, that if we do not take advantage of our chance to preserve our national treasures, God will forgive us, for it is his nature to be forgiving—but our grandchildren will never forgive us.

Our joint endeavors are important to the future of this Nation—and I look forward to working with you as we carry out our responsibilities.

REMARKS BY CHRIS THERRAL DELAPORTE

On January 25, as you know, Secretary of the Interior Andrus announced establishment of the Heritage Conservation and Recreation Service. I think it is fortunate that this annual meeting of State Historic Preservation Officers and Federal Representatives is taking place so soon after that announcement. It gives us an opportunity to meet in person during the two to three month period set aside for organizational transition. The effort of the past eight months to keep one another informed of plans for this important step in the Administration's National Heritage Program is no substitute for face-to-face discussion.

Since 1971 the State Historic Preservation Officers have met each winter here in Washington. Many of you, as well as a good number of people with the Office of Archeology and Historic Preservation, have been present at each of eight annual meetings. This continuity—in experience, leadership, and associations—is one of the great strengths in the preservation partnership between the States and Federal Government. It has been and will continue to be very important in the National Heritage Program.

I intend to be candid today. I ask for your candor in return. I needn't dwell extensively here on the events that followed President

Carter's call for a National Heritage Program in his Environmental Message last May, or on the organizational composition of the new Heritage Conservation and Recreation Service. Instead, I want to give you several assurances. Then I want to share with you some thoughts about issues and opportunities I believe we face in America's historic preservation movement.

Here are the assurances.

One, I intend that the organizational structure of the Heritage Conservation and Recreation Service, providing as it does an integrated focal point in the Federal Government for related natural conservation, historic preservation, and recreational concerns, will serve, *without fail*, the best interests of each. I realize there are apprehensions that administrative integration of these functions may create its own imbalances. I respect the depth of commitment behind these apprehensions. It is understandable that major programmatic realignment at the Federal level will generate reservations as well as support. Something would be wrong if it didn't. Let me say simply, however, that I have found, time and time again, that at the local, community, grass-root level—where the real impetus of social movements is born and where action is most immediate and concrete—there is a clear conceptual link drawn among natural conservation, historic preservation, and sensitively planned recreational opportunities for our people. Apprehensions materialize in the more abstract administrative domain, where movements have a way of separating into programs, each with its own managerial, budgetary, and planning apparatus.

Two, I assure you there will be no disruption whatsoever in the impressive record of achievement of the Federal/State preservation partnership as a result of the Office of Archeology and Historic Preservation's transfer to the Heritage Conservation and Recreation Service.

Three, I assure you of my deep personal conviction that the historic preservation movement in this country is fundamentally related to the quality of our national and community life and to the well-being of all the American people.

Four, I assure you of my conviction that the past successes and future accomplishments of our partnership are primarily due to your initiatives as State Historic Preservation Officers. You are the central players and producers, and I will see that this continues, because this movement does not need an overly dominant Federal presence.

I welcome this opportunity to place these assurances in the public record.

Permit me now to address issues and opportunities I see before us.

In his history of the preservation movement in America before Williamsburg, Charles Hosmer traces the movement from its earliest, principally associative, manifestations into its urban phase and its dawning recognition that adaptation of historic resources to imaginative contemporary uses is essential if preservation is to have relevance in the development of our cities, towns, and rural areas. The Historic Preservation Act of 1966 ultimately represented the codification—a coming to fruition—of awareness that preservation is an environmental concern of the first order.

I appreciate and share the sense of achievement that you who have given life to that law must feel in reviewing the record of the past 12 years. Like you, I am prepared to present that record for quantitative and qualitative evaluation in any forum.

Nonetheless, I believe that historic preservation in the United States stands at an important juncture. We may say that preservation has "come of age" but, to draw an analogy in human terms, that means simply that the child has reached the age of 18. The formative years, during which a certain instability and impulsiveness can be tolerated, are suddenly past. A more clearly defined sense of responsibility is expected as the adult assume a full-fledged role in society.

If the preservation movement is at that point, and I suggest that indeed it is, it is implicit upon us to assess the formative years and chart a future course in the context of the movement's full participation in the mainstream of our national life.

I believe we must distinguish at the outset between the performance record of historic preservation and some public perceptions about the movement and its accomplishments.

To be frank, I am concerned that preservation is sometimes perceived as elitist, antiquarian, nonprogressive, and not always relevant to society's broadest goals. You note that I said perceived.

I am concerned that these perceptions, while in no way universal, are still prevalent enough to cause preservation at times to be shut out of the game before the hand is dealt.

I am concerned because I see our movement's contributions in the mainstream of American life, but sense that many preservationists have found themselves in the back seat when major issues are being weighed and resolved.

Why is this so? I don't pretend to have the answer, but I think we must ask the question.

Allow me to speculate that the fault cannot be laid exclusively at the doorstep of people who misperceive the preservation movement. We may have to look closer to home and ask ourselves some tough questions.

Are we doing all we can to articulate preservation's achievements, goals, and potential persuasively in the public forum?

Are we too modest? Or too reticent?

Is preservation to some extent inconsistent in policy and practice?

Do we present a confusing image? Have we made every effort to reconcile conflicting impulses in—and ramifications of—the movement?

Have we squarely confronted the issue of displacement?

I positively reject theories that would place that shoe on any single foot. This serious issue is far too complex for simplistic analysis. Still, Federal and Federally assisted programs are charged by law to assure uniformly fair and equitable treatment of persons who may be victims of displacement. Within the context of the American social conscience, it is implicit upon us to apply our best creative efforts to mitigate socially nonproductive consequences of our movement's involvement in the life of our communities and neighborhoods.

I am not suggesting with these questions that historic preservation is guilty of any unpardonable sin. I only suggest that if in fact we have come of age, the time is ripe to smooth out rough edges.

And to move out.

I believe that preservation, as I have seen it, is doing that. Our Federal/State partnership justly can claim a major role in the process. This is particularly evident in the national perspective so commendably reflected in your national conference's formulation of goals and objectives. I want us to take still more dynamic initiatives together.

To that purpose, I have today asked Dr. Ernest Connally, associate director of the Heritage Conservation and Recreation Service, to begin immediately a comprehensive, and ongoing, assessment of historic preservation activity in America. This initiative, which I am convinced will prove challenging and significant, will employ a systematic policy planning approach that already has proven fruitful in developing nationwide policy for the recreation element of the Heritage Conservation and Recreation Service.

The initial steps will be identification and selection of issues confronting the preservation movement. Task forces then will be established to address specific issues and develop options for Federal action by the Department of the Interior and the Heritage Conservation and Recreation Service. Throughout this process there will be broad public and private participation by agencies and groups with preservation-related interests, as well as full recognition that State historic preservation plans must reflect the diversity of State heritages and the differing contexts in which preservation is carried out.

Once these steps have been completed, the Department will determine options to be implemented. This thorough, nationwide policy planning process must be continuing and keyed to the Federal budget cycle.

I expect this effort to go a long way toward bringing fuller recognition that the preservation movement is a positive force in the mainstream of America's social and economic development.

I believe it will be valuable in shedding light on the movement's relationship to broad national objectives in urban policy, economic realization, neighborhood and energy conservation, rural development, housing, employment, land use, fair treatment of potentially displaced people and business, and public planning in the fullest sense at every level of Government.

And I expect the effort will be productive in defining specific actions the preservation movement should take in respect to identification and evaluation of cultural resources; improved public outreach programs; technical training of preservation craftsmen and professionals; allocation of public monies to projects that exemplify creative funding and adaptive use strategies as well as the highest possible standards of treatment for cultural properties; and the full range of tasks before us. I applaud your president, Frederick Williamson's, emphasis on sound management of State programs and tight administration of Federal grant monies apportioned for Statewide and project activities under the Historic Preservation Fund. The national conference clearly recognizes that the manner in which grant allotments are expended is a major criterion applied in decisions about the future of our cooperative efforts.

Historic preservation in the latter part of the twentieth century is inextricably linked with the validity and promise of our communities. The movement is a part *of*, not apart *from*, America's most compelling social issues and goals. It plays in every game in town. Our partnership has an exciting opportunity, working with local initiatives, to make an extraordinary positive impact on the physical and spiritual quality of life in our country. I know we all welcome the challenge of getting historic preservation on the fast track.●

THE MAINE INDIAN LAND CLAIM

● Mr. MUSKIE. Mr. President, the Passamaquoddy and Penobscot Indian tribes are claiming that millions of acres of land in the State of Maine were originally transferred from them in violation of Federal law. This claim, and its potentially devastating consequences, poses one of the most difficult problems I have encountered during my years in public life.

