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FISCAL YEAR 1977 AUTHORIZATION FOR
MILITARY PROCUREMENT, RESEARCH
AND DEVELOPMENT, AND ACTIVE
DUTY, SELECTED RESERVE AND CIVIL-
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HEARINGS

BEFORE THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

NINETY-FOURTH CONGRESS

SECOND SESSION

ON

S. 2965

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TO AUTHORIZE APPROPRIATIONS DURING THE FISCAL
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FOR OTHER PURPOSES

PART 13

BUDGET AMENDMENTS

NAVY SHIPBUILDING AND MINUTEMAN III

MAY 4, 5, 1976

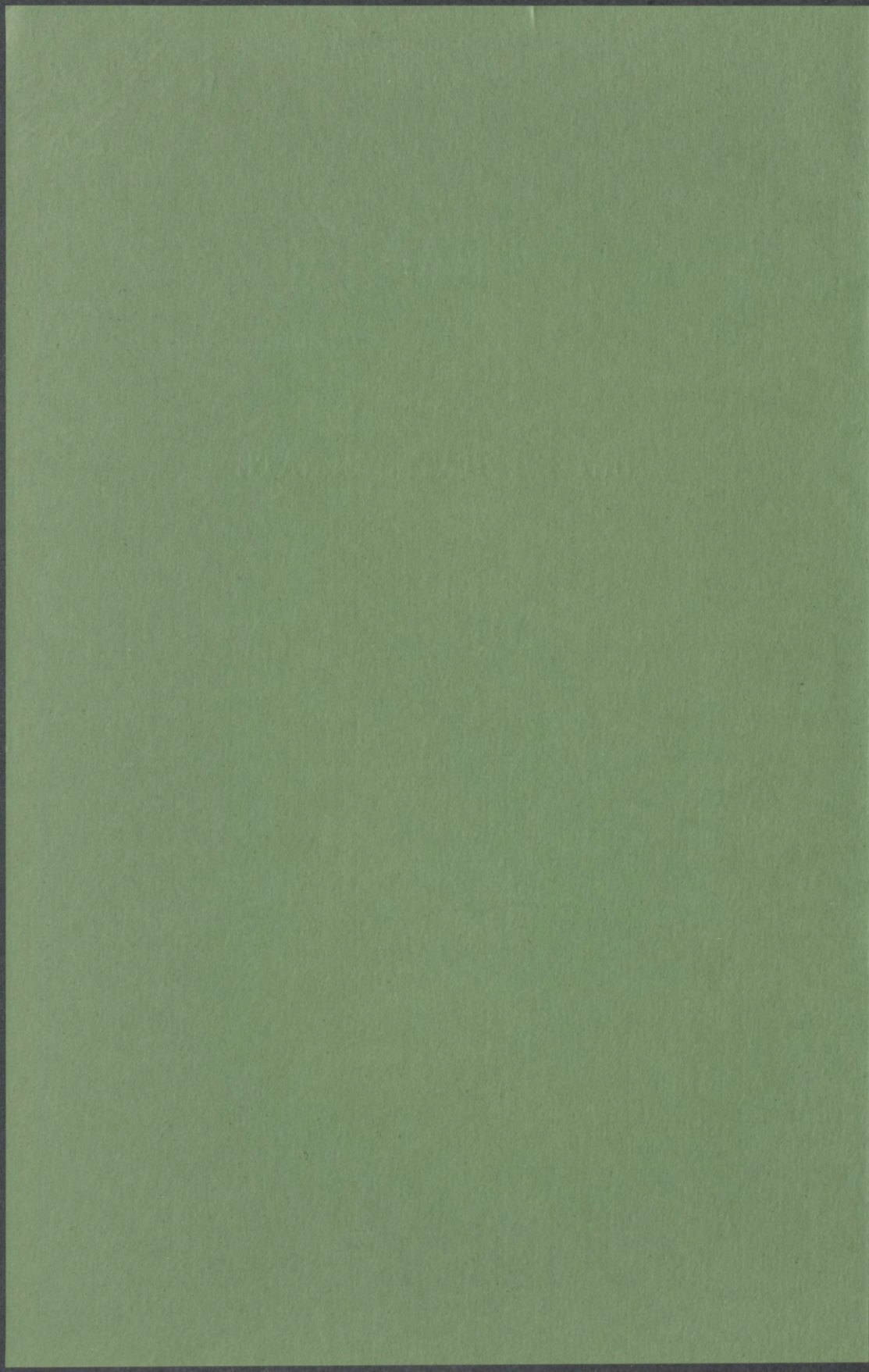


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MILITARY PROCUREMENT, FISCAL YEAR 1977

TUESDAY, MAY 4, 1976

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

NAVY SHIPBUILDING

The committee met, pursuant to notice, at 10:05 a.m. in room 212, Russell Senate Office Building, Senator John C. Stennis (chairman) presiding.

Present: Senators Stennis, Symington, Jackson, McIntyre, Nunn, Culver, Hart, Leahy, Thurmond, Goldwater, Taft, and Bartlett.

Also present: T. Edward Braswell, Jr., chief counsel; W. Clark McFadden II, counsel; John T. Ticer, chief clerk; Phyllis A. Bacon, assistant chief clerk; Charles J. Conneely, Charles H. Cromwell, George H. Foster, Jr., John A. Goldsmith, Don L. Lynch, Robert Q. Old, Larry K. Smith, Francis J. Sullivan, and, George F. Travers, professional staff members; Doris S. Cline and Christine E. Cowart, clerical assistants; Louise R. Hoppe and Roberta Ujakovich, research assistants; Susan Pitts, assistant to Senator McIntyre; Peter Hughes, assistant to Senator Byrd; Jeffery Record, assistant to Senator Nunn; Charles Stevenson, assistant to Senator Culver; Ed Miller, assistant to Senator Hart; Doug Racine, assistant to Senator Leahy; Will Ball, assistant to Senator Tower; Bill Lind, assistant to Senator Taft; and Fred Ruth, assistant to Senator Bartlett.

The CHAIRMAN. The committee will please come to order.

The committee meets today to continue hearings on Navy shipbuilding. The committee has already heard from Secretary Rumsfeld and Navy officials on the fiscal year 1977 Navy shipbuilding authorization request.

The Chair would note for the record that for fiscal year 1977 a total of \$6.3 billion is requested for Navy ships, of which \$4.7 billion is for 16 new ships and other related costs, and \$1.6 billion is for cost growth and escalation for fiscal year 1975 and prior ships. The Chair would also note that Secretary Rumsfeld presented a tentative 5-year shipbuilding program for fiscal years 1977 through 1981, which totals \$35.4 billion and provides for construction of 111 ships with the information that Navy ship requirements were still being reviewed by the National Security Council.

Subsequently, the House has made major changes in acting on the fiscal year 1977 authorization request. In summary, the House, in approving \$7.4 billion for Navy ships, deleted requested programs in the amount of \$2.6 billion and added \$3.7 billion for new ships and long lead for future ships. The House program basically emphasizes

costly nuclear ships, and the outyear costs of their program have not been defined.

In view of the importance of ship forces and the conflicting programs and reports of programs, I felt it necessary that Secretary Rumsfeld provide the Defense Department's views on each of the House actions and the administration position on any shipbuilding amendment to be proposed for fiscal year 1977.

I would add that this is an executive session at Secretary Rumsfeld's request.

First, a quick review here. As you know, May 15 is the deadline with reference to the compliance with the congressional budget requirements under the Senate rules. This bill has been given a lot of consideration, but there are some changes in the request here at the last and a few other matters that need to be considered.

The committee will have to try to finish action on the bill this week. I solicit the cooperation of every member toward that end. There has been a lot of work by all members, but we do have to complete our action and get a report to the Senate.

We have already finished up on two major segments of the bill, but we are behind, though, on the ships. There is another request now on ships for us to consider. Also, there is a request concerning Minuteman. There is a request here, too, to hear testimony from Admiral Rickover, which I think will be worthwhile. He has agreed to be on a standby basis cooperating in every way.

I notice here, Mr. Secretary, your statement is marked "secret." Right now is an open session. But I can see where some of the testimony would be classified.

What about the additional request for Minuteman? Is your testimony on that classified?

Secretary RUMSFELD. Sir, I could give a portion of my statement that is not classified; yes, indeed. If it were a closed session, however, I could present my entire statement, and we could discuss it more fully.

The CHAIRMAN. I think what we ought to do is to get right down to the very heart of this ship matter first, and then get to the Minuteman. And to do that we are going to have to have a closed session.

I don't believe there are enough members present now to vote a closed session. But I am expecting that there will be more members here soon.

What is the number required?

Mr. BRASWELL. Senator Stennis, nine is a quorum, and six can do business in the committee.

The CHAIRMAN. Senator Culver.

Senator CULVER. Mr. Chairman, would it not be possible for the Secretary to defer any classified subjects until we have completed questions in public? Since the shipbuilding plan was published only in the posture statement earlier this year, and will eventually have to be discussed in the Senate publically, couldn't we have an open session and ask questions, and then classified subjects be withheld until we have done that?

The CHAIRMAN. I see the possibility where we would have to have an open and closed session. But to get to the very heart of it and get the facts, the thing to do is let him give his classified testimony and then open the meeting.

We don't have a quorum to vote on the matter of a closed session. So I will ask the Secretary if he can proceed with an open session on the ship matter at least, leaving out the classified part for later consideration.

Senator Leahy.

Senator LEAHY. I was just going to figure out what the procedure and timing is going to be. I know that there is a great deal of it that has been made public and will continue to be made public. I have a number of questions to be asked in open session. Then if there was a further part of it that should be classified, we can go into classified session.

The CHAIRMAN. We don't have a quorum here to pass on the issue of closed and open sessions. So to utilize our time, we will remain in open session for the time being. But I will leave it where something will come up, whether it is classified or not, and the Chair will have to rule on it. And I will do the best I can on it and defer it for a closed session.

Senator Hart.

Senator HART. I want to reiterate a complaint that I make quite often. I am embarrassed to make it again except that I feel I have to. We have a committee rule on testimony of this sort—a 24-hour rule. It doesn't seem to be honored. We are asked to come in here and translate very important and very complicated testimony and ask questions about it without ever having had a chance to review it ahead of time. I really would appreciate it if the committee could enforce the 24-hour rule. I think we are all responsible. I don't think we will leak it to the press. We can do our job a lot better if we know what we are talking about. I keep making this complaint, and nothing ever seems to happen. But I am going to continue to make it.

The CHAIRMAN. You keep on, and I will join you. When I first became chairman I said we weren't going to hear the testimony unless it has been here the required time. But I found out that rule is impractical. It won't work. We have to ride this thing through the best we can. I am in sympathy with you.

Senator McINTYRE. Just to buttress the fact that Senator Hart has made mention of. Our day was pretty full yesterday. And I called down to the staff and asked, what is the Secretary going to testify on. And they said, we don't know.

The CHAIRMAN. I didn't have a copy either until this morning, gentlemen. The staff started working on it furiously as soon as they got it.

Let's move on and hear as much as possible in open session and settle the other matters later.

Secretary Rumsfeld, you may proceed with your statement.

Secretary RUMSFELD. Mr. Chairman and members of the committee, first I do apologize for the fact that the testimony was not available prior to this morning. The situation, as you know, is that a tentative shipbuilding program was presented in January in the Defense report, and at that time the President asked that there be a National Security Council study. That study will not be completed for a period of time. It would have been preferable had the legislative timing meshed more closely with the timing of the National Security Council's study. At the request of the Chairman we stopped doing what

we were doing and applied ourselves to trying to be able to respond to the kinds of issues that have come up during the legislative process. I was not the individual who picked this day for the hearing; it was the committee that selected this day because of the pressure of the legislative situation. In order to accommodate the need for testimony we were, in fact, able to meet with the President on Saturday for some hours. As of midnight last night the decision the President made on Saturday had not been put into testimony form completely. It is just that we have a circumstance where the legislative calendar did not mesh perfectly with the work that we were doing.

I am sensitive to the value of having testimony in advance, and do not believe that we have failed in this regard previously. I wouldn't want Senator Hart's comment to leave anyone under the impression that it was this individual or this Department that has been negligent in that respect, because I don't believe that to be the case.

Senator HART. It is an ongoing problem, Mr. Secretary.

The CHAIRMAN. Yes, this is a problem, as Senator Hart said. I insisted from the beginning that we have complete hearings on the House changes. It was Senator Taft's suggestion that we have them. We had the hearing scheduled for April 1, and the Secretary just said he wasn't able to give the conclusions because they hadn't been reached. And I said, well, there is no need to come over until that has been done. The Secretary is not on the defensive about it.

Secretary RUMSFELD. I would be delighted to defer it until tomorrow.

The CHAIRMAN. No, I think our committee must move forward now.

Go ahead in open session, please.

Secretary RUMSFELD. Mr. Chairman, on the second point concerning the question of whether the hearing should be open or closed, that of course is a decision for the committee. However, we have gone to considerable length to try to look at the setting within which these decisions are made. We are not talking about the U.S. Navy of today, we are talking about the U.S. Navy of the 1980's and the 1990's. And what I have tried to do, and what the NSC group has tried to do, is to look at the circumstances of the world during that period of time, to look at U.S. interests and objectives, to look at the difficulties that we will be facing in the maritime areas during that period, and then relate the specific Presidential decisions concerning the President's fiscal 1977 budget to them. This, of course, is something that this committee has urged us to try to do. Because of the way we have approached the testimony, in a very direct effort to try to do what the committee has requested, both orally and in statute, the approach we have taken involves questions of net assessment. It involves questions of the balance in the 1990's, and it involves questions of force objectives, and it discusses missions and requirements and structures into the 1990's; all of these questions are subjects that have been historically classified, for understandable reasons.

If the hearing is to be open, I am not able to go through my testimony and pick out the unclassified sentence and leave the others out. I could not do that and address the specific questions that I described. That then means we will be limited to dealing with the specific Presidential proposal on each ship for fiscal year 1977, and not be able to discuss the fiscal year 1977 request in any context. The context would clarify where you are legislatively.

I personally feel we could best proceed initially in closed session, and then open it later to discuss the specific Presidential proposal relating to the fiscal 1977 budget.

But I am at your disposal. I think we lose a good deal of clarity by having an open session at the beginning.

The CHAIRMAN. Gentlemen, I have already said that we would have open and closed sessions. Even though we don't have enough member's here, let's go into closed session and let him present that part of the testimony, and get through it as soon as we can. And then we will open up. Let's do that. We have got to do something.

Senator HART.

Senator HART. As I understand, what the Secretary is saying is that what he feels is classified is the long leadtime.

Secretary RUMSFELD. It is the long-term setting, exactly.

Senator HART. It is not this year or the next.

Secretary RUMSFELD. No; the proposals for this year we can discuss in open session.

The CHAIRMAN. Let's have a brief discussion and then we will agree to this and go on.

Senator CULVER. Mr. Chairman, however we proceed, I would prefer that the open session be at the outset and then move into the closed or classified subjects. It seems to me that it is imperative that we do have as full a ventilation in open session of these questions as we can. We are going to have it on the Senate floor. I think these questions of justification for our long term plans are a matter of legitimate public debate. We are talking about the long term plans of the Soviet Union, and we are talking about their program and its pace. It seems to me that we should be very careful that we don't close off that kind of meaningful debate and discussion in an open session on these questions. If we do go in closed session first, it seems to me that we ought to agree that we have ample time for open session.

The CHAIRMAN. We have all the time there is, but it is a question of how we are going to use it.

Senator CULVER. I would prefer to have an open session first.

The CHAIRMAN. We will have both as far as I am concerned.

Senator CULVER. What is classified, exactly, Mr. Chairman?

The CHAIRMAN. I don't know, Senator.

Senator CULVER. The numbers or what?

The CHAIRMAN. The Secretary made a statement.

Senator CULVER. Can I ask for clarification of that statement? The Secretary is requesting that this be classified. I wonder if we could talk about what we generally anticipate coming up. I wonder, what is the classified material?

The CHAIRMAN. All right, Mr. Secretary, if you can clear that up in open session any better, please do.

Secretary RUMSFELD. As I said, the testimony discusses a number of aspects of net assessment, some judgments as to the political—military situation in the period of the 1980's and 1990's, which is when the ships that are before Congress would come into the fleet; U.S. force objectives and requirements; and the force structure in that period. Information of this sort has historically not been a subject discussed in anything other than a classified session.

Senator CULVER. Would it include anything different than what was included in the current budget and openly published in the posture statement?

Secretary RUMSFELD. What?

Senator CULVER. What you plan to offer today, would that be different from what was openly published in the posture statement at the time of the submission of your current budget?

Secretary RUMSFELD. Yes, sir.

Senator CULVER. Those same matters were published on that occasion, weren't they?

Secretary RUMSFELD. It would be different, and we do have material in my statement that is classified. I would think that within an hour we could be through with the closed part of the session.

The CHAIRMAN. Let's do that, gentlemen. Otherwise we will just have to stop him and try to get the members in here and vote on a motion to go into closed session.

Senator CULVER. Mr. Chairman, could we have an agreement that in one hour we will go into open session?

The CHAIRMAN. No; let's not do that, I don't believe that is practical.

Senator CULVER. Then I object and ask for a motion and a vote, in accordance with Senate rules.

The CHAIRMAN. We don't have a quorum here, Senator. Couldn't you cooperate here a little and help us move this thing along. Let me ask him if he can cover it in an hour.

He might cover his part, but he doesn't know how much time the Senators will take.

What is your situation on that, Mr. Secretary?

Secretary RUMSFELD. I would think we could do it easily in an hour; that is my guess, but I don't know.

The CHAIRMAN. That is agreeable to me. We will have to restrain ourselves some on the length of questions.

All right, we will proceed now in closed session and do the best we can to finish in an hour, and then there will be an open session on this matter.

Senator CULVER. Mr. Chairman, we do have a quorum present, don't we?

The CHAIRMAN. I am doubtful about it. The rule is a little obscure about whether it requires the majority of the full committee.

Senator CULVER. There has to be a motion and a second, doesn't there, under Senate rules?

The CHAIRMAN. Let's go into closed session for an hour and see how we come out. I make the specific request that we go into closed session for 1 hour only and at the end of that hour if we are not through, we will take a vote on whether we extend it or not.

The Chair hears no objection.

All right, gentlemen, cooperate with us now. This will be a closed session. And we hope to get through that part of it within an hour.

[Whereupon, at 10:25 a.m., the committee went into closed session.]

[The testimony for the closed session begins on page 7141.]

STATEMENT OF HON. DONALD H. RUMSFELD, SECRETARY OF DEFENSE, ACCOMPANIED BY J. WILLIAM MIDDENDORF II, SECRETARY OF THE NAVY, AND ADM. JAMES L. HOLLOWAY, USN, CHIEF OF NAVAL OPERATIONS

Secretary RUMSFELD. Mr. Chairman, I will begin on page 20 of the testimony you have before you. The President has concluded that we must take steps now to strengthen the U.S. fleet. The first step in our steady buildup would involve adding essentially the same amount as the House did, \$1.174 billion over the amount of the President's January budget request for fiscal year 1977.

PRESIDENTIAL RECOMMENDATIONS

The President recommends a mix of additional anti-air warfare and antisubmarine ships. This would involve procurement of conventionally powered AEGIS destroyers (DDG-47) and nuclear powered strike cruisers (CSGN) in a two-to-one ratio, and of adequate numbers of multipurpose frigates (FFG-7s). Such a mix of ships would improve U.S. air defense over a wide range of task force and convoy operations by increasing the number of available platforms and adding AEGIS systems to the fleet faster than an all CSGN approach would permit. Specifically, the President recommends adhering to the original budget submission, which requests the lead DDG-47 in fiscal year 1977 and the lead CSGN in fiscal year 1978. Because the utility of the FFG-7 is evident, authorization of 12 of this type of ship is requested in fiscal year 1977.

Senator SYMINGTON. Mr. Secretary, we have a problem with these acronyms. Could you tell us what they are?

Secretary RUMSFELD. The strike cruiser is the CSGN, and the other way to speak of the FFG-7, is the guided missile frigate.

LONG BEACH MODERNIZATION

Because of the President's goal of increasing the size of our fleet, in part with a reasonably rapid increase of Aegis systems, we recommend that modernization of the cruiser *Long Beach* with the Aegis system be deferred. This recommendation is in contrast to the action taken by the House. This was a difficult decision to reach but, on balance, we believe that *Long Beach* can serve in her current configuration during most of the period during which the first of two new Aegis-equipped classes of ships are under construction.

ADVANCE FUNDING FOR NUCLEAR POWERED CARRIER

The President has also decided to recommend advance funding in the amount of \$350 million in fiscal year 1977 for the construction of another *Nimitz*-class nuclear powered carrier. This ship appeared in the fiscal year 1979 column of the 5-year program included with the budget. A fifth nuclear powered carrier will insure that we have 12 deployable carriers through the 1990's, even if one or two ships are decommissioned for service life extension.

ADDITIONAL R. & D. FUNDING

At the same time, because of advances being made in the technology of weapons and targeting, we recommend an additional \$200 million in fiscal year 1977 for research and development. These funds would be used for new ship and aircraft technology which might permit the United States to supplement the capabilities of the carrier force in the 1990's. This could take the form of advanced V/STOL aircraft operating from more numerous, somewhat smaller, platforms.

CONSTRUCT ONE ADDITIONAL OILER

Finally, we recommend construction of one additional oiler—AO—in the program to round out the underway replenishment force and permit extended forward operating periods for our combat ships.

These fiscal year 1977 increments, the first step of the 5-year program, should enable us, with our allies, to maintain maritime defense, deterrence, and freedom of the seas over the long term. In 1990, for example, we estimate that this force would be able to maintain sea control in the Atlantic, Pacific, and Mediterranean, and simultaneously be able to bring military power to bear on land in the Atlantic and Mediterranean.

In short, the President's proposals in fiscal year 1977 would add five additional ships to those outlined in the budget—four FFG-7's and one AO. It would provide earlier leadtime funds for the construction of a nuclear aircraft carrier, and would earmark \$200 million in research and development funds for accelerated development efforts in V/STOL aircraft, sensors, and weaponry.

There are some House-proposed add-ons, consisting of ships which are included in the 5-year program emerging from our study, which the President believes should be deferred until later. Specifically:

Inclusion of an extra Trident submarine appears not to be necessary, pending completion of an ongoing study of Poseidon life extension. In addition, with 28 SSN's authorized but not yet constructed, another SSN-688 is not as urgent as are additional frigates.

Moreover, adding two repair ships, as proposed by the House does not appear to be as urgent as acquiring additional multipurpose combatants. Repair ships provide facilities for repairs done on short notice, but at greater cost. We believe it best to carefully consider the proper mix of tender and shore repair facilities before proceeding with these ships.

In summary, the President's conclusions support the general thrust of the House action by adding about \$1.2 billion to the shipbuilding budget in fiscal year 1977. The principal areas of difference are in the mix of Aegis-equipped ships and the rate of submarine and frigate construction.

The nature of our maritime forces in the decades ahead will directly influence our defense capabilities, the success of our deterrence, and the freedom of the seas so necessary to our Nation's security. We make our specific recommendations insofar as is possible after consideration of the politico-military environment in the 1980's and 1990's. U.S. national security needs, the anticipated capabilities of the Soviet Union, and basic criteria for designing the best maritime program for the future.

Mr. Chairman, before responding to questions, I would like briefly to mention several points which have been raised during congressional review of the fiscal year 1977 defense budget proposal apart from shipbuilding.

ADVERSE IMPACT OF REDUCTION IN R. & D. FUNDS

First, the congressional actions to reduce research and development efforts on the sea-launched cruise missile program, Tomahawk, would have an adverse impact on our deterrent posture. As you know, we have strongly supported the cruise missile effort because of its potential application in enhancing deterrence, improving our defense capabilities—nuclear as well as conventional—and performing some missions more effectively at less cost than other weapon systems. The deployment of cruise missiles on submarines would provide survivable launch platforms, a secure strategic reserve, and a capability for appropriate response. Of equal importance, careful analysis suggests strong new roles for ship- and land-launched Tomahawk as part of tactical and theater forces.

The cruise missile is also under discussion in SALT. An action at this time to unilaterally cancel the strategic Tomahawk could undercut our position at no benefit to the United States. I urge your support of the program as submitted in the President's fiscal year 1977 budget.

Mr. Chairman, that completes my statement.

The CHAIRMAN. Gentlemen, I especially appreciate the cooperation of all of you. But so that we can get into this matter, I am going to pass for the time being.

Senator Symington, I recognize you under the general 10-minute rule.

Senator SYMINGTON. First, Mr. Secretary, I am very glad to hear what you say about the cruise missiles that lost in this committee on an 8 to 8 tie vote. From the standpoint of cost effectiveness it is incredible to me that we shouldn't pursue and take advantage of this situation. I was rather surprised at the way the vote went, because I think some people felt that it might hurt our program in other services. I don't think that is right.

Another point I would like to bring up and ask questions about is that before the joint committee, Admiral Rickover testified that Admiral Zumwalt had stated that if he had had his way there would be no more submarines built.

Secretary RUMSFELD. Admiral Rickover said that Admiral Zumwalt said that?

Senator SYMINGTON. That is right. I am asking, to the best of your knowledge, is that correct? And if so, why does he feel that way?

Secretary RUMSFELD. Senator Symington, I wouldn't have any idea. I am not familiar with the remarks of either of the gentlemen.

Admiral HOLLOWAY. I have no knowledge that would tend to substantiate that remark was ever made.

Senator SYMINGTON. Mr. Chairman, I ask unanimous consent to have the statement made by Admiral Rickover before the joint committee declassified and placed in the record at this point.

The CHAIRMAN. All right, Senator, without objection it will be inserted, if it is declassified.

[The information is classified and retained in the Joint Atomic Energy Committee files.]

Senator SYMINGTON. And it has nothing to do with technicalities, it just has to do with the statement of opinion.

Another question I would like to ask, you are asking for a new *Nimitz* carrier. And there is increasing apprehension about the future of the manned airplanes, especially bombers, not fighters. And so the development in missilery worried me about the future of the carrier. As you know, the possible enemy control most of the North Littoral of Africa and the Mediterranean Sea. Forty percent of the carriers are assigned to the Mediterranean, roughly, the strike carriers, and the large carriers. I am wondering, if you ask for a new *Nimitz* carrier, if you believe adequate attention has been given to the survivability of the carrier, looking at the size of it on the radar screen?

Secretary RUMSFELD. Possibly Admiral Holloway would want to comment as well. As we indicated in the earlier portion, we looked at the large deck carrier capability between now and the year 2000; the specifics of that are classified. But, the answer is that to maintain the numbers of forward deployed carriers that are desirable, the President proposed moving forward 1 year the long leadtime money for a fifth *Nimitz* class carrier. In addition, he has requested some \$200 million to look at V/STOL aircraft capabilities; such would allow for platforms with smaller decks.