In recent weeks, a task force appointed by the President has presented a series of proposals which could resolve the Indian land claim, either in the courts or by mutual agreement among the parties, without the hardship and uncer-

tainty which might result from a comprehensive lawsuit against all present owners of land within the claims area. These recommendations have stimulated heated debate, both here in Washington and in Maine.

Because of the complexities of the matter, I would like to include in the RECORD some of the documents which are pertinent to this debate. I would like also to describe the events which took place over the past 2 years leading up to the White House task force proposal in February 1978.

THE POSSIBILITY OF A LAWSUIT

In the fall of 1976, the possibility of a large scale lawsuit against the State and private landowners in roughtly two-thirds of Maine threatened to hamper the ability of public institutions to raise long-term financing through the sale of bonds. It appeared at that time the prospect of serious economic hardship was imminent.

In response to a request for assistance by the Governor and attorney general of Maine, and by all four members of the State's congressional delegation, President Carter set in motion first one, and subsequently a second, effort to find an alternative to prolonged litigation and the associated economic dilemma for our State.

Early in 1977, the President appointed Judge William Gunter, a retired Georgia Supreme Court Justice, to identify a solution to the problem. Judge Gunter's recommendations did not attempt to fix legal responsibility for satisfying the claims, contrary to what some have stated. Rather, he suggested a combination of elements, including a congressional appropriation and a transfer of land, as the basis for either an out-of-court settlement or a court suit limited in scope.

Judge Gunter's proposals, which I ask unanimous consent to have included at the conclusion of these remarks, were rejected last year by both the State and the Indians as a basis of an out-of-court settlement.

In February of 1978, a three-member task force appointed by the President announced that the Indians had agreed they would drop all claims against the bulk of the landowners in return for a Federal appropriation of funds. Any lawsuit, therefore, would be severely restricted in scope. At the same time, the task force passed on to State officials and the remaining landowners separate offers by the Indians to settle the balance of their claims for a State appropriation of funds and private land transfers.

It should be made clear at the outset that President Carter, in responding to requests to assist Maine, did not have the option of ignoring the tribal claims.

Two Federal courts, the district court of Maine and the court of appeals in Boston, have ruled that a formal trust relationship exists between the Federal Government and the Indian tribes in Maine. Consequently, the Federal Government is legally bound to represent the interests of Maine's Indians to the fullest appropriate extent. This could include filing a lawsuit on behalf of the Indians seeking the return of, and/or compensation for, land taken from them in violation of the law. The two courts also ruled that the Federal law in question, the Non-Intercourse Act of 1970 and its successor statutes, did apply to Maine's Indians.

After examination of the land claims, and all the historical and legal documents relating to it, the Justice Department concluded in 1977, that the claims were sufficiently valid to justify legal action.

The Federal Government also has the right to pursue alternatives to extensive litigation. But in view of the obligations of a trustee which the courts have imposed on the Government, and the determination that the claims have legal merit, neither the President nor individual agencies of the Government can ignore the court and refuse to proceed if alternatives are not agreed upon.

Indeed, the Attorney General of the United States is presently subject to an order of the Federal District Court of Maine—an order which has been suspended during the current efforts to work out an acceptable alternative—to tell the court how the Justice Department intends to proceed.

RECENT DEVELOPMENTS

I ask unanimous consent that the latest proposals presented by the White House task force be printed in the RECORD at the conclusion of my remarks.

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

(See exhibit 1.)

Mr. MUSKIE. Mr. President, they consist of three recommendations. Only one is endorsed and fully supported by the President. This proposal would give the tribes $25 million in Federal funds in exchange for their dropping their claims to 9.2 million acres of land held by small landowners, small businesses, municipalities, and every other owner up to 50,000 acres of land.

The other two parts of the proposal do not involve any action by the Federal Government and are simply offers by the Indians transmitted by the President to drop their claims against the State and large landowners in return for land and State appropriations.

I view them as a starting point for negotiations, knowing that up to this moment the parties involved have yet to discuss directly the alternatives to a lawsuit.

Clearly, the State and large landowners are free to accept the proposal pertaining to them, make a counteroffer, or reject it altogether. The President confirmed this at a public meeting in Bangor, Maine. He further said he had no preference on their chosen course of action.

The President has indicated that the proposal to relieve claims against the bulk of the land in the claim area could be submitted to the House and Senate at the end of a 4-month review period. If accepted by the Congress, the cloud would be removed from title to 9.2 million acres belonging to the State's small landowners and there could be no further legal action against them.

If the offers made to the State and large landowners are rejected, the Justice Department may be required to commence legal action against them in court. Or, direct negotiations between the primary parties could lead to a resolution of the claims without recourse to the courts.

I have urged all parties to carefully consider the proposed solutions. I wish to add that I will not attempt to force my views on any one, and am looking to the State's leaders and large landowners to decide for themselves on the best course of action to be taken. And, I will support whatever decision the State makes.

EXHIBIT 1

[Nos. 75-1171, 75-1172]

Joint Tribal Council of the Passamaquoddy Tribe et al., Plaintiffs-Appellees, v. Rogers C. B. Morton, Secretary, Department of the Interior, et al., Defendants-Appellees, State of Maine, Intervenor-Appellant.

Joint Tribal Council of the Passamaquoddy Tribe et al., Plaintiffs-Appellees, v. Rogers C. B. Morton, Secretary, Department of the Interior, et al., Defendants-Appellants.

United States Court of Appeals, First Circuit

Argued Sept. 11, 1975.

Decided Dec. 23, 1975.

Action was brought by the joint tribal council of the Passamaquoddy Indian Tribe and the tribe's two governors against federal officials for a declaratory judgment as to the applicability of the Indian Nonintercourse Act to the tribe. The state of Maine intervened as a party defendant. Judgment was given for the Indians in the United States District Court for the District of Maine, Edward Thaxter Gignoux, J., 388 F.Supp. 649, and the state of Maine and federal officials appealed. The Court of Appeals, Levin H. Campbell, Circuit Judge, held that the Nonintercourse Act applies to the Passamaquoddy Tribe and established a trust relationship between the United States and the tribe. No congressional termination of the guardianship role was shown, and neither the tribe nor the state of Maine would have the right to terminate the federal government's responsibility.

Judgment affirmed.

Levin H. Campbell, Circuit Judge.

This is an appeal from a declaratory judgment entered in the District Court for the District of Maine. 388 F.Supp. 649, 667 (D. Me. 1975).

Plaintiffs are, under Maine law, the political representatives of the Passamaquoddy Indian Tribe ("the Tribe"). 22 M.R.S.A. § 4831 (Supp. 1975). They brought this action against the Secretary of the Interior and the Attorney General of the United States after the Secretary refused to initiate a lawsuit against the State of Maine on behalf of the Tribe. Earlier, in a letter to the Commissioner of the Bureau of Indian Affairs, the Tribe had stated the following grievances against Maine and its predecessor, Massachusetts (hereinafter collectively "Maine"): that Maine had divested the Tribe of most of its aboriginal territory in a treaty negotiated in 1794; that Maine had wrongfully diverted 6,000 of the 23,000 acres reserved to the Tribe in that treaty; and that Maine had mismanaged tribal trust funds, interfered with tribal self-government, denied tribal hunting, fishing and trapping rights, and taken away the right of members to vote, from 1924 to 1967. The Tribe had requested the Secretary to sue Maine on its behalf to redress these asserted wrongs before July 18, 1972, the date an action would allegedly be barred.[1] Although the Commissioner of the Bureau of Indian Affairs favored compliance with plaintiffs' request, defendants did not act.

Footnotes at end of article.

On June 2, 1972, plaintiffs filed this action, seeking a declaratory judgment that the Tribe is entitled to federal protection under the Indian Nonintercourse Act, 25 U.S.C. § 177,[2] and a preliminary injunction ordering defendants to file a protective action on the Tribe's behalf against the State of Maine by July 18, 1972. Defendants persisted in their refusal to sue for the Tribe, relying upon the advice of the Acting Solicitor for the Department of the Interior, who stated:

"[N]o treaty exists between the United States and the Tribe and, except for isolated and inexplicable instances in the past, this Department, in its trust capacity, has had no dealings with the Tribe. On the contrary, it is the States of Maine and Massachusetts which have acted as trustees for the tribal property for almost 200 years.

[W]e are aware that the Tribe may thus be foreclosed from pursuing its claims against the State in the federal courts. However, as there is no trust relationship between the United States and this Tribe, the Tribe's proper legal remedy should be sought elsewhere."