As a complement for the kind of problem that you are suggesting for the period between now and the end of the century, I think that one can anticipate that there would be an application for large deck platforms during that period. Therefore, the conclusion is, given the life expectancy of the large deck carriers, particularly insofar as they can be modified through various life extension programs, that to maintain the deployed numbers desirable, it makes sense to move forward by 1 year the advance funding of a fifth nuclear carrier.

Senator SYMINGTON. There was a time when I had the privilege of serving with you on the Joint Economic Committee. I know of your interest in the economy, and you know of mine. I think a sound economy and a sound dollar are just as important to the national security as the latest weapon system. It is for this reason that I questioned the B-1 bomber, especially the development of missilery added to the problem of the cost of it. And also I now question the visibility of the super carrier from the same standpoint, especially as to the problem under the seas as against the surface, especially anywhere near the shore.

As we develop weapons it is important that we have to give consideration to that aspect of it. Inasmuch as you run the whole show, I sincerely hope that you go do that. Because there is an increasing resistance to some of these weapon systems by people who are not in the services, nor in the Government, but who are objective and who are intelligent about it.

With my respect to you and with your knowledge of the fiscal and monetary problems I hope you will give that full consideration as we go along with this budget.

I have no further comments and questions, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator.

May I announce, that I have asked Senator Nunn to consider himself, and confer with such fellow members of the Budget Com-

mittee, as he might see fit, as to this new figure that we have before us on missiles, and ships. In the markup of the bill we want to have in mind the Budget Committee's suggestions. We are not controlled by it, but we want to have it before us. I thank him for his cooperation.

Senator SYMINGTON. I don't quite understand, Mr. Chairman. What has Senator Nunn got to do with it?

The CHAIRMAN. He is on the Budget Committee.

Senator SYMINGTON. I see. So you want the recommendations of the Budget Committee?

The CHAIRMAN. I just asked him to confer with them about it. Senator Thurmond.

REQUEST TO CONTINUE PRODUCTION OF MINUTEMAN III

Senator THURMOND. Mr. Secretary, the administration's supplemental request proposed an additional \$324.4 million to continue the production of the Minuteman III missile. This would allow for production of 60 additional MIRVed missiles. Is that correct?

Secretary RUMSFELD. That is essentially correct.

Senator THURMOND. Now, as I understand it, SALT II negotiations are going forward based on the Vladivostok understanding which allows 2,400 strategic nuclear delivery vehicles to each side, with only 1,320 of that number to be MIRVed vehicles, is that correct?

Secretary RUMSFELD. The figures of 2,400 and 1,320 are correct.

Senator THURMOND. Also I believe deployment of silos other than those now in place would be disallowed, so we either have to use our present ICBM sites or deploy these SALT-allowed strategic missiles in submarines?

Secretary RUMSFELD. That is correct. There is freedom to mix within those numbers as between the submarine-launched ballistic missiles, SLBMs, land-launched intercontinental and ballistic missiles, ICBMs, and heavy bombers.

Senator THURMOND. Of the two, Mr. Secretary, which do you feel are most survivable, the missile in the submarines or the ICBMs in silos?

The CHAIRMAN. Would you just yield to me a moment.

Mr. Secretary, you will have to make a judgment about answering any of these questions in open session.

Senator THURMOND. Any question that I ask you that you feel is secret, we will carry it over until we have secret session, because it is very difficult to go from secret to nonsecret on some of these questions.

Secretary RUMSFELD. Yes, sir. Thank you.

We feel that the maximum survivability for the United States strategic nuclear deterrent is best achieved by having a combination of the three. that is to say, the SLBMs, the heavy bombers, and the ICBMs.

The important thing with respect to the President's request on Minuteman is, as was stated in the communication to the Congress, that this is the only ICBM production line that the United States has active at the present time. As I indicated in my testimony before the committee in January, we would review the rate of progress in

SALT, and that it was conceivable we would be coming back to Congress in the event we felt that any adjustments were necessary. I indicated at that time that I believed it was a close question.

The President's has made a judgment. It is now some 6 months time since his earlier decision last November or December. The rate of progress in SALT suggests that we do not have an agreement in hand at the present time. The Administration had requested funds to keep that line open through fiscal year 1976. Unfortunately, lines aren't simply open or closed. The Minuteman III line itself is, in fact, a blend of a variety of suppliers who work on that particular system in different stages. We indicated that sometime around March or April some of the suppliers would begin moving away from that line, and, therefore, prudence suggested to us that at the present time it makes sense to request the funds for fiscal year 1977 which will hold the suppliers to that production line. We can review that decision subsequently as we move through this year and the next year, and in the event SALT evolves in a way that it is clear that those missiles will not be needed, we will have ample time to not spend the money. Conversely, given where we are today, were we to make a judgment that we would not request those funds, then we would be allowing the suppliers to move away from that line; we would be in a situation where the suppliers would be in effect beginning the process of disestablishing the only ICBM line that this country has, which seems not to be a wise thing to do in the midst of strategic arms limitations talks.

That is the reason for the request. I would anticipate that we could review that decision later this year. Fiscal 1977 doesn't start until October 1st. So the funds wouldn't be expended until after that time. Then we would review it next year, and do that which makes sense from the national security standpoint of the United States.

Senator THURMOND. Mr. Secretary, recognizing that we need some or both, would it be your view that in building future systems we should tilt toward the system which is most survivable?

Secretary RUMSFELD. Survivability is achieved through a combination of forces. You can achieve a certain measure of weight on survivability by improvements to a particular system—the heavy bomber, the land-based missile, or the submarine system—but survivability doesn't end there.

TRIAD PROVIDES GREATER NET SURVIVABILITY

One has to also look at the fact that the totality of those three legs of the Triad provides a greater net survivability and assurance and hedge against technological advancements with respect to any one of the three systems. That is to say submarines are the most survivable system today. However, if then we discovered at some point that there had been dramatic advancements in Soviet ASW work, or dramatic advancements that could interfere with our ability to communicate with our submarine force, we would certainly not be very happy if we had put all of our emphasis on what now is the most survivable of the three systems.

So I think it would be wrong to pick one element of the Triad and say, yes that will be the most survivable element forever.

Senator THURMOND. Of course I am for all three. But it is a question now of what proportion.

I am wondering at what point in time you feel this Minuteman III production requested in the supplemental could force us to reduce the submarine system if the SALT II agreement is reached.

Secretary RUMSFELD. What would be done, Senator, in the event a SALT II agreement is achieved at something approximating the 2400-1320 limits with freedom to mix, is that we would re-do the calculations with respect to achieving the mix that would best achieve our objectives. To the extent these calculations suggested that additional Minuteman III beyond a certain number were not needed, the Congress would be so informed, and we would simply not produce the extra missiles. The result would be to alleviate your concern about shutting out certain submarine capabilities if, in fact, that was not in our interest. However, we want to maintain the option of having the Minuteman III line open during a period when we lack an agreement. In the event we reach an agreement, then we would simply recalculate our requirements given the circumstances which existed at the time and answer the question. What is the best mix for the United States? This is exactly what the Soviet Union would do; we would then structure the mix of land, sea and air elements of the Triad to achieve the most effective deterrent.

Senator THURMOND. Now, would it not have great impact on SALT and represent a very strong U.S. position if we took the House Armed Services Committee position and added initial fundings for a Trident submarine, giving us two this year rather than the one requested in the budget?

Secretary RUMSFELD. I, of course, addressed that in my testimony.

FY 77 BUDGET OPTIONS

(Numbers Show -- Quantity of Ships
Procured/Costs in Millions)

SHIPS	PRESIDENT'S BUDGET	HASC ACTION	ADJUSTMENTS TO PRESIDENT'S BUDGET	NEW BUDGET
TRIDENT	1/\$ 792	2/\$1520	-	1/\$792
ATTACK SUBMARINE (SSN 688)	3/\$ 959	4/\$1316	-	3/\$959
CARRIER (CVNX)	-	0/\$ 350	+0/\$350	0/\$350
STRIKE CRUISER (CSGN)	0/\$ 170	0/\$ 302	-	0/\$170
AEGIS DESTROYER (DDG-47)	1/\$ 859	-	-	1/\$859
USS LONG BEACH AEGIS	-	0/\$ 371	-	-
ASW DESTROYER (DD 983)	-	4/\$ 940	-	-
FRIGATE (FFG-7)	8/\$1180	4/\$ 590	+4/\$521	12/\$1701
SUPPORT SHIPS	3/\$ 637	6/\$1235	+1/\$103	4/\$740
USS BELKNAP	-	1/\$ 213	-	-
CLAIMS/COST GROWTH	\$1694	\$541	-	\$1694
TOTAL SHIPS	16	21	+5	21
TOTAL SCN COSTS (\$ MILLIONS)	\$6290	\$7378	+\$974	\$7264
ADDED R&D FUNDING	-	-	+\$200	+\$200
TOTAL ADDITIONAL FY 77			+\$1174	\$7464

Secretary RUMSFELD. All of those who have been involved—I don't believe there was any disagreement on this issue at all—felt that the program that is presented on the chart—which provides for one Trident—is the best program and makes the most sense from the standpoint of improving our overall capabilities.

SOVIET NUCLEAR SUBMARINE BUILDING CAPABILITY

Senator THURMOND. I believe the Soviets have deployed about 11 Delta submarines, which have the 4,200 mile range missile. These subs can hit U.S. targets without even leaving their own waters. Also it is my understanding that the Soviet attack nuclear submarine production capability is many times better than ours. This is evidenced by the fact that in 1975 they completed 10 submarines while we produced only 2. Further, it is my understanding that they are building nuclear-powered ballistic missile submarines such as the Delta at a rate of about six per year, whereas our Trident is moving at a rate of one or two per year. Are these comparisons generally accurate?

Secretary RUMSFELD. The Secretary of the Navy indicates that is generally correct. I would have to go back and consult our detailed net assessment book, but the driving question with respect to Trident is, what makes the most sense from the standpoint of the United States in terms of the strategic nuclear balance. That is to say, what relationship should there be among submarine launched ballistic missiles, the Minuteman force, and the heavy bombers. The conclusion that we come to, having performed the force mix calculations, is that the building rate should be as proposed in the President's budget.

Senator THURMOND. Mr. Secretary, I want a clear understanding of how the Minuteman III program would impact on any limitations we might agree to in SALT. Based on my understanding at present, while we may wish to continue the Minuteman III production for test programs—and I would favor it—and possibly add on to our strategic forces, I would not wish any support I might give to your request to be construed as belief that Minuteman III system in present silos are more survivable than nuclear SLMs, submarine-launched ballistic missiles. As I see it, we must have both. But I feel we should be careful about any move that takes us away from numbers of strategic submarines.

Secretary RUMSFELD. I see your point. I can assure you that there is nothing in the President's request to keep open the Minuteman III production line that would in any way reflect a bias in favor of ICBMs as opposed to SLBMs in a mix different than that which we now have. That is not the rationale behind Minuteman III request.

The CHAIRMAN. Senator, your time has run over.

Senator THURMOND. Thank you, sir.

The CHAIRMAN. Senator Jackson, we are glad you could get here. And we are glad to recognize you at this point.

QUALITY RELATIONSHIP TO DECLINING NUMBER OF NAVY SHIPS

Senator JACKSON. Mr. Secretary, there has been a lot of discussion, of course, and I have spoken out on the declining number of Navy ships that we have available in terms of numbers. We are down now, I think, in numerical terms to the lowest levels since 1939. What I

want to ask is—and I think Senator Leahy raised a very proper question—is the quality relationship; that is, not just the numbers of ships, but the size of ships and the ability to perform the missions. Is it your judgment that the funds you have requested here for additional ships are necessary in order to carry out the two main missions, as I understand it, of the Navy; that is, to keep the sealanes open, and to maintain a capability offshore in fulfillment of treaty commitments, specifically NATO as the largest commitment? Is that a fair assessment of the situation?

Secretary RUMSFELD. Senator, I would like to respond with a somewhat longer answer than I might normally give. This is a subject that has received a good deal of public attention. My personal views are as follows.

First, that one has to look at what a country is trying to do with its Navy. One also has to look at the distinctly different geographical problems that nations have to deal with when thinking about what they would do with their navies. Then there are literally dozens of indicators that one can examine. Some are quantitative, in terms of numbers, of size, weapon systems, and types. There are qualitative indicators that one can consider.

It is clear that no one of the indicators is determinative, that no one of them can be sufficiently inclusive to lead a person to a sound judgment. We, therefore, in the Department have, as have others, looked at all of them together and come to some conclusions. These conclusions are that as of today the U.S. Navy and its allies have naval capabilities which are superior to those of the Soviet Union and its allies. The United States has a more capable Navy than does the Soviet Union, and the United States is today capable of meeting its assigned missions.

But, we must concern ourselves not with today, because the Navy we have today was determined a number of years ago. What we are dealing with here are decisions that will affect what the Navy of the United States will have as we move into the next decades.

Senator JACKSON. You are saying that the Navy as of now can fulfill its assigned roles and missions?

Secretary RUMSFELD. Would you address that, Admiral Holloway, so that everyone is aware of what the Navy view is?

U.S. NAVY TODAY HAS MARGINAL SUPERIORITY OVER SOVIET

Admiral HOLLOWAY. Yes, sir. In my professional judgment, as Chief of Naval Operations, I believe that the U.S. Navy today has the capability to carry out its mission and tasks as prescribed by our national military strategy. I don't think our margin for success is very large. But I believe that in the majority of situations in which we could find ourselves confronting the principal potential enemy, the Soviets, we would be able to carry out those tasks necessary to achieve the strategy.

Senator JACKSON. Are you saying that you need the funds requested here to be able to carry out those assignments, roles, and missions in the future? I am well aware that we are talking about leadtime, knowing what the Soviets are doing, and what their capability happens to be at the moment. There is a big argument, and you very carefully said it is marginal right now, I think that is the way I read you, isn't that right?

Admiral HOLLOWAY. That is right, sir.
 Senator JACKSON. It is marginal now. What will it be if we don't do these things?

Admiral HOLLOWAY. If we maintain the fleet at its present structure, that is, numbers and kinds of ships, and simply upgrade the capabilities of the ships themselves, it is my opinion, based upon agreed national intelligence estimates, that in a period of from 5 to 10 years, I would say our ability to carry out our principal responsibilities would be in jeopardy. I look at the Navy's principal responsibilities as being able to maintain the integrity of the sea lines of communication between the United States and our allies overseas, to our own U.S. forces deployed overseas, and to those areas of the world that I think are essential to our primary national interests.

PROPOSED BUDGET AMENDMENTS NEEDED FOR 5-YEAR SHIPBUILDING PLAN

Secretary RUMSFELD. As I have said, there is a complete understanding within the Department as to what our circumstances are today. Our concern has been about the future. This proposed budget amendment is, Senator Jackson, the result of a National Security Council study which has not been completed, but which is far enough along that we are able to respond to Senator Stennis' request that we comment on what we should do at this stage in the legislative process. It is my judgment, and it is certainly the judgment of the Secretary of the Navy and the Chief of Naval Operations, that the President's decisions with respect to this budget are correct, and that these adjustments to his tentative fiscal year 1977 5-year plan are needed. Again, these ships are ones which will be in the fleet from 1985 to the year 2000 and beyond.

Senator JACKSON. I understand.

But in the meantime the margin here is thin, and what you are saying, really, is that it will get thinner unless something is done, is that a fair assessment?

Admiral HOLLOWAY. Yes, Senator, that is exactly it.

PRESIDENT RECOMMENDS MIX OF NUCLEAR AND CONVENTIONAL POWERED SHIPS

Senator JACKSON. One other question. As I understand in the President's recommendation, there is a mix here of, reading from the statement, anti-air-warfare and antisubmarine ships. And what you are saying is a mix of nuclear powered, the frigates, and conventional power?

Secretary RUMSFELD. That is basically correct; we desire to have a mix of nuclear and non-nuclear-powered ships.

Senator JACKSON. I read here it would involve the conventionally powered Aegis destroyers, and the nuclear strike cruisers, in a 2-to-1 ratio?

Secretary RUMSFELD. Right.

Senator JACKSON. And what you are saying is that in order to get the maximum of platforms, you maintain this 2-to-1 ratio, and that by using conventionally powered ships in the meantime, that from a cost-effective point of view you are going to get more air defense for

the dollar, unless I am confused. I am trying to get to the guts of this thing.

Secretary RUMSFELD. That is correct; we would obtain more overall capability for the dollar.

Senator JACKSON. More overall air defense and antisubmarine capability, isn't that what you are saying?

Secretary RUMSFELD. Yes.

Senator JACKSON. So if you make it all nuclear you don't get as much during this time frame in terms of ASW and air defense. Have I summed it up right?

Secretary RUMSFELD. Senator, the way I looked at it is that we have a mix of nuclear and conventional ships. We do today, and we will in the future; there are certain advantages to that.

Senator JACKSON. The House has cut out the FFG-7, virtually all of it. And you have requested, I think, 12 according to your statement?

Secretary RUMSFELD. Yes, sir.

Senator JACKSON. They left in four. What is your position on that?

Secretary RUMSFELD. The President's original request was eight.

Senator JACKSON. You are amending your request. It was eight originally, and they cut it to four. And you are amending your request to go to 12.

Secretary RUMSFELD. That is correct.

Senator JACKSON. Give the reason for it.

NEED FOR FFG-7

Admiral HOLLOWAY. In our analysis, in which we matched the U.S. naval forces of the future against what we anticipate the Soviets will have, we determined certain deficiencies. Without going into detail. I can say that a probable area of deficiency will be in our ability to defend surface forces, which includes merchantmen oilers in convoy, and so forth, against the threat of air attack from the Backfire bomber in a naval role, and to defend against antiship cruise missiles. The FFG-7, which is the *Perry* class frigate, is a capable anti-air warfare ship.

[Deleted]. It also has the capability to operate against Soviet nuclear submarines, and it has the Harpoon for surface-to-surface action.

This ship, can—as I say, it is inexpensive enough to be obtained in quantity—gives us a density of force which enables us to best cope with what we see as the growing area of Soviet naval capability.

FRIGATE SHIPBUILDING PROGRAM

Senator JACKSON. With the House adding everything on, it is kind of confusing. They turned around and requested eight, and they knock out four, left four, and then voted to terminate the program. I think this is important, Mr. Chairman. I just want to get the professional judgment here.

I think this is a very important item here, because it runs contrary to what the House is attempting to do. They are talking about stepping up the shipbuilding program so that the Navy will be able to better fulfill its role and missions in the future, and then in a critical part of that program, I must say, according to the testimony here, to provide the necessary ASW capability and air defense capability.

The largest part of it will come out of this program they eliminate. And I take it that by your reclama here, not only are you objecting to the cut, but you are requesting four more and no termination; is that correct?

Admiral HOLLOWAY. Yes, sir. The frigate program provides that element of naval strength called density of force, number of ships. Naval power consists of individual ship capabilities, which ought to be able to cope with enemy weapons systems—that is quality and quantity, which means enough of those systems to do the job the country requires, by the strategy, against the enemy we anticipate we will be facing.

The CHAIRMAN. Thank you, gentlemen.

Senator Goldwater.

Senator GOLDWATER. I will yield my time to Senator Taft.

The CHAIRMAN. All right, Senator Taft.

Senator TAFT. Thank you, Mr. Chairman.

Thank you, Senator Goldwater.

Mr. Secretary, is it true that the battle scenarios and the studies in the Defense Department are being ruled out as a consideration in developing the alternatives in the National Security Council studies?

Secretary RUMSFELD. When you say the battle scenarios, if you mean the simulated battle scenarios, the answer is, certainly not.

Senator TAFT. This should be a consideration?

Secretary RUMSFELD. Certainly.

MODERNIZATION OF LONG BEACH

Senator TAFT. As to some of the decisions here, I wish I had had a little more time to review it, as some of the other members have said. But on some of the specific recommendations here, let me just ask some very specific questions. Why go to the Aegis on the DDG rather than going with the *Long Beach*, which is already in existence, and which is admittedly already outdated or going to be outdated?

Admiral HOLLOWAY. If I can answer that, Senator. The *Long Beach* is a nuclear-powered warship now in the fleet. It will be due to come in for regular overhaul in 1978. During its regular overhaul, which all major combatants go through every 3 to 4 years, the Navy proposes to upgrade its current missile system so that it will continue to be a capable ship in the fleet. Eventually, in 1984, we propose to give the *Long Beach* a complete modernization, taking it out of commission for 2 years. It will then have a strike cruiser capability—in fact it will be identical to a strike cruiser. That will cost in the neighborhood of \$700 or \$800 million in fiscal 1977 dollars. It is very expensive. In fiscal 1978, it is my opinion that we need that \$700 or \$800 million—which would go into modernizing an existing ship—to better apply to building additional ships such as the FFG-7, the frigate. Our problems today are concentrated in the area of a shortage of numbers of platforms rather than in quality of existing platforms.

ANTISUBMARINE CAPABILITY

Senator TAFT. Let me ask, with regard to antisubmarine capability again, could you give us the rationale, Admiral, of the decision to go with FFG's rather than some increased cost, obviously, possibly double for the number of platforms, going with more DD-963's?

Admiral HOLLOWAY. Yes sir. The DD-963, which is the *Spruance* class destroyer, is a splendid ship. Thirty of them have been authorized and funded by the Congress and are currently either joining the fleet or under construction. We believe that after a run of 30 ships it is essential that we improve the breed and not go back to a design that was developed in the mid-sixties. Therefore, the Navy proposed to take the *Spruance* class destroyer and upgrade it with the most modern radar and weapons suite available. That is what the DDG-47 is. It has the ASW capability of the DD-963, and in addition, it has an anti-air warfare capability. We believe that in the future, wars are going to be fought in a three-dimensional environment. We do not think that one group of ships can plan to fight submarines with no interference from other surface ships or air attacks. Therefore, we would propose that those ships that we build in the future be able to have some capability in anti-air warfare, antisurface warfare, and antisubmarine warfare. The *Spruance* class destroyers are largely oriented toward ASW, and as I pointed out to you, our analyses of 10 to 15 years in the future indicates that a major threat is going to be antiship missiles and Backfire bombers.

Senator TAFT. Can't the 963's be given an anti-air warfare capability?

Admiral HOLLOWAY. Yes sir, they can. That is what the Navy proposes to do, and call it the DDG-47. That is not the best possible anti-air warfare capability. That is what we refer to as a "paste on" job; this would be possible without any major redesign of the ship.

Senator TAFT. Isn't that happening with the boats going to Iran?

Admiral HOLLOWAY. Yes, it is. The *Spruance* class destroyers that we have under contract for the Imperial Iranian Navy are not the same as the DD-963's, but have a modest antiwarfare capability.

Senator TAFT. The real concern that I have with the decision relates to antisubmarine warfare. I have an item that I would like to put in the record at this point, Mr. Chairman: Appendix C of a white paper which I prepared and sent to the members some time ago.

[The above referred to document follows:]

APPENDIX C

THE CURRENT STATE OF ANTI-SUBMARINE WARFARE

The main body of the paper discusses the need for a strong anti-submarine capability in order to thwart the Soviet's goal of denying key sea lanes to the United States and her NATO allies. The question as to whether the United States can achieve this goal is quite complex. The answer involves not only the quality of U.S. anti-submarine warfare (ASW) capability but also our perception of how the Soviet Navy would employ submarines in wartime. The issue is clouded by the fact that the U.S. Navy has not had to employ its anti-submarine capability in combat since World War II, and, as we have indicated in the White Paper, submarine and anti-submarine capabilities have changed considerably since that time.

The only measures of effectiveness available to the Navy with which to judge its ASW capabilities lie in analytical studies, war games, and exercises at sea. Unfortunately, studies and war games are replete with a large number of needed but nevertheless limiting assumptions. These assumptions include the performance of the Soviets and our own forces, and the scenarios themselves, in aggregate causing considerable uncertainty. The at-sea exercises tend to be too limited in scope or otherwise artificially constrained in time and geography so as to cast doubt on their outcome.

The U.S. Navy tends to place its anti-submarine objectives into two broad categories: first, the category generally referred to as offensive ASW, which means that enemy submarines are attacked when on patrol or enroute to an operating area; second, direct screening or protection of surface ships.

In general it appears that the Navy's ASW capability has shown considerable increases in performance in recent years as a result of various advances in technology. Nevertheless, it also appears that the capabilities of the submarine have grown at a far faster rate than that of its opposition, the ASW forces. This appendix will discuss some of the reasons why the current state of anti-submarine warfare possesses numerous shortfalls and weaknesses and thus needs considerable strengthening.

Looking at the offensive ASW phases, we see that in any conceivable conflict with the Soviet Union we would expect to find a significant fraction of the Soviet submarine force already deployed in open waters and some remaining fraction still in port or enroute to an operating area. The current U.S. Navy technique is to detect those submarines which are in open ocean using fixed ASW surveillance systems and then to send submarines and aircraft out to localize and attack them.

The fixed surveillance system is very sensitive to the submarine's radiated noise as well as to sound propagation conditions and other noise in the ocean (i.e., merchant and fishing vessels, and marine life). There are vast ocean areas where it is difficult or impossible to detect and track a certain portion of the current Soviet nuclear submarines. There is hardly any capability at all to detect and track diesel-electric submarines when they operate on battery at slow speeds, which new-type conventional submarines can do for significant distances. As the Soviet nuclear submarines become quieter in the future or if they are really quieter than we currently estimate, the capability of our fixed ASW detection systems will deteriorate to a lower probability of detections. Naturally, when submarines go fast they make more noise and become detectable, but it may not be wise to rely on the Soviet's willingness to make high speed when they are transiting or on patrol in open ocean. Therefore, although we place great reliance on our ASW surveillance system for open ocean detection and tracking, given the limitations of that system, the resulting effectiveness of the attack forces may be in question. Without adequate ASW surveillance with which to position our mobile ASW forces, the problems of offensive ASW increase and effectiveness is minimal.

When the fixed ASW surveillance system detects a Soviet submarine a Navy P-3 Orion ASW aircraft would be sent to the area. However, only a certain fraction of those submarines located by the fixed surveillance system are redetected by the ASW aircraft. Then, those that are redetected must be localized and attacked. The Navy can expect only a certain fraction of those attacks to be successful, due to a combination of factors including the nonperfect probability of an air-launched torpedo destroying a Soviet submarine and the limited ability of the airplane to reattack if the first attack fails.

The Navy also uses its own nuclear attack submarines to attack a Soviet submarine previously detected by surveillance. The attack submarine, unlike the ASW airplane, is not nearly fast enough to be in the "right place at the right time" to cover the large ocean areas under surveillance. Since surveillance contacts may be fleeting rather than continuous, by the time the submarine reaches the contact area the contact may be lost. The submarine then faces a problem of redetection.

The Navy recognizes these limitations and backs up its offensive ASW operations with additional forces and tactics using submarine barriers and ASW minefields at geographic chokepoints, although the Navy's minelaying capability is severely limited. These somewhat more passive tactics may be relatively effective against older, noisier nuclear submarines. However, the modern, comparatively quiet Soviet submarine will have reasonably good probability of safely penetrating these zones if it is slow and cautious. Furthermore, many submarines are expected to be pre-deployed at the initial phases of a war and are not likely to be transiting the defended zone until they have attacked their targets. The necessity for Soviet submarines to transit barriers and minefields and the number of transits made is dependent upon their endurance, weapon payloads, and location of their bases. It is conceivable that the Soviet Navy will soon take advantage of forward bases in several client states as a way to extend the duration of submarine patrols.