After a hearing, the district court ordered defendants to file suit by July 1, 1972, and to include all matters of which the Tribe had complained. In compliance, the instituted *United States* v. *Maine,* Civil No. 1966 N.D. An appeal from that order was dismissed on motion of both plaintiffs and defendants. Civil No. 1966 N.D. has meanwhile been stayed pending final determination of the present action.

Plaintiffs then filed two amended and supplemental complaints herein, abandoning their request for an injunction and seeking only a declaratory judgment. The State of Maine was allowed to intervene. As finally framed and argued in the district court, the issues were,[3] (1) whether the Nonintercourse Act applies to the Passamaquoddy Tribe; (2) whether the Act establishes a trust relationship between the United States and the Tribe; and (3) whether the United States may deny plaintiffs' request for litigation on the sole ground that there is no trust relationship. The district court ruled in plaintiffs' favor on all points. Both the federal defendants and the State of Maine appeal. We affirm, subject to the qualifications hereinafter stated.

I

The issues in this proceeding can best be understood in light of facts about the Tribe appearing in the parties' stipulation and exhibits and in the district court's comprehensive and scholarly opinion.[4]

The Tribe now resides on two reservations in Washington County in Maine. Its members and their ancestors, as was agreed below, have constituted an Indian tribe in both the racial and cultural sense since at least 1776. Plaintiffs allege that until 1794 the Tribe occupied as its aboriginal territory all what is now Washington County and certain other land in Maine. In 1777, the Tribe pledged its support to the American Colonies during the Revolutonary War in exchange for promises by John Allan, Indian agent of the Continental Congress, that the Tribe would be given ammunition for hunting, protection for their game and hunting grounds, regulation of trade to prevent imposition, the exclusive right to hunt beaver, the free exercise of religion, and a clergyman. In adidtion, an agent would be appointed for their protection and support in time of need. Allan, as Superintedent of the Eastern Indian Agency, reported to the federal government on several occasions in 1783 and 1784 that the Passamaquoddy Tribe had greatly assisted the revolutionary cause and urged Congress to fulfill these promises made on the Government's behalf. Allan also transmitted the views of the Tribe in this regard. However, the Continental Congress failed to act on Allan's recommendations. His appointment was revoked in March 1784, under a resolution revoking the appointments of all Indian Superintendents. In 1790, the First Congress adopted the Indian Nonintercourse act.[5]

In 1792, the Passamaquoddy Tribe petitioned Massachusetts for land upon which to settle, and Massachusetts appointed a committee to investigate, one member of which was the same John Allan. Allan reported that during the Revolutionary War the Passamaquoddy Tribe had given up its claims to lands known to be its haunts on the condition that the United States would confirm its "ancient spots of ground" and a suitable tract for the use of both the Tribe and all other Indians who might resort there. Soon after, in 1794, Massachusetts entered into an agreement, also referred to as a treaty, with the Passamaquoddy Tribe by which the Tribe relinquished all its rights, title, interest, claims or demands of any lands within Massachusetts in exchange for a 23,000 acre tract comprising Township No. 2 in the first range, other smaller tracts, including ten acres at Pleasant-point, and the privilege of fishing on both branches of the Schoodic River. All pine trees fit for masts were reserved to the state government for a reasonable compensation. An additional ninety acres at Pleasant-point were later appropriated to the use of the Tribe by Massachusetts in 1801.

Since 1789, Massachusetts and later Maine have assumed considerable responsibility for the Tribe's protection and welfare. Maine was a District of Massachusetts until 1819, when it separated from Massachusetts under the Articles of Separation, Act of June 19, 1819, Mass. Laws, ch. 61, p. 248, which were incorporated into the Maine Constitution as Article X, Section 5. The Articles provided that Maine "shall . . . assume and perform all the duties and obligations of this Commonwealth [Massachusetts], towards the Indians within said District of Maine, whether the same arise from treaties, or otherwise. . . ." Maine was thereafter recognized by Congress and admitted to the Union. Act of March 3, 1820, ch. 19, 3 Stat. 544. The Maine Constitution, with the above quoted provision relating to the Indians, was read in the Senate, referred to committee, and finally declared by Congress to be established in the course of the admission proceedings.

Since its admission as a state, Maine has enacted approximately 350 laws which relate specifically to the Passamaquoddy Tribe. This legislation includes 72 laws providing appropriations for or regulating Passamaquoddy agriculture; 33 laws making provision for the appropriation of necessities, such as blankets, food, fuel, and wood, for the Tribe; 85 laws relating to educational services and facilities for the Tribe; 13 laws making provision for the delivery of health care services and facilities to the Tribe; 22 laws making allowance for Passamaquoddy housing; 54 laws making special provision for Indian indigent relief; 54 laws relating to the improvement and protection of roads and water on the Passamaquoddy reservation; and 15 laws providing for the legal representation of the Tribe and its members.

In contrast, the federal government's dealings with the Tribe have been few. It has never, since 1789, entered into a treaty with the Tribe, nor has Congress ever enacted any legislation mentioning the Tribe. In 1824, the Department of War contributed funds to the Tribe, one-third toward the construction of a school, pursuant to an act for the civilization of Indian tribes. Act of March 3, 1819, 3 Stat. 516. It also gave money annually from 1824 to 1828 under the same act to Elijah Kellogg of the Society for the Propagation of the Gospel Among the Indians, to support a school for the Tribe. The funds were granted at the request of the State of Maine, were channeled through the State, and were subject to State controls. Kellogg, according to one nineteenth century source, was himself sent to the Tribe as a schoolmaster by the State of Maine, and as a missionary by the Missionary Society of Massachusetts. These funds were withheld during 1829 because of intra-tribal differences concerning the religion of the Superintendent of the school and, as a result, two principal men of the Tribe, Deacon Sockbason and Sabattis Neptune, went to Washington to meet with Thomas L. McKenney, Director of the Office of Indian Affairs, and John H. Eaton, Secretary of War, to seek reinstatement of the school funds and additional money to hire a priest and to purchase a parcel of land. Money was again appropriated for the school and the priest in 1830, although discontinued after 1831 on account of the same intra-tribal differences. However, despite a request from President Jackson, Congress failed to appropriate any money to purchase land for the Tribe. After the school funds were again suspended during 1831 because of the same sectarian strife, the Tribe requested that the funding be reinstated and used for the improvement of the Tribe's agriculture; this request was also denied and the funding was never resumed. During the period from 1899 to 1912, five members of the Tribe attended the Carlisle Indian School for short periods of time. A member of the Tribe also graduated from Haskel Indian College in 1970. Since 1965, various federal agencies other than the Department of the Interior have provided funds to the Tribe under federal assistance programs available to all citizens meeting the requirements of the program. Some of these funds were taken from special Indian allocations or were administered by special Indian desks within the various agencies. In 1966, the General Counsel to the Department of Housing and Urban Development, writing to the Commissioner of the Maine Department of Indian Affairs in regard to the establishment of public housing authorities by the governing councils of the Passamaquoddy and Penobscot Tribes, stated in part that "[i]t is our understanding that these tribes do not have any governmental powers in their own right or by virtue of any federal law. . . ."

In 1968, the Tribe brought suit against the Commonwealth of Massachusetts in the Massachusetts state courts alleging that the Commonwealth, with the consent of the federal government, assumed jurisdiction over and responsibility for the Tribe and that by the act admitting Maine into the Union, Congress confirmed and ratified that relationship.

II

The central issue in this action is whether the Secretary of the Interior was correct in finding that the United States has no "trust relationship" with the Tribe and, therefore, should play no role in the Tribe's dispute with Maine. Whether, even if there is a trust relationship with the Passamaquoddies, the United States has an affirmative duty to sue Maine on the Tribe's behalf is a separate issue that was not raised or decided below and which consequently we do not address. The district court held only that defendants "erred in denying plaintiffs' request for litigation on the sole ground that no trust relationship exists between the United States and the Passamaquoddy Tribe." It was left to the Secretary to translate the finding of a "trust relationship" into concrete duties.

Over the years, the federal government has recognized many Indian tribes, specifically naming them in treaties, agreements, or statutes. The general notion of a "trust relationship," often called a guardian-ward relationship, has been used to characterize the resulting relationship between the federal government and those tribes, *see Worcester* v. *Georgia,* 31 U.S. (6 Pet.) 515, 8 L.Ed. 483

Footnote at end of article.