An examination of the Navy's offensive ASW tactics thus reveals a number of shortcomings which would appear to indicate that attrition of Soviet submarines will not be so great as to prevent their effective use. Particularly in the first months of a conflict, the number of submarines that would remain operational and could attack shipping would be large. The burden of ASW would then fall on the backs of those forces that protect merchant and naval shipping. These are the forces that are in company or in "direct support" to the ships needing protection of "escorting."

Anti-submarine naval forces consisting of surface escorts, submarines, and aircraft are used to protect surface ships. Those ships sail either in naval formations or in merchant convoys.

The most common type of vehicle used for the escort role is the ASW surface ship. There are essentially two generic types of conventional surface ASW ships, and the differences between them are primarily their hull-mounted sonars. One type employs a direct path active sonar while the other uses a sonar capable of indirect path or convergence zone. An ASW ship's sonar is probably its most important asset.

The new FFG-7 class frigate (formerly the PF) is an example of a ship having direct path sonar. Unfortunately, depending upon the prevailing ocean acoustic conditions, the sonar's sound rays bend both upward and downward, leaving large gaping shadow zones in the middle in which a submarine is not detectable. Even under the best of acoustic conditions active sonar detections are usually so short in range that the submarine, when finally detected, has probably already reached its weapon launch range. Many American submariners consider it no difficulty to penetrate ASW screens imposed by such ships.

The other type of surface ASW escort uses the convergence zone sonar. This sonar is the type used on the new "Spruance"-class destroyer (DD-963), as well as in older ship classes. These sonars rely on the statistics of ocean environment to make their long range detections at the convergence zone; but this occurs only when the ocean conditions favor that mode of operation. Such ocean conditions occur only some fraction of the time, depending upon the location and the condition of the sonar. When the convergence zone detections do *not* take place, which is frequently the case, the sonar reverts back to the previously mentioned short-range, direct path mode. Under those conditions when long-range convergence zone detections do occur, there can be difficulty in re-locating the target when using the ship's ASW helicopter, called Lamps. Given a successful re-detection by the helicopter, there is still the problem of the limited effectiveness of the air launched ASW torpedo.

The Navy has now begun to use passive sonars, arrays of hydrophones towed as a long cable astern of the ship. Referred to as "towed arrays," these sonars improve the probability of detection unless the target is very quiet, but they do so at the expense of giving poor target location accuracy which makes it very difficult to carry out an attack. If the Soviet Navy employs its surveillance systems properly, their submarines would not necessarily need to go fast and would be fairly quiet enroute to intercepting our ships. Thus, they would not be so detectable by the towed array.

Aircraft are another system used for ASW protection. The new Viking S-3A aircraft is the principal carrier-based ASW vehicle. It is fast, has long onstation endurance, and is equipped with the latest avionics and computers. Its primary sensor is the passive sonobuoy. However, at the long distances from their parent aircraft carriers where these aircraft operate, the ocean areas requiring search are very large, yielding fairly low detection probabilities for the widely spaced sonobuoy patterns dropped by each aircraft per flight.

Escort ASW submarines represent the last system used to protect ships from enemy submarine attack. While the submarine represents a better sonar platform than a conventional surface ship, many coordination problems remain unsolved, including identification, communications, and command and control.

While the Navy has in most cases made significant progress in building a well-rounded ASW capability, there are, nonetheless, many major deficiencies. These deficiencies in our ASW capability, coupled with the size of the Soviet submarine threat, could result in heavy losses to American and Allied shipping and naval vessels.

It is vital to strengthen our ASW capability in quality and quantity, but that requires a series of bold actions. These bold actions should include: Development of advanced ASW ships and submarines, advanced sonars, improvements in ASW aircraft and their sensors, as well as procurement of greater numbers of the more effective ASW vehicles. Finally, the Navy must develop more imaginative ASW tactics to complement the improvements in equipment and greater numbers of platforms.

Senator TAFT. Without going into it a great deal, it seems to indicate that the *Spruance* frigate, because of a lack of speed and because of a very short-range sonar capability—when you are talking about the sonar capability of an attacking submarine, the attacking submarine has got a range advantage on this ship.

[Deleted] a great deal further away, if there is any hope that you are going to have any detection with the antisubmarine capability of the frigate, isn't that true?

Admiral HOLLOWAY. Yes, sir. The patrol frigate is not as good an antisubmarine warfare ship as the *Spruance* class destroyer. It is not as good a ship as far as hull and propulsion either. However, it does have an area surface-to-air missile system which provides better protection against the cruise missile than the DD-963 point defense system.

Senator TAFT. Speedwise it doesn't even compare with the Russian submarines at all.

Admiral HOLLOWAY. That is correct. But you don't need to outrun a submarine to sink it. The ASW strength of the frigate, the *Perry* class frigate, is the new technology of the wide aperture towed array sonars and the use of the Lamps—

Senator TAFT. Is that for use in a convoy?

Admiral HOLLOWAY. Yes, it can be used in a number of ASW situations.

Senator TAFT. Isn't there a speed problem with using the fixed array sonar?

Admiral HOLLOWAY. It does hold down the speed of the towing ship involved, that is correct.

Senator TAFT. And of the convoy?

Admiral HOLLOWAY. As I said previously, the towed array can be used effectively at convoy speeds. Again, we must remember that when I say the frigate is not as good as these other ships, it may not be as competent in some respects, but it is only half the cost.

Senator TAFT. I understand that. But the question is whether this is a competent antisubmarine weapon, which this material that I have put in the record seriously questions.

Admiral HOLLOWAY. Our opinion is that it is a capable ASW ship operating with other systems. I will admit, by itself, with its installed sonar, it is not as good as a ship equipped with the SQS-26 sonar. It is particularly designed to operate with and supplement the FF-1052 class frigates in the protection of convoys and logistic forces. But the frigate, operating with other national ASW systems, land based air, towed arrays, and utilizing its helicopter, the Lamps helicopter—

Senator TAFT. If it can locate the submarine. You have sonar location.

Admiral HOLLOWAY. The ship sonar alone is not the only instrument used to locate the submarine. I think we are right on the edge of classified information. It is a localizing device for that ship, after other information has been provided to the ship.

Senator TAFT. Well, with regard to the carrier decision, I note that there is some statement which I was pleased to see about making a study of more platforms and V/STOL aircraft, and so forth. You don't think that that means that we ought to delay a decision on another Nimitz class until we get some kind of further reading on that?

Secretary RUMSFELD. The answer is no; when one reviews the total and deployed capabilities between now and the year 2000 that our studies indicate are required and the period of time that a ship has to be out for overhaul and repair and service life extension, then

advancing by 1 year the lead funding for the CVNX is the appropriate thing to do. The R. & D. money, as you point out, is also important, and that work must go forward.

Senator TAFT. I think the R. & D. decision is a very sound one. And I must compliment you on it.

The CHAIRMAN. I am sorry your time is up, Senator.

Thank you.

Senator McIntyre.

Senator MCINTYRE. Thank you, Mr. Chairman.

Mr. Secretary, I want to say that in closely reading your statement and following you, I really felt tremendously assured, because you were saying time and time again as you took up various facets of our sea fighting forces that you felt that today we were able to handle the job. Nobody was going to kick us around, that we were superior. You got into the area of missilery, and you backed up. But in quality and experience it seemed to me that your statement was a positive one on our naval forces today. Is that a fair statement?

Secretary RUMSFELD. Yes, sir. As Admiral Holloway indicated, our assessment leads us to conclude that our naval capabilities alone, and certainly with our allies, are capable of doing the job. The decisions that we make today will not affect the U.S. Navy for a period of some years. Our concern is the future, and it is a deep one.

Senator MCINTYRE. The concern is the future of the Navy.

Apparently there is quite a conflict arising here. You came in in January or February and said, you wanted eight FFG-7's.

Secretary RUMSFELD. Correct.

Senator MCINTYRE. And the House action, for some reason, as has been alluded to by Senator Jackson and Senator Taft, reduced that to four. And you came back and said, we not only want eight but, we want 12. So there is a real contest on the value of the ship, right?

Secretary RUMSFELD. There was a discussion within the administration in the calendar year 1975, as we wrestled with the fiscal year 1977 budget decisions, as to whether the request should be 8 or 12 FFG-7's. The decision was made to request eight in the 1977 budget, keeping in mind the caveat that the President put forward which was that the shipbuilding program might not be exactly the right one, and he wanted to give the program a thorough review. That review was initiated, and it has produced the conclusions that are shown on the chart.

Senator MCINTYRE. You take issue with the House language in the committee report which says that this guided-missile frigate is now perhaps the least cost-effective of the Navy shipbuilding program.

Secretary RUMSFELD. I didn't hear the statement.

HOUSE ARMED SERVICES COMMITTEE EVALUATION OF THE FRIGATE

Senator MCINTYRE. That is in the House Armed Services Committee report language: "speaking of the frigate, it is now perhaps the least cost-effective of the Navy shipbuilding program."

Admiral Holloway, would you agree?

Admiral HOLLOWAY. I think it is an incorrect statement.

Senator MCINTYRE. The House report also made the following criticism of the guided-missile frigate. You are giving us ammunition. We have got to contend some day, maybe a month from now, with these gentlemen of the House.

Secretary RUMSFELD. In that connection, could I just make a brief comment.

I think the important thing that the House of Representatives has done is to point up the fact that the Navy of the future does need to be strengthened. Their proposal to increase by \$1.2 billion the President's shipbuilding budget request, I think, is a sensible one. As you will see, there are areas of difference. There are some, but we agree on the oiler and we agree on the *Belknap*, although we propose that the *Belknap* be done in 1976.

So, it is a question of judgment as to what the world and the maritime environment are going to be like between the years 1985 and 2000.

The CHAIRMAN. On that point, which one do you support there—let's make that clear—the President's budget or the House committee's action on ships?

Secretary RUMSFELD. They are complementary in many respects. To the extent they are different, we are clearly here to present the President's budget and support it.

Senator McINTYRE. You don't support the House's position on the frigate, right?

Secretary RUMSFELD. That is correct.

Senator McINTYRE. They say it is lacking in size and capacity, the ship lacks firepower, sensors, and redundancy of system necessary to operate in the high-threat area. What about that, Mr. Secretary, and Admiral? You have already mentioned some of these things. I don't want to go over the same ground.

Admiral HOLLOWAY. On the size, it is a 3,600-ton frigate. It is intended to replace World War II destroyers, and the largest of those World War II destroyers displaced about 2,200 tons. It does have a single screw. However, it does have two engines to drive that shaft, and it can make 25 knots using only one of the engines. We would prefer to have twin-screw ships with two engines. The problem is one of expense. We do not think it is a high risk, because at the present time the standard fleet frigate, which is the *Knox* class, or the *1052* class, has been in fleet service for 10 years or more and is a single-screw ship. We are not encountering any problems that indicate a serious deficiency.

Senator McINTYRE. At the bottom page of your statement I take issue with the last paragraph on which you say: "An action at this time to unilaterally cancel the strategic Tomahawk." Where did you get the information that the strategic Tomahawk has been cancelled? That information has been given to you as the result of a Senate final markup.

Secretary RUMSFELD. That is not correct?

Senator McINTYRE. No, cancellation is the wrong term. We have suspended it in view of the overall ALCM and the whole field of strategic cruise missiles. And I might say that it was a small, five-man subcommittee that heard all the testimony of your officials that came to testify on the program.

Secretary RUMSFELD. Then that phraseology is incorrect, and it should say suspended. I wasn't aware of the special language.

Senator McINTYRE. Is this, Mr. Secretary, strategic cruise missile a bargaining agent in SALT in your opinion? I am talking now about the strategic cruise missile known as the Tomahawk?

NEED FOR STRATEGIC CRUISE MISSILES

Secretary RUMSFELD. Senator, the cruise missile is a new technology. The full implications of it remain to be appreciated in the future. It does have a potential strategic capability. It is a weapons system in which the United States has a considerable lead over the Soviet Union. It is a subject that is being discussed in the SALT talks. There have not been agreements with respect to the cruise missile in the SALT talks as of this point.

In negotiating on strategic arms limitation with the Soviet Union, the first thing we know is that we don't know at what point an agreement might be reached, if ever, because one can only agree to an agreement that is in our national security interest.

The question as to the details of an overall agreement, were one to be reached, remains to be worked out. What it will look like I can't say.

Therefore, the answer to your question is, no, if the implication of your question is, do we want the cruise missile simply so we can trade it away in SALT.

Senator McINTYRE. It is not a SALT chip, the fact that we are superior to the Russians in this technology, and in the process of putting it into R. & D. and development, the superiority that we could advance by saying, we will go with the strategic cruise missile, that is not a SALT chip in your opinion, given our basic superiority.

Secretary RUMSFELD. I don't know what you mean by SALT chip. If you are asking me, is the United States interested in cruise-missile technology for the purpose of negotiating it away in strategic arms talks, then the answer is "no."

Senator McINTYRE. What platform are you thinking of for this?

Secretary RUMSFELD. This is such an important subject; I hate to leave it as half a thought. That is not to say that at some point, just as with any other strategic system, we could not conceivably at some point arrive at a total package that was in our national security interests that constrained one or more of our present or prospective strategic systems.

Senator McINTYRE. It is not a SALT chip, but it might very well be involved either going forward or coming back or lessening in a package that might come out of a SALT agreement, is that what you are saying? It might be involved in a package under a SALT agreement in which we pull back?

Secretary RUMSFELD. Let me put it this way. Certainly, if you had limits on the number of delivery vehicles of, say, 2,400 and if you had strategic cruise missile, they might be within that 2,400 limit, in some way or other, or else you would have agreed that they would not fall within the 2,400 ceiling.

I think the trouble is that we are trying to predict the shape of a package that could conceivably evolve from the strategic arms limitation talks that are presently being conducted and are very sensitive. We are in open session, and I don't think it is terribly useful to discuss this further, except in closed session.

So, I am trying to answer in a way that befits an open session, rather than discussing the subject in a more complete way as we did earlier in the year during closed session. That is the inhibition I am under.

Senator McINTYRE. I don't want you to be under any inhibition. We can talk about it. It is very complicated, very difficult, very complex. And it seems to me that the action of this Senate committee is going to be under fire when we come up against the House. But I think we have got to have a position that does not involve canceling. The ALCM is a much better weapon, it can do much better than the SLCM. But I will hold back until we are in closed session.

Secretary RUMSFELD. My recommendation is that the Senate action affected what the Senate described as strategic cruise missiles, based on some sort of a range criteria. My hope is that the Senate will adjust that in a way that does not inhibit the research and development work and other work which is taking place with respect to the cruise missile.

Senator McINTYRE. For the record, let me just say, Mr. Chairman, so that you can be assured, that the action of the subcommittee in opposing the full committee was simply to hold back on engineering development, because of the complexity of the overall problem, and the commonality involved with the ALCM, which we happen to think in the subcommittee is a better weapon. But we can cover that in closed session.

The CHAIRMAN. We will continue that in closed session.

Senator Bartlett.

Senator BARTLETT. Following along on what the distinguished Senator from New Hampshire was saying, it was my understanding that in the committee consideration of the SLCM, that the research and development for the SLCM was very similar to that of the ALCM, and hence it was duplicating the R. & D. of the ALCM. My question is, is that the opinion of the Secretary of Defense, that the R. & D. would be duplicatory of what is being undertaken as far as the ALCM is concerned?

Secretary RUMSFELD. I don't think that it can be described as being a duplication. I would describe what is taking place as a development of advanced technology that is proceeding on two paths, with a degree of cooperation between the two paths. As we learn more and as information evolves, decisions will be made as to the various directions in which it is desirable to go. But, were there a way to save money by eliminating one or more portions of the R. & D., or the work on either the ALCM or the SLCM, we certainly stand ready to do that. That has not evolved at this point.

Senator BARTLETT. Is there any coordination in the R. & D. between the two that is lacking, or that could be imposed?

Secretary RUMSFELD. If I knew of any, we would certainly take care of it.

Do you want to speak to this, Admiral?

Admiral HOLLOWAY. I think we regard the program with a certain amount of pride because of the degree of cooperation between the Navy and the Air Force in those areas of commonality between the two missiles.

Senator BARTLETT. My question then is, would the action of the Senate committee in not approving the R. & D. for the submarine- and surface-launched cruise missile delay or impair the effectiveness ultimately of the SLCM? Would there be delay?

Secretary RUMSFELD. There is no question—

Senator BARTLETT. Or would there be a less effective project? Would there be an impairment of the research and development?

Secretary RUMSFELD. There is no question but that it would be in our interest to see that this technology is developed and that we proceed along in an orderly way to explore the potential for what appears to be, and what reasonable people have concluded is, a system that has the advantages of exceedingly good accuracy, a great deal of versatility and flexibility, and a reasonable cost.

Senator BARTLETT. What would those adversities be if the decision of the Armed Services Committee prevailed?

Secretary RUMSFELD. I believe I address them specifically in a portion of my prepared testimony which I did not present in the hearing.

[Discussion off the record.]

Senator BARTLETT. Could I have later a detailed accounting of what the adversities would be, if the SLCM program does not go forward as requested?

[The information from DOD follows:]

For the adversities of not going forward with the Tomahawk program to be appreciated, the evolution of the development plans and objectives of the present ALCM and Tomahawk programs must be understood.

Prior to mid-1973 the Tomahawk and SCAD (ALCM precursor) were proceeding independently towards their individual objectives—the Tomahawk to be a long range attack missile and the SCAD to be a medium range decoy. The SCAD design was driven to maximize the number of missiles that could be carried in the B-52 bomber on the SRAM rotary launcher while the Tomahawk design was constrained to permit launch from a submarine torpedo tube using a rocket booster motor to attain water exit and initial flight.

In June 1973 these programs were identified as on-going programs that could possibly satisfy the requirement for a strategic long range air to ground missile. Shortly thereafter it was decided to terminate engineering development on the SCAD and to reorient it as an attack missile technology program closely coupled to Tomahawk development.

In July 1973 the Air Force was directed to pursue a program to demonstrate the capability to develop and deploy a long range air-launched cruise missile (ALCM) with the initial capability to evolve from the armed SCAD to be deployed on the B-52 bomber with the interim capability to utilize technology from the Navy cruise missile program.

In August 1973 the Navy was directed to proceed with the development of a long-range cruise missile including demonstration of underwater and air launch capability and, if feasible within the funding provided, demonstration of a tactical variant and surface launch. Interest in sea, air, and land launchers was noted. Areas of common technology, where cooperative and coordinated development by the Air Force and the Navy was required to avoid duplication of effort, were identified and the requirement for the assignment of an Air Force Officer to the Navy Program Office, to explore other possible avenues of commonality, was established.

In May 1974 similar performance goals for the two cruise missile programs were described. The ALCM was to achieve the range goal with a range extension module.

With the above background the following points can be made:

The performance goals for the ALCM and the Tomahawk missiles are almost identical.

Duplication of effort in the ALCM and Tomahawk programs has been eliminated by identification and development of common technology and subsystems where feasible—essentially only the airframes and internal arrangements of subsystems in the missiles differ.

Development milestones for the cruise missile programs have been established to maximize the efficiency and benefits of the common development efforts.

The Tomahawk design, while constrained to launch from a submerged torpedo tube, recognizes and has application to air, land, and sea (surface and subsurface) launchers.

The ALCM design has been constrained to make the most efficient use of existing B-52 launchers and support equipment.

Neither missile can be described as "better". While the Tomahawk can be deployed on air, land, and sea (surface and subsurface) launchers, it is not as well suited to B-52 deployment as the ALCM. While the ALCM is more efficient than the Tomahawk deployed on the B-52 bomber, it has not been designed for application to land and sea (surface and subsurface) launchers.

Now to the adversities of not continuing with the Tomahawk program as requested by the Department of Defense.

First, decoupling the phasing of the ALCM and Tomahawk programs and more importantly proscribing the development of variants within the Tomahawk program will result in the loss of the efficiencies of resource and management utilization that have been so carefully nurtured in these highly integrated programs. The result of this action will be increased costs and development spans.

Second, the Tomahawk missile is one of the most significant development programs underway in regards to its potential applications. The Tomahawk missile, armed with conventional or nuclear weapons, will be capable of attacking land and sea targets from land, sea and air launch platforms. Evolving employment concepts are beginning to focus on specific strategic and tactical applications of conventionally and nuclear armed variants of the Tomahawk missiles. Strong new roles for the Tomahawk as part of tactical and theater forces, only tentatively identified earlier in the program, are being developed and may become the dominant requirement for the weapon system. Cancellation of what has been called the strategic variant of the Tomahawk will significantly limit the latitude and effectiveness of our response to an aggressor in the future. At this time do notice the prospect of any future system capable of such universal application.

Third, the course of action proposed could deny evolving technology that offers potential for significantly higher speeds, reduction of observables and dramatic accuracy improvements in the 1980s.

Fourth, there will also be a significant impact in the on-going SALT negotiations. The central purpose of arms limitations treaties is to enhance the security of participating nations, to decrease the probability of nuclear war, and reduce the expenditures of funds necessary to maintain the national security. As a focal point of negotiations, the Tomahawk missile, with its possibility of nearly universal application, is of great significance.

Secretary RUMSFELD. One of the problems with it, as I understand the Senate action, is that it affects this question of longer range uses.

A second problem with it is that by suspending the funds, it obviously delays the project by that amount of time of the suspension. I assume the delay would be a year, since we are talking about the fiscal 1977 budget. Any suspension would adversely affect the ability of the United States to proceed with respect to a very advanced technology, which has excellent promise and for which the doctrine is not fully developed; conceivably the doctrine and full potential would not be fully developed given the suspension.

It also places us in a position, given the fact that this is a subject that is periodically injected into the strategic arms limitation talks, of prejudging what the outcome of the strategic arms limitation talks would be. It strikes me that that is not in our country's interest. I can see no advantage whatsoever to the action that has been proposed in the Senate, but I can see a series of disadvantages, both from the standpoint of SALT and from the standpoint of the development of valuable technology. If I knew of any duplication, of any overlap, or of any waste in connection with the ALCM and the SLCM, obviously we would seek to eliminate it. We are not in business to waste money.

Senator BARTLETT. So you are saying, then, that this action would either delay or would kill the SLCM program?

Secretary RUMSFELD. I am saying what I said. It clearly would delay it. The Senator said it would not kill it, because it is a suspension and

not a cancellation; I wouldn't want to disagree with him. It does what it does, and we have not been provided the specific language.

Senator BARTLETT. Would the Secretary comment on what the Senator from New Hampshire said when he stated that it was the subcommittee's opinion that the ALCM is a superior weapon to the SLCM? And I think I am quoting fairly accurately. Is there an agreement with the Senator from New Hampshire?

Senator McINTYRE. Of course it would be airborne, come in any direction, and put a greater stress on the Soviet defenses. We don't want to get too much into this here. I thought we were going to call it off until we got into closed session. One of the most serious objections to this strategic cruise missile is where it goes. It goes into our SSN's, our attack submarines, that have no strategic mission. It derogates from the very strength of our submarine force.

On top of that you realize that you can't tell when an SLCM is strategic or whether it is only a 200 mile. We are proposing to go full speed ahead with what the Navy wants, which they have testified to here today, and that is that they need a missile that can hit an opposing ship. And to do that they need to put that SLCM on the surface and fire it. And that is what they really need. We are going ahead with that, because it depends upon a point of target. We hope to be able to do it better than what the Soviet Union is doing. So we are supporting the tactical SLCM. We are supporting "Gung Ho" the ALCM, which is a strategic cruise missile. But we are saying that there is no reason that we can see why the strategic cruise missile, whose mission has not been defined, and there is a great question about it, should be spaced any differently than the ALCM, which is 2 years down the road. So it is a decision, a technicality. And I hope this afternoon we can get some of these models in here so that I can impress this upon you. For instance, the ALCM has the same engine as the SLCM, has the same warhead, and the same TERCOM guidance.

Secretary RUMSFELD. I think that makes the point, Mr. Chairman, that we have been fully cooperative between the two programs and—

Senator McINTYRE. I am not claiming any lack of cooperation, I think the Navy is doing OK. But I think there are an awful lot of questions on this.

Senator BARTLETT. The question that I will repeat, based on the question of Senator McIntyre's, is that the subcommittee's opinion is that the ALCM is a better weapon than the SLCM.

How do you respond to that? Is that agreed to by the Department of Defense, and if so why, and if not, why?

Secretary RUMSFELD. The answer to it is that both of those systems have yet to be proved. That is to say, they are at a stage in their development where we do not wish to make premature judgments.

Senator BARTLETT. Do you have as much confidence and hope for one as the other as an effective system?

Secretary RUMSFELD. Yes, indeed. We certainly have confidence that the work we are doing to prove out these systems is sensible and in our interest.

Senator BARTLETT. Of equal importance—

Secretary RUMSFELD. As I indicated at the outset, one of the advantages of cruise missiles is their versatility, the fact that they

can be launched on the surface of the sea, below the surface of the sea, from land or from the air.

Senator BARTLETT. So it is just as important for the Department of Defense to proceed with it as it is the SLCM?

Secretary RUMSFELD. Yes. They have different uses.

The CHAIRMAN. We will come back to that. The Chair proposes that we sit until 1:30 if it is agreeable.

We will come back this afternoon at 2:30. And we will continue in open session, and then contemplate having a closed session, too, to finish up.

Senator Nunn, may I call on you next?

DIRECTION OF NAVY SHIPBUILDING PROGRAM

Senator NUNN. Mr. Secretary, there has been a lot of debate, and continues to be, about the direction of the Navy shipbuilding program, whether there ought to be larger nuclear ships, or smaller conventional ships. Would it be fair to say that this supplemental request comes down tilting slightly toward smaller conventional ships rather than large nuclear ships?

Secretary RUMSFELD. Senator, as I indicated, since the advent of nuclear power in this country, we have had a mix, and we are proposing that there will be a mix in the future. In any given year, how you want to adjust that portion of the total capability in the outyears that you have the ability to effect is a matter of judgment. Given the very small grip we have in any one year of affecting the entire Navy in the future—we can affect only some 13 percent of the Navy between now and 1985, for example—this represents a judgment on our part as to the mix of ships that we feel will provide the capabilities between 1985 and the year 2000 that makes the most sense. It happens, as you point out, that if you add up the number of ships we propose for construction, more are nonnuclear than are nuclear. I don't know that that would be the case each year, as the Executive and the Department and the Congress looked at that slice that they were dealing with. But clearly this numerically is the case for the fiscal year 1977 budget.

Senator NUNN. So you would say this supplemental is tilted in that direction, but it does not mean that there is any long-range decision at this point?