(1832): *Cherokee Nation* v. *Georgia*, 30 U.S. (5 Pet.) 1, 8 L.Ed. 25 (1831); and the cases cited in the district court's opinion, 388 F.Supp. at 662–63. It is the defendants' and the intervenor's contention here that such a relationship may only be claimed by those specifically recognized tribes.

The Tribe, however, contends otherwise. It rests its claim of a trust relationship on the Nonintercourse Act, enacted in its original form by the First Congress in 1790 to protect the lands of "any . . . tribe of Indians." Plaintiffs argue, and the district court found, that the unlimited reference to "any . . . tribe" must be read to include the Passamaquoddy Tribe as well as tribes specially recognized under separate federal treaties, agreements or statutes. As the Act applies to them, plaintiffs urge that it is sufficient to evidence congressional acknowledgement of a trust relationship in their case at least as respects the Tribe's land claims.

Before turning to the district court's rulings, we must acknowledge a certain awkwardness in deciding whether the Act encompasses the Tribe without considering at the same time whether the Act encompasses the controverted land transactions with Maine. Whether the Tribe is a tribe within the Act would best be decided, under ordinary circumstances, along with the Tribe's specific land claims, for the Act only speaks of tribes in the context of their land dealings. If that approach were adopted here, however, the Tribe would be deprived of a decision in time to do any good on those matters cited by the Department of the Interior as reasons for withholding assistance in litigation against Maine. And without United States participation, the Tribe may find it difficult or impossible ever to secure a judicial determination of the claims. Given, in addition, the federal government's protective role under the Nonintercourse Act, see below, it is appropriate that plaintiffs and the federal government learn how they stand on these core matters before adjudication of the Tribe's dispute with Maine.

Yet the resulting bifurcation of decision necessarily restricts the reach of the present rulings. In reviewing the district court's decision that the Tribe is a tribe within the Nonintercourse Act, we are not to be deemed as settling, by implication or otherwise, whether the Act affords relief from, or even extends to, the Tribe's land transactions with Maine. When and if the specific transactions are litigated, new facts and legal and equitable considerations may well appear, and Maine should be free in any such future litigation to defend broadly, even to the extent of arguing positions and theories which overlap considerably those treated here.

Now, however, for purposes of the issues currently existing between themselves and the federal government, plaintiffs are entitled to declaratory rulings on the basis of which courses can be charted and actions planned and taken.

A. Is the Passamaquoddy Tribe a "tribe" within the Nonintercourse Act?

[1] The district court found the Passamaquoddy Tribe to be within the language of the Nonintercourse Act, "any . . . tribe of Indians." It read the quoted language as encompassing all tribes of Indians. The court reasoned that the Act should be given its plain meaning, there being no evidence of any contrary congressional intent, legislative history, or administrative interpretation; that the policy of the United States is to protect Indian title;[6] that there is no reason why the Passamaquoddy Tribe should be excluded since it is stipulated to be a tribe racially and culturally; that there is no requirement that a tribe must be otherwise recognized by the federal government to come within the Nonintercourse Act; and that even if "tribe" is thought to be ambiguous, it should be construed non-technically and to the advantage of Indians so as to include the Passamaquoddy Tribe.

[2, 3] Intervenor and defendants contend that "any . . . tribe of Indians" is ambiguous; that its proper meaning is a community of Indians which the federal government has at some time specifically recognized; and that the Passamaquoddy Tribe is in that sense, not a tribe. "No court", says intervenor, "has ever held a statute regulating trade and intercourse with Indians to apply to a tribe which the Federal Government disavows any relationship with. . . ."

But while Congress' power to regulate commerce with the Indian tribes, U.S. Const. art. 1, § 8, includes authority to decide when and to what exent it shall recognize a particular Indian community as a dependent tribe under its guardianship,[7] *United States v. Sandoval*, 231 U.S. 28, 46, 34 S.Ct. 1, 58 L.Ed. 107 (1913), Congress is not prevented from legislating as to tribes generally; and this appears to be what it has done in successive versions of the Nonintercourse Act. There is nothing in the Act to suggest that "tribe" is to be read to exclude a bona fide tribe not otherwise federally recognized.[8] Nor, as the district court found, is there evidence of congressional intent or legislative history squaring with appellants' interpretation. Rather we find an inclusive reading consonant with the policy and purpose of the Act. That policy has been said to be to protect the Indian tribes' right of occupancy, even when that right is unrecognized by any treaty, *United States v. Santa Fe Pacific R. Co.*, 314 U.S. 339, 345, 347, 62 S.Ct. 248, 86 L.Ed. 260 (1941), *rehearing denied*, 314 U.S. 716, 62 S.Ct. 476, 86 L.Ed. 570 (1942), and the purpose to prevent the unfair, improvident, or improper disposition of Indian lands, *Federal Power Commission v. Tuscarora Indian Nation*, 362 U.S. 99, 119, 80 St. Ct. 543, 4 L.Ed.2d, *rehearing denied*, 362 U.S. 956, 80 Ct.858, 4 L.Ed.2d 873 (1960); *United States v. Candelaria*, 271 U.S. 432, 441, 46 S.Ct. 561, 70 L.Ed. 1023 (1962). Since Indian lands have, historically been of great concern to Congress, *see Oneida Indian Nation v. County of Oneida*, 414 U.S. 661, 667, 94 S.Ct. 772, 39 L.Ed.2d 73 (1974), we have no difficulty in concluding that Congress intended to exercise its power fully.

This is not to say that if there were doubt about the tribal status of the Tribe, the judgments of officials in the federal executive branch might not be of great significance The Supreme Court has said that, "it is the rule of this court to follow the executive and other political departments of the government, whose more special duty is to determine such affairs." *United States v. Sandoval*, 231 U.S. at 47, 34 S.Ct. at 6, *quoting United States v. Holliday*, 70 U.S. (3 Wall.) 407, 419, 18 L.Ed. 182 (1865). But the Passamaquoddies were a tribe before the nation's founding and have to this day been dealt with as a tribal unit by the State.[9] *See* 22 M.R. S.A. ch. 1355. No one in this proceeding has challenged the Tribe's identity as a tribe in the ordinary sense. Moreover, there is no evidence that the absence of federal dealings was or is based on doubts as to the genuineness of the Passamaquoddies' tribal status, apart, that is, from the simple lack of recognition. Under such circumstances, the absence of specific federal recognition in and of itself provides little basis for concluding that the Passamaquoddies are not a "tribe" within the Act.

Intervenor cites two cases dealing with the Pueblo Indians of New Mexico for its contention that "tribe" refers only to tribes that have been federally recognized. *United States* v. *Candelaria, supra; United States* v. *Joseph*, 94 U.S. 614, 24 L.Ed. 295 (1876). In *Joseph*, the Supreme Court found that the Pueblo Indians were not a tribe within the Nonintercourse Act, apparently because of their high degree of civilization and the nature of their earlier relations with the Government of Mexico when they had been under its control.[10] In *Candelaria*, the Court held that the Pueblos did come within the Act, though it did not expressly overrule the *Joseph* view that some tribes, because highly civilized or otherwise, might conceivably be exempt. The Court found that the Pueblos were a simple, uninformed people such as the Act was intended to protect and pointed to federal recognition in the past as evidencing Congress' intention to protect the Pueblos. 271 U.S. at 440–42, 46 S.Ct. 561. These cases lend little aid to intervenor and defendants. The cases do, it is true, suggest that the Act's coverage is limited to tribes consisting of "simple, uninformed people," an interpretation understandable in light of the Act's protective purpose. But it is not claimed that the Tribe and its members are so sophisticated or assimilated as to be other than those entitled to protection. *Cf. Joseph, supra. Candelaria* is cited mainly in support of intervenor's argument that the Act requires federal recognition, but it does not elevate recognition to a *sine qua non;* it merely indicates that if there is a question of inclusion, federal recognition of dependent, tribal status may be helpful evidence of Congress' intent.

[4, 5] Appellants also assert that there is significance to Congress' approval of the Articles of Separation between Maine and Massachusetts, providing that Maine would assume the duties and obligations which Massachusetts owed to the Indians. But, as the district court recognized, Maine's assumption of duties to the Tribe did not cut off whatever federal duties existed. Voluntary assistance rendered by a state to a tribe is not necessarily inconsistent with federal protection. *See State* v. *Dibble*, 62 U.S. (21 How.) 366, 16 L.Ed. 149 (1858). Similarly, Congress' unwillingness to furnish aid when requested did not, without more, show a congressional intention that the Nonintercourse Act should not apply. (*See* Part II, C *infra.*) The reasons behind Congress' inaction are too problematic for the matter to have meaning for purposes of statutory construction. *Cf. Order of Railway Conductors* v. *Swan*, 329 U.S. 520, 529, 67 S.Ct. 405, 91 L.Ed. 471 (1947).

We have considered appellants' remaining arguments carefully and find them unpersuasive. We agree with the district court that the words "any . . . tribe of Indians" appearing in the Act include the Passamaquoddy Tribe.

B. *Is there a trust relationship between the Passamaquoddy Tribe and the federal government?*

[6] The district court found that the Nonintercourse Act establishes a trust relationship between the United States and the Indian tribes, including the Passamaquoddy Tribe. It relied on a series of decisions by the Court of Claims, *Fort Sill Apache Tribe v. United States*, 201 Ct.Cl. 630, 477 F.2d 1360 (1973); *United States v. Oneida Nation of New York*, 201 Ct.Cl. 546, 477 F.2d 939 (1973); *Seneca Nation v. United States*, 173 Ct.Cl. 917 (1965), while also finding support in an extensive body of cases holding that when the federal government enters into a treaty with an Indian tribe or enacts a statute on its behalf, the Government commits itself to a guardian-ward relationship with that tribe. *See e. g., Heckman v. United States*, 224 U.S. 413, 32 S.Ct. 424, 56 L.Ed. 820 (1912); *United States v. Kagama*, 118 U.S. 375, 6 S.Ct. 1109, 30 L.Ed. 228 (1886); *Worcester v. Georgia, supra.*

We agree with the district court's conclusions and in large part with its reasoning and analysis of legal authority. That the Nonintercourse Act imposes upon the federal government a fiduciary's role with respect to protection of the lands of a tribe covered

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Footnotes at end of article.

by the Act seems to us beyond question, both from the history, wording and structure of the Act and from the cases cited above and in the district court's opinion. The purpose of the Act has been held to acknowledge and guarantee the Indian tribes' right of occupancy, *United States v. Santa Fe Pacific R. Co.*, 314 U.S. at 348, 62 S.Ct. 248, and clearly there can be no meaningful guarantee without a corresponding federal duty to investigate and take such action as may be warranted in the circumstances.

We emphasize what is obvious, that the "trust relationship" we affirm has as its source the Nonintercourse Act, meaning that the trust relationship pertains to land transactions which are or may be covered by the Act, and is rooted in rights and duties encompassed or created by the Act. Congress or the executive branch may at a later time recognize the Tribe for other purposes within their powers, creating a broader set of federal responsibilities; and we of course do not rule out the possibility that there are statutes or legal theories not now before us which might create duties and rights of unforeseen, broader dimension. But on the present record, only the Nonintercourse Act is the source of the finding of a "trust relationship," and neither the decision below nor our own is to be read as requiring the Department of the Interior to look to objects outside the Act in defining its fiduciary obligations to the Tribe.

Once this is said, there is little else left, since it would be inappropriate to attempt to spell out what duties are imposed by the trust relationship. This dispute arises merely from the defendants' flat denial of any trust relationship; no question of spelling out specific duties is presented. It is now appropriate that the departments of the federal government charged with responsibility in these matters should be allowed initially at least to give specific content to the declared fiduciary role.

Thus we are not moved by intervenor's criticism of the lower court's interpretation of cited Court of Claims cases, for those arguments go more to the scope of the federal government's duties under particular circumstances than to the existence of a trust relationship. Nor are we moved by intervenor's other complaint that the judgment below implies some sort of overly "general" fiduciary relationship, unlimited and undefined. A fiduciary relationship in this context must indeed be based upon a specific statute, treaty or agreement which helps define and, in some cases, limit the relevant duties; but, as we have held, the Nonintercourse Act is such a statute.

We affirm, on the basis set forth herein, the finding of a trust relationship and the finding that the federal government may not decline to litigate on the sole ground that there is no trust relationship.

C. Are plaintiffs precluded by acquiescence or by congressional termination of its guardianship role from now asserting a trust relationship with the federal government?

[7] Intervenor also contends that, under general equitable principles, the Tribe should be precluded from now invoking a trust relationship with the federal government because of its long-standing relationship with the State of Maine. However, once Congress has established a trust relationship with an Indian tribe, Congress alone has the right to determine when its guardianship shall cease. *United States* v. *Nice*, 241 U.S. 591, 593, 36 S.Ct. 696, 60 L.Ed. 1191 (1916); *Tiger* v. *Western Investment Co.*, 221 U.S. 286, 315, 31 S.Ct. 578, 55 L.Ed. 738 (1911). Neither the Passamaquoddy Tribe nor the State of Maine, separately or together, would have the right to make that decision and so terminate the federal government's responsibilities.[11]

[8, 9] We turn, then, to whether Congress itself has manifested at any time a determination that its responsibilities under the Nonintercourse Act should cease with respect to the Tribe. The district court cited a rule of construction that statutes or treaties relating to the Indians shall be construed liberally and in a non-technical sense, as the Indians would naturally understand them, and never to the Indians' prejudice. *Antoine* v. *Washington*, 420 U.S. 194, 199–200, 95 S.Ct. 944, 43 L.Ed 2d 129 (1975); *Carpenter* v. *Shaw*, 280 U.S. 363, 367, 50 S.Ct. 121, 74 L.Ed. 478 (1930). We agree with the district court that any withdrawal of trust obligations by Congress would have to have been "plain and unambiguous" to be effective.[12] We also agree that there is no affirmative evidence that Congress at any time terminated or withdrew its protection under the Nonintercourse Act. The federal government has been largely inactive in relation to the Tribe and has, on occasion, refused requests by the Tribe for assistance. Intervenor argues that this course of dealings is sufficient in and of itself to show a withdrawal of protection. However, refusing specific requests is quite different from broadly refusing ever to deal with the Tribe, and, as stated above, there is no evidence of the latter.

[10] Intervenor also points to a decision by the Supreme Judicial Court of Maine, *State* v. *Newell*, 84 Me. 465, 24 A. 943 (1892), which found that the Passamaquoddy Tribe has never been recognized by the federal government, and argues that the federal government's failure to react to that decision by recognizing the Tribe in some way amounts to an acknowledgment of that ruling. However, the federal government had no obligation to respond to the state court's decision, which could not affect federal authority with respect to the Tribe. *See Oneida Indian Nation* v. *County of Oneida, supra.*

We accordingly affirm the district court's ruling that the United States never sufficiently manifested withdrawal of its protection so as to sever any trust relationship. In so ruling, we do not foreclose later consideration of whether Congress or the Tribe should be deemed in some manner to have acquiesced in, or Congress to have ratified, the Tribe's land transactions with Maine.

Judgment affirmed.

FOOTNOTES

[1] 28 U.S.C § 2415(b) sets forth a special statute of limitations for actions seeking damages resulting from trespass on Indian lands. The time for filing such an action was originally July 18, 1972, but has since been extended by Congress to July 18, 1988. Act of October 13, 1972, P.L. 92–485, 86 Stat. 803.

[2] Title 25 U.S.C. § 177 provides as follows:

"No purchase, grant, lease, or other conveyance of lands, or of any title or claim thereto, from any Indian nation or tribe of Indians, shall be of any validity in law or equity, unless the same be made by treaty or convention entered into pursuant to the Constitution. Every person who, not being employed under the authority of the United States, attempts to negotiate such treaty or convention, directly or indirectly, or to treat with any such nation or tribe of Indians for the title or purchase of any lands by them held or claimed, is liable to a penalty of $1,000. The agent of any State who may be present at any treaty held with Indians under the authority of the United States, in the presence and with the approbation of the commissioner of the United States appointed to hold the same, may, however, propose to, and adjust with, the Indians the compensation to be made for their claim to lands within such State, which shall be extinguished by treaty."

[3] Plaintiffs also requested in their second amended and supplemental complaint a declaratory judgment that the U.S. Const. art. I, §§ 8 and 10, and art. II § 2, are applicable to the Tribe. Relief along these lines was not pursued below and is not now an issue.

[4] Plaintiffs' contentions that the Department of the Interior has wrongfully turned its back on the Tribe, and that federal guardianship must replace that of the State, are elaborated in detail in O'Toole & Tureen, *State Power and the Passamaquoddy Tribe; "A Gross National Hypocrisy?"*, 23 Me.L.Rev. 1 (1971).