MIX OF SHIPS

Secretary RUMSFELD. What we have done is, we have tried to look at what the world will look like during the 1985–2000 period. We have evaluated what the requirements will be for the United States in trying to deal with the maritime areas and any problems that we might confront in those areas. Our study has considered the contributions of the Air Force, the Marines, and the Navy and other capabilities as well. In doing this we have come up with a mix of ships that will enable us to better perform the job of assuring freedom of the seas and sea control.

Senator NUNN. Let me put it this way. If you compare it to the House program it is certainly stronger in favor of smaller conventional ships, and the House program is in favor of larger nuclear ships, would that be fair?

Secretary RUMSFELD. Correct. The House of Representatives action calls for more nuclear ships.

Senator NUNN. So this administration proposal is certainly different from the House proposal in that it swings more toward the smaller conventional ships than does the House program?

Secretary RUMSFELD. In this respect, yes.

Senator NUNN. Without getting into classified information, I will word this rather generally. We have had Navy witnesses testify that there is a very large percentage of our present fleet that is in less than, let's call it, the C-2 readiness status. Now, your testimony indicates, I think, very clearly, and I think appropriately so, that the impact of what we are considering now will not take effect until at least 1985, mainly between 1985 and the year 2000. Admiral Holloway testified and I understand what he said. He said we now have a thin margin, if we measure our capabilities versus the Soviet Union. And he did not say in all scenarios, he said in a majority of scenarios, which could mean—and Admiral Holloway can clarify this first and then I will ask you the question—that we have a thin margin over the Soviet Union in a majority of scenarios. And that also could mean that in 49 percent of the scenarios that you envision we don't have a thin margin, that we indeed might be inferior to the Soviet Union. So I would like Admiral Holloway to tell us what situation are we in in the minority of cases where we don't have that thin margin that you alluded to.

And then I will ask the Secretary a question.

Admiral HOLLOWAY. I think my words, Senator Nunn, were that in my view we have a thin margin of maritime superiority in a majority of those scenarios that are of greatest vital interest to us. If we take the two extremes: A scenario or a war situation that is of paramount interest to us is a NATO-Warsaw Pact conflict in which the U.S. Navy's principal mission would be to maintain the integrity of the sealines of communication between the United States and Europe. I believe that at the present time we have that capability. When I say a thin margin, I mean it would be a very tough fight. There would be heavy losses on both sides before we were capable of saying that we had won the battle of the Atlantic.

Senator NUNN. So we would have a thin margin in that particular instance?

Admiral HOLLOWAY. Yes.

Now, another scenario might be a situation which I think has less of a probability—and I use it as an extreme example—that would be the Soviet Navy deployed on a worldwide basis suddenly executing a surprise attack calculated to destroy the U.S. Navy. I think that could be a tremendous blow. And whether or not we could maintain our superiority after an attack like that is in question. But I don't believe that the Soviet's or a foreign power's national objectives would be to destroy the U.S. Navy. I think it would be a more ambitious aim, to overrun Western Europe or to defeat the United States.

A specific example of an area where we have lost our local superiority is in the Sea of Japan. During the Korean war we operated Task Force 77, a major force of carriers, cruisers, and destroyers in strike operations against the North Koreans. I think that our ability to do that today in a war with the Soviets would be highly questionable.

Senator NUNN. So if we do two scenarios, you would say in the NATO scenario, keeping the sealines open in a NATO contingency, we would have a thin margin. In an all-out Soviet secret attack against the U.S. Navy for the purpose of destroying the U.S. Navy, we would not have any margin at all?

Admiral HOLLOWAY. Under the circumstances of a total effort by the Soviets to destroy the U.S. Navy regardless of what consequences it might evoke—whether such an action might be viewed by our National Command Authority as a basis for retaliatory nuclear strike—I think that under those circumstances there is probably a 50-50 chance our Navy could carry out its tasks and defeat the Soviets.

Senator NUNN. Because of that latter answer I find that not comforting, but I find it very disconcerting. In my opinion I don't think the American people would define our capability as superior if that scenario takes place.

Secretary RUMSFELD. May I inject myself here?

I would be delighted to have a net assessment of the relative capabilities in the maritime areas made available on a classified basis to this committee. I think that too brief a discussion of it can leave people with misunderstandings. For example, I know what you asked, and I know what the Admiral answered, and I am quite certain that you have had a misunderstanding. I think you asked about the Soviet Navy, or the scenario wherein the Soviet Navy attacked the U.S. Navy. I think the answers the Admiral gave involved not just the Soviet Navy, but Soviet capabilities in total in an attack on the U.S. Navy. It is a minor distinction in terms of constructing a sentence, but it is of considerable importance in terms of walking away with a correct impression of what was said.

Do you see the distinction?

Senator NUNN. I see the distinction.

But let me get to my next point. In any case, under any scenario, the margin is very thin.

Secretary RUMSFELD. That is not correct, with respect to any scenario.

Senator NUNN. Under the NATO scenario it is thin.

Secretary RUMSFELD. Under the NATO scenario, the way the Defense Report and the Secretary of the Navy and the Chief of Naval Operations and the Chairman of the Joint Chiefs' testimony read, I believe, the United States would be capable of doing the job, but we would suffer heavy losses, particularly during the early period of a conflict. Now, Admiral Holloway characterized that as thin. That is certainly his right and privilege.

Admiral Holloway, am I not correct in my statement as to your testimony, and to what the chairman and the Chiefs and the Secretary of the Navy and the Secretary of Defense, and anyone who has discussed this have concluded after looking at exactly the same sets of facts—that is to say the NATO scenario? Is that correct?

Admiral HOLLOWAY. Yes, sir; it is. And when I say thin, I believe that the margin of superiority is enough for the Joint Chiefs of Staff to consider that it is an adequate margin of superiority.

And the Secretary is absolutely right in more carefully defining the illustrative scenario which, as I say, was the absolute extreme. I was talking in terms of all of the military resources of the Soviet Union

being used against the U.S. Navy, including nuclear weapons. Under those circumstances it becomes an extremely difficult situation for our Navy.

Senator NUNN. I think that is the most conflicting clarification I have ever heard, because I understood your first answer was the Soviet against the U.S. Navy.

Admiral HOLLOWAY. It was my error and I misled you.

FLEET READINESS PROBLEMS

Senator NUNN. Maybe we need to go into classified session on it.

At best, I would say in the NATO scenario you described the margin as being thin. We are talking about a supplemental appropriation here on a long-term basis coming in the middle of a budget session—and we have already passed the first concurrent resolution—that will not affect any of our capabilities until 1985. And on the other hand, we have a very large percentage of our ships, that are not in a readiness condition now, with a very thin margin. So I have to question the Navy's priorities, and the administration's priorities, about whether we ought to be having a crash program on something that will not affect our capabilities before 1985, and when our present capabilities are thin in terms of your description, and when we have a large part of our present fleet that is not in an upgraded state of readiness. So I would like for you to respond to that.

Senator RUMSFELD. Let me address the priorities, Senator.

First of all, this is not a crash program. In our testimony we have been very careful to caution the Congress, the country, and ourselves as to any idea that there should be a crash program. What we are proposing and what we are saying is, that we are concerned about the future capability of this country from a military standpoint. We have given dozens and dozens of reasons in public testimony and classified testimony. I feel it very deeply. I am concerned about the future, and I am convinced that if the trends continue that the circumstances could develop which would be adverse to this country.

Senator NUNN. I am, too, Mr. Secretary. But I am concerned about the present and the fleet not being in a state of readiness.

Secretary RUMSFELD. I am not recommending, nor is the President or the Chief of Naval Operations recommending, a crash program in this budget. We are saying that over a period of time this country is going to have to demonstrate the kind of steadiness of purpose that will get us from where we are to where we want to be.

The President's budget addressed the question of readiness. We made a great point of readiness before this committee and the House committee. We proposed substantial sums for the Army, the Navy, and the Air Force to improve readiness. This budget we proposed in January does, in fact, reduce the backlog of ships that are due for overhaul. It does in fact reduce the backlog to such items as spare parts, stocks, and other things; this will improve our readiness. You are correct; it does not propose within a single fiscal year that every backlog be eliminated, rather it proposes that a substantial portion of those backlogs be eliminated, and that the remainder be done sequentially. It proposes that there be a certain sum of funds that go for new shipbuilding for the future. It is not a budget that is black or

white. You have been concerned about this, I know. But, the budget does in fact address something that we both are concerned about, and that is the readiness problem. It should not be construed that simply because this amendment happens to involve ships or that this concerns a portion of the total U.S. Navy budget that the overall budget ignores readiness; you know it does not.

Senator NUNN. I know it does not. But I am questioning priorities and whether we are doing all we can to get our fleet in readiness. And every year for the past 5 years, I suppose, we have had some effort in the budget to upgrade readiness or prepare ships. My question is whether we have enough and whether with the ships we have we ought not to devote more resources to the present capability rather than long range.

Admiral HOLLOWAY. The number of ships that are presented as being not quite ready, being C-3 and C-4 status, are in that status deliberately because we have taken them out of the readiness fleets and put them into preventive maintenance. There is no question but that we need an increased emphasis on additional funding for overhauls and for supply equipment.

The CHAIRMAN. We can come back to that. Those are good questions and good answers. I want to take just a half a minute, though, before we leave this point in the record to say that just sitting here listening closely to the questions and answers, I don't see how it is possible to make a full comparison here just in a few questions and answers between the naval power of the Soviets and the United States. I think the questions were splendid and the answers good. But I think it would take a much more exhaustive line of questioning.

Senator NUNN. I agree with that, Mr. Chairman.

The CHAIRMAN. I am sure you do.

I just thought that I should give my impression; it is a good start and I would like to see it followed up and gone into more in executive session. The American people are greatly concerned, including this American. But I believe we have a tremendous naval power, and I have confidence in the Navy in what we have. I didn't agree with statements that in 2 or 3 years if we were called upon to defend the sealanes it is doubtful that we could do it, I don't think it did any good.

Can you be back at 2:30? We can finish this up this afternoon.

Secretary RUMSFELD. Mr. Chairman, I will certainly try to, and if I can't, I know Admiral Holloway and Secretary Middendorf and Secretary Clements can be here.

Senator CULVER. We also have questions on Minuteman, Mr. Chairman.

The CHAIRMAN. I believe that we can stay with these ships now if that is all right.

Senator CULVER. I am talking about this afternoon.

The CHAIRMAN. We can go into the Minuteman this afternoon.

Senator CULVER. Will the Secretary be available?

Secretary RUMSFELD. If I can't, Dr. Wade will be.

The CHAIRMAN. We can work it out.

Senator Culver.

Senator CULVER. Thank you, Mr. Chairman.

TENTATIVE 5-YEAR SHIPBUILDING PLAN

Mr. Secretary, in January the Administration submitted a tentative 5-year shipbuilding plan for 111 ships, costing \$35 billion. It seems to me that the crucial question to be asked here is, what has changed in the naval fleet assessment since January's testimony to justify this expansion rather than sustaining that level of construction that was originally proposed? In January the testimony by you and General Brown was that the Soviet naval presence had stabilized, and the Soviet surface fleet was expected to decrease slightly over the next decade. And, recently, Admiral Holloway has confirmed that the United States has built over twice as many major surface combatants over the last 15 years as the Russians.

And last, a new Library of Congress study for the Senate Budget Committee says that the current construction rate of the Soviet Union will sustain a Navy of only 435 ships instead of the 750.

In view of those facts, should we not have a sustaining level of construction rather than an expansion?

Secretary RUMSFELD. Senator, with respect to the first part of your question, as you will recall, when I came before the committee I repeated essentially that which I stated within the Pentagon and to the National Security Council and the President.

My statements were to the effect that, because of the importance of the naval balance, and because of the tremendous sums of money involved, and because of the very long leadtimes in a time of advancing technology, and because of the fact that we really could affect in any 1 year only a small portion of what the total Navy would look like 5, 10, or 15 years out, I was reluctant to come before the committee or the President or the Congress and say, this is the plan, having been Secretary of Defense for only a short period of time. Rather, I indicated to the President that I felt we should undertake a National Security Council study of the subject, that I was not completely satisfied with the 5-year plan, and that, therefore, we would go ahead and present it, but put the question mark at the end of it and state the circumstance and say that we would probably come back. What has changed is that a period of 6 months has passed. We have now had a preliminary opportunity within the National Security Council system to address those questions, and as we indicated in January in the budget, we are now back with the preliminary conclusions that we were able to reach at this time, particularly with respect to the issues that have come up in the Congress since that time.

Senator CULVER. You say the NSC study will not be completed for a period of time. And since ships do take many years to build, why can't we defer any expansion until you have a study, and give us a 5-year study?

Secretary RUMSFELD. We are fully satisfied with the 1977 budget proposal that we have made today. I would add that with respect to the remaining portion of the 5-year program, it is certainly likely, as would always be the case with a 5-year program, that as the budget evolves for fiscal year 1978 you would make adjustment in that 5-year program, as you have 1 additional year of experience and knowledge.

Senator CULVER. In view of your new proposal today, why did a White House spokesman on April 19 say that any decision to increase shipbuilding is "still several months away"?

Secretary RUMSFELD. Did you ever work in the White House?

Senator CULVER. No.

Secretary RUMSFELD. You are asking me why some White House spokesman says something like that? I don't have any idea.

Senator CULVER. And you met Saturday night after the Texas primary on this proposal too, is that right?

Secretary RUMSFELD. Oh, Senator Culver, absolutely not.

Senator CULVER. You weren't meeting Saturday night?

Secretary RUMSFELD. We have been meeting over a period of months on this study. We did not meet Saturday night after the Texas primary. That is absolutely false, it is not correct, and its implications are not correct.