[5] The first Nonintercourse Act, 1 Stat. 137, 138, provided that "no sale of lands made by any Indians, or any nation or tribe of Indians within the United States, shall be valid to any person or persons, or to any state . . . unless the same shall be made and duly executed at some public treaty, held under the authority of the United States." This was amended in 1793, 1 Stat. 329, 330: "No purchase or grant of lands, or of any title or claim thereto, from any Indians or nation or tribe of Indians, within the bounds of the United States, shall be of any validity in law or equity, unless the same be made by a treaty or convention entered into pursuant to the constitution." Subsequent amendments have made no major changes and the present version was enacted in 1834. (*See* note 2 *supra.*)

[6] Indian title, also called "right of occupancy," refers to the Indian tribes' aboriginal title to land which predates the establishment of the United States. *See e. g., Oneida Indian Nation* v. *County of Oneida*, 414 U.S. 661, 667, 94 S.Ct. 772, 39 L.Ed.2d 73 (1974). The right to extinguish Indian title is an attribute of sovereignty which no state, but only the United States, can exercise, the Nonintercourse Act giving statutory recognition to that fact. *Id.* at 667, 670, 94 S.Ct. 772; *O'Toole & Tureen, supra* note 4, at 25–26.

[7] Congress also has "a right to determine for itself when the guardianship which has been maintained over the Indian shall cease." *United States* v. *Sandoval*, 231 U.S. 28, 46, 34 S.Ct. 1, 6, 58 L.Ed. 107 (1913). On the other hand, Congress' power is limited in the sense that it may not bring "a community or body of people within the range of [its] . . . power by arbitrarily calling them an Indian tribe," and may exercise its guardianship and protection only "in respect of distinctly Indian communities." *Id.* It having been stipulated, however, that the Passamaquoddy Tribe is a tribe in both the racial and cultural sense, there is no question that the Tribe is a "distinctly Indian" community.

[8] In *United States* v. *Candelaria*, 271 U.S. 432, 442, 46 S.Ct. 561, 563, 70 L.Ed. 1023 (1926), the Supreme Court, quoting *Montoya* v. *United States*, 180 U.S. 261, 266, 21 S.Ct. 358, 45 L.Ed. 521 (1901), read "Indian tribe," as used in the Nonintercourse Act of 1834, 25 U.S.C. § 177, to mean "a body of Indians of the same or a similar race, united in a community under one leadership or government, and inhabiting a particular, though sometimes ill-defined, territory." The Tribe plainly fits that definition.

[9] In *State* v. *Newell*, 84 Me. 465, 24 A. 943 (1892), it is true, the Maine court disputed the continued viability of the Tribe, apparently on the grounds that its sovereignty, such as the power to make war or peace, and the like, had vanished, and the political and civil rights of its members were enforced only in the courts of the State. Nonetheless that court did acknowledge the Passamaquoddies' tribal organization for certain purposes, *Id.* at 468, 24 A. 943, and no federal cases hold that the test of tribal existence for purposes of the Act turns on whether a given tribe has retained sovereignty in this absolute sense.

[10] The Pueblos had submitted to all laws of the Mexican Government, their civil rights had been fully recognized, and they had been absorbed into the "general mass of the population." *United States* v. *Joseph*, 94 U.S. 614, 617, 24 L.Ed. 295 (1876).

[11] One might argue that, although Congress has not terminated this relationship, the Tribe's own course of dealings with the State of Maine still prevent it from asking

Congress for assistance. However, the Indians' presumed helplessness is at the heart of the guardian-ward analogy; to deny the ward a right to call upon the guardian for protection would be to deny that he was incapable of looking out for himself.

[12] The Supreme Court has said with respect to the termination of Indian reservations that it will not lightly conclude that a reservation has been terminated and will require a clear indication of that fact. *DeCoteau* v. *District County Court*, 420 U.S. 425, 444, 95 S.Ct. 1082, 43 L.Ed.2d 300 (1975).

KILPATRICK, CODY, ROGERS, MCCLATCHEY & REGENSTEIN,
Atlanta, Ga.

Recommendation to President Carter
From William B. Gunter
Re Passamaquoddy and Penobscot Tribal Claims—Maine

A. My assignment.

My assignment was to examine the problem created by these claims for approximately ninety days and then make a recommendation to you as to what action, if any, you should take in an attempt to bring about a resolution of the problem.

I have not acted as a mediator in this matter; my role has been more that of a judge; I have read the law and examined the facts; I have met and conferred with affected parties and their representatives; I have attempted to be objective, realizing that no one person can ever attain total objectivity; I have tried to come forth with a recommendation that, in my own mind, is just and practical; and I now proceed with a brief statement of the problem and my recommendation.

B. The problem.

The pending court actions based on these tribal claims have the unfortunate effect of causing economic stagnation within the claims area. They create a cloud on the validity of real property titles; and the result is a slow-down or cessation of economic activity because property cannot be sold, mortgages cannot be acquired, title insurance becomes unavailable, and bond issues are placed in jeopardy.

Were it not for this adverse economic result, these cases could take their normal course through the courts, and there would be no reason or necessity for you to take any action with regard to this matter. However, I have concluded that this problem cannot await judicial determination, and it is proper and necessary for you to recommend some action to the Congress that will eliminate the adverse economic consequences that have developed to date and that will increase with intensity in the near future.

I have concluded that the Federal Government is primarily responsible for the creation of this problem. Prior to 1975 the Federal Government did not acknowledge any responsibility for these two tribes. Interior and Justice took the position that these two tribes were not entitled to federal recognition but were "State Indians". In 1975 two federal court decisions, one at the trial level and another at the appellate level, declared that the Constitution adopted in 1789 and a Congressional enactment of 1790 created a trust relationship between the Federal Government and these two tribes. In short, the Federal Government is the guardian, and the two tribes are its wards. After the appellate decision, Interior and Justice concluded that the tribal claims would be prosecuted against private property owners owning property within the claims area and against the State of Maine for the properties owned by it within the claims area. Therefore, we have the unusual situation of the Federal Government being, in my mind, primarily responsible for the creation of the problem, and it is now placed in a position by court decisions of having to compound the problem by court actions that seek to divest private property owners and Maine of title to land that has heretofore been considered valid title. The prosecution of these cases by the Federal Government brings about the adverse economic consequences already mentioned.

I have concluded that the states of Maine and Massachusetts, out of which Maine created in 1820, bear some responsibility for the creation of this problem. The states procured the land in the claims area, whether legally or illegally, I do now decide, and sold much of it. The State of Maine now owns, I am informed, somewhere between 400,000 and 500,000 acres of land in the claims area.

I have concluded that the two tribes do not bear any responsibility for the creation of the problem, and I have concluded that private property owners owning property within the claims area do not bear any responsibility for the creation of the problem.

The problem is complex and does not lend itself to a simple solution because it is old and large. The factual situation giving birth to the problem goes back to colonial times and the early years of our life as a nation under the Constitution. Adding to the complexity is the fact that the problem is social, economic, political, and legal.

Enough about the problem—I move on to my recommended solution.

C. The solution.

I have given consideration to the legal merits and demerits of these pending claims. However, my recommendation is not based entirely on my personal assessment in that area. History, economics, social science, justness, and practicality are additional elements that have had some weight in the formulation of my recommendation.

My recommendation to you is that you recommend to the Congress that it resolve this problem as follows:

(1) Appropriate 25 million dollars for the use and benefit of the two tribes, this appropriated amount to be administered by Interior. One half of this amount shall be appropriated in each of the next two fiscal years.

(2) Require the State of Maine to put together and convey to the United States, as trustee for the two tribes, a tract of land consisting of 100,000 acres within the claims area. As stated before, the State reportedly has in its public ownership in the claims area in excess of 400,000 acres.

(3) Assure the two tribes that normal Bureau of Indian Affairs benefits will be accorded to them by the United States in the future.

(4) Request the State of Maine to continue to appropriate in the future on an annual basis state benefits for the tribes at the equivalent level of the average annual appropriation over the current and preceding four years.

(5) Require the Secretary of Interior to use his best efforts to acquire long-term options on an additional 400,000 acres of land in the claims area. These options would be exercised at the election of the tribes, the option-price paid would be fair market value per acre, and tribal funds would be paid for the exercise of each option.

(6) Upon receiving the consent of the State of Maine that it will accomplish what is set forth in numbered paragraphs (2) and (4) above, the Congress should then, upon obtaining tribal consent to accept the benefits herein prescribed, by statutory enactment extinguish all aboriginal title, if any, to all lands in Maine and also extinguish all other claims that these two tribes may now have against any party arising out of an alleged violation of the Indian Nonintercourse Act of 1790 as amended.

(7) If tribal consent cannot be obtained to what is herein proposed, then the Congress should immediately extinguish all aboriginal title, if any, to all lands within the claims area except that held in the public ownership by the State of Maine. The tribes' cases could then proceed through the courts to a conclusion against the state-owned land. If the tribes win their cases, they recover the state-owned land; but if they lose their cases, they recover nothing. However, in the meantime, the adverse economic consequences will have been eliminated and Interior and Justice will have been relieved from pursuing causes of action against private property owners to divest them of title to land that has heretofore been considered valid title.

(8) If the consent of the State of Maine cannot be obtained for what is herein proposed, then the Congress should appropriate 25 million dollars for the use and benefit of the tribes (see paragraph numbered (1)), should then immediately extinguish all aboriginal title, if any, and all claims arising under an alleged violation of the 1790 Act as amended, to all lands within the claims area except those 400,000 acres of land within the public ownership of the State. The tribes' cases could then proceed through the courts against the state-owned land. If the tribes win their cases they recover the land; but if they lose their cases they recover nothing against the state of Maine. However, in the meantime, they will have received 25 million dollars from the United States for their consent to eliminate economic stagnation in the claims area and their consent to relieve Interior and Justice from pursuing causes of action against private property owners to divest them of land titles that have heretofore been considered valid.

It is my hope that the Congress can resolve this problem through the implementation of numbered paragraphs (1) through (6) above. Paragraphs (7) and (8) are mere alternatives to be utilized in the event consensual agreement cannot be obtained.

Respectfully submitted,

WILLIAM B. GUNTER.

FEBRUARY 6, 1978.

JOINT MEMORANDUM OF UNDERSTANDING

For several months, representatives of the Passamaquoddy and Penobscot Tribes and a White House Work Group comprised of Eliot R. Cutler, Leo M. Krulitz, and A. Stephens Clay have been meeting to discuss the tribes' land and damage claims in Maine and the federal services to be extended to the tribes in the future. These discussions have produced agreement with respect to both a partial settlement of the claims and future federal services. The parties hope that the terms and conditions described here also will serve as a vehicle for settlement of all the tribes' claims.

A. THE BASIC AGREEMENT: A PARTIAL SETTLEMENT

The Administration, through the White House Work Group, agrees to submit to the Congress and to seek passage of legislation which would provide the two tribes with the sum of $25 million in exchange for (1) the extinguishment of the tribes' claims to 50,000 acres per titleholder of such land within the 5 million-acre revised claims area (Area I) [1] to which title is held as of this date by any private individual(s), corporation(s), business(es) or other entity(ies), or by any county or municipality,[2] and (2) for the extinguishment of all their claims in the 7.5

[1] This acreage description of the revised claims area is based on information taken from maps and not from surveys. The final revised claims area, to be determined by the Department of Justice based on information furnished by the Department of the Interior, may vary from this description by ±5%.

[2] For purposes of such extinguishment, titleholding, whether direct or indirect, partial or complete, is deemed to include control, or ability to control, through subsidiaries, partnerships, trusts, or other entities.

million additional acres (Area II) in the claims area as originally defined (Areas I and II). Thus, every landholder within Area I would have his title cleared of all Passamaquoddy and Penobscot land and damage claims up to 50,000 acres,[3] and all titles in Area II would be totally cleared of such claims.

The tribes will execute a valid release and will dismiss all their claims with respect to Area II and with respect to landholders with 50,000 acres or less in Area I. The legislation will not clear title with respect to any of the holdings of any private individual, corporation, business, or other entity which are in excess of 50,000 acres in Area I, nor to any lands in Area I held by the State of Maine.

By preliminary estimate, the $25 million to be paid by the federal government would clear title to approximately 9.2 million acres within the original 12.5 million-acre claims area. All claims against householders, small businesses, counties and municipalities would be cleared. Approximately 3.3 million acres in Area I out of the original 12.5 million-acre claim would remain in dispute. About 350,000 acres of the disputed land is held by the state; the remaining 3.0 million acres is held by approximately 14 large landholders.

B. PROPOSED SETTLEMENT OF THE TRIBES' REMAINING CLAIMS AGAINST THE STATE OF MAINE AND CERTAIN LARGE LANDHOLDERS

The tribes and the White House Work Group recognize the desirability of settling the tribes' entire claim, if possible. However, direct discussions between the tribes and the State of Maine or between the tribes and the large landholders either have not occurred or have not been successful.

In an effort to promote an overall settlement, the White House Work Group has obtained from the tribes the terms and conditions on which the tribes would be willing to resolve their claims against the State of Maine and against the large landholders whose titles would not fully be cleared by the Basic Agreement. The tribes have authorized the Work Group to communicate these terms and conditions to the appropriate representatives of the State and the affected landholders. In this context, the Work Group serves primarily as an intermediary with limited authority to settle the remaining claims on the terms set forth by the tribes.

1. Claims Against the State of Maine.

The tribes have claims against the State of Maine for approximately 350,000 acres of State-held lands in Area I and for trespass damages. Rulings on several of the defenses originally available to Maine already have been made by the courts in the tribes' favor.

The State of Maine currently appropriates approximately $1.7 million annually for services for the Penobscot and Passamaquoddy Tribes. The tribes are willing to dismiss and release all their claims for land and damages against Maine in exchange for an assurance that Maine will continue these appropriations at the current level of $1.7 million annually for the next 15 years. The appropriations would be otherwise unconditional and would be paid to the United States Department of the Interior as trustee for the tribes. Should the State agree to give this assurance, the legislation to be submitted to the Congress by the Administration would provide for the extinguishment of all tribal claims to the affected State-held lands and all trespass damage claims when the last payment is made.

2. Claims Against Large Private Landholders.

In exchange for the dismissal, release and extinguishment of their claims to approximately 3.0 million acres within Area I held by the large landholders as described in the Basic Agreement, and in exchange for a dismissal and release of all trespass claims against said individuals or businesses, the tribes ask that 300,000 acres of acreage quality (approximately $112.50 per acre) timber land be conveyed to the Department of the Interior as trustee for the tribes, and that they be granted long-term options to purchase an additional 200,000 acres of land at the fair market value prevailing whenever the options are exercised. The tribes also ask for an additional $3.5 million to help finance their exercise of these options.

In recognition of the desirability of achieving an overall settlement, the Administration will recommend to the Congress the payment by the federal government of an additional $3.5 million for the tribes, if the affected private landholders will contribute the 300,000 acres and the options on 200,000 acres as set forth in the tribes' settlement conditions. Additionally, the Administration will recommend the payment of $1.5 million directly to the landholders contributing acreage and options to the settlement package. The $1.5 million would be divided proportionately according to the contribution made by the respective landholders.

If a settlement of the tribes' claims against the large landholders can be accomplished on the terms specified above, the Work Group has agreed to use its best efforts to acquire easements permitting members of the tribe to hunt, fish, trap and gather for noncommercial purposes and to obtain brown and yellow ash on all property from the large landholders within Area I. The tribes will be subject to applicable laws and regulations in the exercise of these easement rights. Additionally, it is agreed that the exercise of easement rights shall in no way interfere with the landholder's use of his property, either now or in the future. If the Work Group's efforts to acquire these easements are unsuccessful, the tribes have reserved the right to reject a settlement with the large landholders.

C. OTHER TERMS AND CONDITIONS

(1) Nothing in this agreement is intended by the parties to be an admission with respect to the value of these claims. If settlement can be accomplished, it will reflect a compromise from every perspective. The tribes regard their claims as worth many times more than any consideration to be received under this agreement. The State of Maine, on the other hand, has taken the position that the tribes' claims are without merit.

The Administration has chosen to evaluate the claims not merely on the basis of their merit and their dollar value, but also in light of the facts that the claims are complex; they will require many, many years to resolve; and the litigation will be extremely expensive and burdensome to everyone and could, by its mere pendency, have a substantial adverse effect on the economy of the State of Maine and on the marketability of property titles in the State.

With these considerations in mind, any settlement will reflect a shared understanding of the reality created by the litigation, rather than one party's view of the equity of the claims. The claims are unique, and resolution of them on any basis other than litigation similarly must be unique.

(2) If a settlement can be reached with the State of Maine, with the large landholders, or with both on the terms described above, the White House Work Group has the option of implementing a settlement on those terms, rather than on the terms of the Basic Agreement specified in Section A. The Work Group has agreed to consult with the tribes before choosing any of the alternatives provided by this agreement.

(3) The tribes recognize that in no event shall the federal government's cash contribution to any settlement exceed $30 million; the federal government will pay $25 million to achieve the Basic Agreement, and an additional $5 million to facilitate a settlement of all claims against private landholders.

(4) The location of the 300,000 acres must be satisfactory to the tribes. However, it is agreed that the 300,000 acres may be in several tracts, so long as the timber land is of average quality. It is also agreed that land will be selected in such a manner as to not unreasonably interfere with the large landholders' existing operations.

(5) The cash funds to be obtained in the settlement shall be paid in trust for the benefit of the tribes on terms agreeable to them and the federal government. No part of the capital will be distributed on a per capita basis. The terms of the trust shall not preclude reasonable investment of the principal, nor shall they affect in any way the right of the tribes to dispose of income. The right to dispose of income shall be wholly a matter for tribal discretion.

(6) All property and cash obtained pursuant to this settlement shall be divided equally between the two tribes.

(7) The federal government pledges that the tribes will be considered fully federally recognized tribes and will receive all federal services, benefits and entitlements on the same basis as other federally recognized tribes.

(8) All lands acquired by the tribes and land currently held by the tribes shall be treated for governmental purposes as other federally recognized tribal lands are treated. The consent of the United States will be given to the exercise of criminal and civil jurisdiction by the State of Maine pursuant to 25 USC 1321, 1322, provided that the United States may effect a retrocession within two years upon request of the tribes.

(9) If a settlement can be reached with the State of Maine, the White House Work Group will use its best efforts to obtain for the tribes assured access under mutually agreeable regulations to a designated place in Baxter State Park for religious ceremonial purposes. If the Work Group's efforts to obtain such assured access are unsuccessful, the tribes have reserved the right to reject a settlement with the State of Maine.

(10) With respect to settlement of the tribes' claims against the State of Maine and large landholders within Area I, the White House Work Group has 60 days to accomplish an agreement. If such a settlement cannot be accomplished within that period, the parties will proceed with the Basic Agreement outlined in Section A, above.

(11) The settlement agreement will be executed in a form appropriate to effectuation of the terms of the agreement and will preclude further litigation with respect to all claims settled. Suitable procedural safeguards will be adopted and implemented by court order in the pending litigation to assure that the parties' intent with respect to this settlement agreement is accomplished.

(12) The White House Work Group and this Administration pledge their vigorous support to settlement on the terms and conditions specified in this memorandum.

(13) This agreement is subject to ratification by the tribes on or by February Ninth, Nineteen Hundred and Seventy Eight.●

[3] For any landholder with holdings in excess of 50,000 acres, the 50,000-acre exemption would apply to lands which are representative of the overall holdings of such landholder.

ORDER FOR RECESS UNTIL 11 A.M. ON MONDAY, MARCH 20, 1978

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that when the Senate completes its business today it stand in recess until the hour of 11 a.m. on Monday.

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

ORDER FOR RECOGNITION OF LEADERSHIP ON MONDAY

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that on Monday the two leaders have their regular time, which they normally have, as in legislative session, but that that time not extend later than 11:15 a.m.

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

ORDER FOR CONSIDERATION OF PANAMA CANAL TREATY ON MONDAY

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that at no later than 11:15 a.m. on Monday the Senate resume consideration of the Panama Canal Treaty, and that an amendment by Mr. DOLE be laid before the Senate at that time.

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

ORDER TO CONVENE AT 8:55 A.M. ON TUESDAY, MARCH 21, 1978, AND FOR CONSIDERATION OF FARM BILL

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that on Tuesday next, March 21, 1978, as in legislative session, the Senate convene at 8:55 a.m. following a recess at the close of business on Monday; and that immediately following the prayer the Senate, as in legislative session, then proceed to the consideration of the first farm bill at no later than 9 a.m.

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

ORDER FOR CONSIDERATION OF CONFERENCE REPORT ON REDWOOD NATIONAL PARK ON TUESDAY NEXT

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that on the disposition of the two farm bills, as in legislative session, on Tuesday next, the Senate proceed to the consideration of the conference report on H.R. 3813, the Redwood National Park bill, with the following agreement to obtain at that time: That there be back-to-back votes on the final passage of the two farm bills no earlier than 4 p.m., that the redwood conference report be called up with a time limitation thereon, in its entirety, of 4 hours, and that it be under the control of Mr. ABOUREZK and Mr. HANSEN, as in legislative session.

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

ORDER FOR RECESS FROM TUESDAY NEXT UNTIL WEDNESDAY, MARCH 22, 1978 AT 10 A.M.

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that when the Senate completes its business on Tuesday, it stand in recess, and this can be changed later, until the hour of 10 a.m. on Wednesday.

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

ORDER OF BUSINESS ON TUESDAY NEXT

Mr. ROBERT C. BYRD. Mr. President, upon the disposition of the redwood conference report on Tuesday, would not the treaty then be automatically back before the Senate?

The PRESIDING OFFICER. The Senator is correct.

Mr. ROBERT C. BYRD. I thank the Chair.

AUTHORIZATION FOR COMMITTEE TO MEET

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that the Armed Services Committee be authorized to meet during the sessions of the Senate on Tuesday, March 21; Wednesday, March 22; and Thursday, March 23, to consider the military procurement authorization bill, which must be reported to the Senate by May 15 under the Budget Act.

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

PROGRAM

Mr. ROBERT C. BYRD. Mr. President, I would anticipate rollcall votes on Monday on amendments and/or motions in relation to the Panama Canal Treaty.

The first amendment to be called up will be an amendment by Mr. DOLE, which will be called up no later than 11:15 a.m. on Monday, with the Senate to come in at 11 a.m.

So I would anticipate that the Senate would be in no later than somewhere between 6 and 7 p.m. on Monday, and that on Tuesday the Senate would dispose of the two farm bills and the redwood conference report. Then the Senate would be back on the Panama Canal Treaty on Wednesday and on Thursday, with rollcall votes to occur during both days on amendments to the various articles therein.

RECESS TO 11 A.M. ON MONDAY, MARCH 20, 1978

Mr. ROBERT C. BYRD. Mr. President, if there be no further business to come before the Senate, I move, in accordance with the previous order, that the Senate stand in recess until the hour of 11 a.m. on Monday next.

The PRESIDING OFFICER. The question is on agreeing to the motion. As many as are in favor say "aye." Opposed, "no." The ayes have it. The motion is agreed to. Accordingly, the Senate, on this St. Patrick's Day, stands in recess until the hour of 11 a.m. on Monday next.

Thereupon, at 4:44 p.m., the Senate recessed, in executive session, until Monday, March 20, 1978, at 11 a.m.

CONFIRMATIONS

Executive nominations confirmed by the Senate March 17, 1978:

DEPARTMENT OF STATE

Alice Stone Ilchman, of Massachusetts, to be an Assistant Secretary of State.

The following-named Foreign Service officers for promotion from class 1 to the class of Career Minister:

Davis Eugene Boster, of Ohio.
Lawrence E. Eagleburger, of Florida.
Donald B. Easum, of Virginia.
Thomas O. Enders, of Connecticut.

INTERNATIONAL ATOMIC ENERGY AGENCY

Roger Kirk, of the District of Columbia, a Foreign Service officer of class 1, to be the Deputy Representative of the United States of America to the International Atomic Energy Agency, with the rank of Ambassador.

INTERNATIONAL COMMUNICATION AGENCY

John E. Reinhardt, of Maryland, to be Director of the International Communication Agency.

Charles W. Bray III, of Maryland, to the Deputy Director of the International Communication Agency.

Alice Stone Ilchman, of Massachusetts, to be an Associate Director of the International Communication Agency.

The above nominations were approved subject to the nominees' commitments to respond to requests to appear and testify before any duly constituted committee of the Senate.

EXTENSIONS OF REMARKS

RENE A. WORMSER ON THE REAL MEANING OF "TAX REFORM"

HON. JACK F. KEMP

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Thursday, March 16, 1978

● Mr. KEMP. Mr. Speaker, the unnecessarily high rates of taxation in this country confront us with an issue whose importance surpasses that of other domestic, economic or social issues.

There is much evidence to this point.

In day before yesterday's Washington Post, that newspaper's economics reporter, Art Pine, reported that families earning $10,000 a year or more pay 94 percent of all individual income taxes, that families earning $17,000 a year or more pay 70 percent of all such taxes. Those figures shoot through and through the assertion often heard in this Chamber—that tax rate reductions are needed most at the bottom end of the scale. They are in fact needed all across-the-board.

In yesterday's New York Times, Robert D. Hershey, Jr., reported in a major special to that paper that Britain's high taxes are the principal factor in the stagnation of that country's economy.