We met with the President for several hours a week and a half or 2 weeks ago on the first part of the study on Saturday morning. We met, as I recall, from 10 a.m. until 12:20. There wasn't a soul in the room who had any foreknowledge of the Texas primary, and the implications that have been appearing in the paper to the contrary are just plain outrageous.

DEFICIENCIES IN NAVY READINESS

Senator CULVER. If you want to signal to the Soviet Union that we are beefing up our Navy, why not concentrate on this short-term readiness problem that Senator Nunn spoke of rather than long-term construction? I am concerned as well about the condition of the Navy, but I doubt that new construction in the form of this minimum is any kind of credible or meaningful cure.

Now, for example, these facts that have come out in recent months: one out of every seven Navy ships is overdue for maintenance and overhaul. Surveys by the Navy's Board of Inspection in recent years have found less than 10 percent of our ships fully combat ready. And last year an average of 46 percent of the Navy's planes were not operationally ready at any one time. What are some of the current figures in this area? What is being done to correct these kinds of deficiencies?

Secretary RUMSFELD. First, I will comment with respect to the earlier portion of your question, and then I would be happy to have Admiral Holloway or Secretary Middendorf comment.

The purpose of the shipbuilding program is not as a signal to the Soviet Union. The purpose of this amendment to the President's budget is to provide for the national security of the United States. It is not some sort of negotiating signal nor does it reflect a desire to affect their views in any way at all. It is simply a conclusion that is based on a good deal of study and work as to what this country needs for its national security needs.

Do you want to comment on the readiness question?

Secretary MIDDENDORF. In the President's budget there is \$1.4 billion for the overhaul of 105 active fleet ships. This would reduce the bow wave of deferred overhauls from 63 ships down to 31 ships, recognizing of course, that there is no inflation factor included in it. Accordingly, we expect to fall short of that overhaul goal by about 15.

I would say that the statement about the readiness of our fleet and the number of category three and four deficiencies would have been much more accurate, let's say, 2 years ago than a year and a half ago.

There has been substantial improvement in the material condition of our ships. Admiral Buckeley, President of the Board of Inspections and Survey—he is the toughest critic, I think everyone would admit on our ship's material condition—has now said that we have turned the corner. That is the first improvement, I would say, in about a decade. I have visited our ships personally, and I would say that I have seen an improvement in the material condition of our ships in the last 2 years.

Senator CULVER. Mr. Secretary, has there been any change in the projected Soviet naval capability since January?

Secretary RUMSFELD. The recommendations that the President is presenting to the Congress are based on the previous and ongoing work that is being done on this subject. They are not premised on events that have occurred with respect to the Soviet Union between the time he made the decision to begin the study in December of last year and as it continues today. That doesn't answer your question, but I think it answers the question, the real question.

In other words, there certainly is continuing intelligence.

Senator CULVER. But there is no change in terms—

Secretary RUMSFELD. This increment we propose isn't connected with a changed view as a result of additional intelligence information. I think that is what you asked.

FEW CONTRACTORS BIDDING ON NAVY SHIPS

Senator CULVER. I want to ask you a couple of questions about feasibility here. Since few contractors are bidding on current Navy ships, why do you assume that any increase in construction will attract builders and that they will be able to begin work quickly?

And second, have you studied the desirability of repealing legal restrictions so that U.S. ships could be built in foreign shipyards?

Secretary RUMSFELD. Secretary Middendorf.

Secretary MIDDENDORF. To take the second point, I think that building U.S. naval ships in foreign shipyards would not be in America's best interests.

I suspect that the follow-on question to that would be building ships in naval shipyards. Since 1966 we have not built ships in naval shipyards. However, Secretary Rumsfeld has asked us to review that question, and consider building at least 10 percent of our ships in naval shipyards. This construction might take the form of support ships or indeed some of the submarines.

As to the question of availability of other shipyards, up until last year it was virtually impossible for us to get additional shipyards to bid on our ships. We found this to be particularly true for nuclear ships as well as the FFG. However, we have had several indications recently of shipyards, that were formerly fully employed with rigs for oil drilling and supertankers, that are now considering submarines and other ship construction for the Navy.

HIGH COST OF NUCLEAR-POWERED SHIPS

Senator CULVER. On the nuclear issue, in view of the fact that we could build three nonnuclear ships for the price of two nuclear ones, in view of your testimony—and I quote you from previous testimony—nuclear-powered ships are more expensive both to acquire and operate

over their service lives, even at current and projected prices. I wonder first what you thought about possible repeal of title VIII, and second, when you requested the long-lead funds for this new nuclear carrier, what consideration did you give to a nonnuclear carrier less than the *Nimitz*-size carriers?

Since the life cycle cost of a *Nimitz* class carrier, including aircraft, is estimated to be \$7.5 billion, and how can we justify to the taxpayer that this type of carrier is the way to go?

Secretary RUMSFELD. I will comment first that the decision that the President made was to move forward by 1 year the long leadtime funds for the large deck carrier, and simultaneously to see that the research and development is done on the possibility of future alternatives to big carriers.

A major factor underlying the decision with respect to the carrier was the desire, after reviewing the various scenarios and circumstances and the overhaul and service life extension phasing, to see that the United States had a capability to maintain a certain number of large-deck carriers forward deployed during those outyears, while simultaneously investing in research and development to look at the question you are posing.

Senator CULVER. Are you going to have a thorough review? Is that going to be part of this report, the NSC study?

Secretary RUMSFELD. An additional \$200 million is being requested with respect to V/STOL capabilities, sensors and, weaponry for the outyears. Certainly this fiscal year 1977 money would not be spent prior to the time we need to complete this study.

Senator CULVER. It seems to me, Mr. Secretary, that the Navy has spent an awful lot of time and money studying carriers, and it usually is concluded that only large carriers are worthwhile.

How, then, can you justify \$200 million more for R. & D. for smaller carriers? How would this study be spent? How much for the smaller carriers? And why didn't you request funds earlier?

PROSPECTIVE V/STOL CARRIERS

Secretary RUMSFELD. Senator, I would be happy to have Admiral Holloway comment on how it would be spent. The answer as to why it wasn't requested earlier is because, as I indicated, the President, when he sent up the shipbuilding program, indicated that he would have the National Security Council study the very kind of thing in which you expressed an interest in, and he proposed an amendment to the shipbuilding budget that hopefully can enable us to make better judgments about the future, which is not easy. That is what we are trying to do. One of the things that resulted from the study, as it has progressed thus far, is the judgment that it is worth our effort and our time to see what kind of supplementary or complementary cost-effective capabilities prospective V/STOL carriers could offer in that period of time.

Do you want to talk about how it would be spent?

Admiral HOLLOWAY. Yes, sir. Navy studies, as the Secretary rightly states, Senator Culver, have in the past indicated that the best designs for carriers would be large platforms, because the function of

the carrier is to operate aircraft which can defeat the enemy. Aeronautical technology to date has concluded that conventional takeoff and landing aircraft, such as the F-14 and the F-18, are superior in air combat to VTOL aircraft. The aircraft, technology for vertical takeoff and landing in its most advanced form today is represented by the Marines' AV-8, the Harrier, which, although it can do something that the F-14 can't do, takeoff and land vertically, it can't accomplish the combat mission of which the F-14 or F-18 are capable. It was the opinion of the Navy staff, derived from recent studies conducted in the past year, that there were indications that, with suitable R. & D. effort and direction of resources to vertical takeoff and landing technology, we would be able in a period of about 10 years, more or less, to develop military aircraft that could take off and land vertically and would be competitive in the combat mission sense with the conventional takeoff and landing types.

This is a new view based on recent studies and the concept needs further refinement, although we are confident that the approach is practical. It takes time working with industry, to find out what and when the technology will deliver.

Therefore, the Navy commenced a study about 6 months ago, to look at a long-range program to transition carrier aviation to vertical takeoff and landing technology. If this program bears fruit, it would permit us to put highly capable combat aircraft aboard almost any size of carrier. The interim results of the study effort were presented to the Secretary just several months ago. That timing was a case of attempting to synchronize a new development with the budget cycle. Our conclusions on the V/STOL transition are still preliminary, but I felt that the Secretary of the Navy and the Secretary of Defense had to be informed of this new direction in our thinking.

Senator CULVER. Thank you, Mr. Chairman. I will have some questions on missiles.

The CHAIRMAN. Thank you. Senator Hart.

Senator HART. Mr. Secretary, it is a little late to ask questions, but I would like to make a couple of observations and invite you or the other gentlemen to comment.

DIFFERING VERSIONS OF NAVY

One of the most difficult problems in dealing with the Navy is to know which Navy you are talking about. Right now the chart shows essentially three navies, the original administration Navy, that is to say, the total several months ago; and the House Navy, which I think at least to some degree results from information disseminated from the military desires, and so on; and then there is the augmented or supplemented Administration's Navy. And I think to some degree the three navies are the result of what you might call several other navies.

Not overly personalizing it, I think the struggle historically between what you could call the Rickover Navy, and with deference to Senator Byrd, the Zumwalt Navy. And I think the House to some degree has tried to bridge those navies, which is why we got the bigger number from the House.

NEED FOR SINGLE NAVY

I guess what I am saying here is that what we need is a single Navy. I understand from your comments to Senator Culver and Senator Nunn earlier that you are keeping a foot in the door—you want both navies; you want a mix, as you say. But I don't see how we get the mix by pursuing, if you will, a Rickover Navy, essentially, for 10 or 15 years, and then all of a sudden, in 1976, saying, what we need is in addition, not instead of, but in addition to the Rickover Navy, we need a Zumwalt Navy. I think those of us who have no particular ax to grind—and I am certainly one of those, I have not been captured by either side or any of the above—want one Navy. And we want one Navy considering, when we are running 60 and 70 and 80 billions of dollars, that we may have to make a choice between quantity and quality. And it doesn't elevate the level of public dialog, if you will, to sell—not you but your predecessors—the Congress a particular kind of Navy, and then all of a sudden scare the American public to death by saying, the Russians are beating us with another kind of navy.

So that is an observation that I want to make. I am terribly confused, with the limitations I suggest, as to which Navy we really want and which Navy we can really afford.

Secretary RUMSFELD. Senator, I guess what I can say is this. You will have an opportunity, as I understand it from the chairman, to hear Admiral Rickover later this week. He has contributed a great deal to the national security. He has strong views. The budget of the Navy that is before the Congress, under our system, is a definite budget. It is clear, it is there, and it is understandable. It differs somewhat from the bill as passed by the House of Representatives, and that is a fact. But that is true in health legislation, and education legislation, and it is what happens in every subject. I think that the task that all of us are trying to do is to answer the question, what are the judgments?

One of the judgments which we should make is what will make the most sense 5 or 10 or 15 years from now. We believe that the analysis we have made indicate that the proposals that were put forward in the January budget, as supplemented by the provision today, are in fact based on the correct judgments. The fact that it is complicated—and most assuredly it is—and the fact that there are monumental uncertainties are just that, facts. I don't know that anyone alive is able to dispel that measure of uncertainty as to what will happen from the standpoint of technological events.

Senator HART. But what is disturbing is that I think by and large that the Congress is responding to a Pentagon-designed Navy which emphasized very expensive, very large, and highly technologically-oriented, major nuclear-powered, surface combatants. And then all of a sudden we find ourselves in 1976, as Senator Leahy says, with a lot of rhetoric—maybe it is not rhetoric—about the Russians are coming, the Russians are coming. What I find out from people in my State is, how could you dummies in Congress have let the Russians get ahead of us like this?

Well, frankly, not only because I haven't been here but a year, but because I don't think that it is Congress' fault that we are in

this position. I don't think any spokesman for any branch of the Government solves the problem by escalating rhetoric and frightening the American people.

Senator Leahy, in my judgment, performed a service, a service which all of us it seemed to me should have thought of 6 months ago, and that is, what kind of thing are we talking about. It is like two gun stores across the street from each other, and all of a sudden gun shop A gets hysterical because gun shop B has 3,000 weapons and it only has 300. And it tells its board of directors, we have got to produce more guns.

Well, nobody says anything about the fact that the gunshop B weapons were pistols and gunshop A had howitzers.

So I think that rather illustrates these statements about the fact that the Russians have now produced suddenly overnight a number of thousands of vessels that we somehow didn't know about years ago or choose to ignore. Why not say, we have this many major nuclear-powered surface combatants that we built because they thought we wanted them, and we made the conscious choice along the way that if we built those we couldn't have built the smaller conventional-powered vessels? Why not discuss it that way, instead of forcing all of us to go back and try to set the weapons force as to what actually happened.

In fact, in the light of the statements that have been made, we are not behind.

REASONS FOR COMPOSITION OF PRESENT NAVY

Secretary RUMSFELD. That is exactly the way we have been discussing it. We pointed out that there are a variety of reasons for the composition of the present Navy. One of the reasons is that during the Vietnam war, substantial sums were taken out of shipbuilding and put into current operations for war fighting in Southeast Asia. That is fact No. 1.

Fact No. 2, that bloc obsolescence occurs a certain number of years after a period of buildup. If you look at the period of World War II and the Korean war, you can see a shift that takes place.

And No. 3, if you ask those in the Navy who were in positions of responsibility during that period of time, they would say, yes, we wanted those ships, and we are glad we have them, and we are going to have them in the next 10 years, and in some cases we are going to find a way to extend their lives. So, what we are talking about is not whether we wanted those ships, but what kind of an adjustment can we add now to that mix that will assure that 5 or 10, or 15 years out we will have the right mix of ships. What has taken place essentially is that the Navy proposes certain numbers of ships and certain types of ships.

The fact that Congress reduced the size of the defense budget by some \$38 billion in the last 6 years resulted in a shipbuilding level that has been lower than proposed. If you look at it, it has been averaging, I believe, about 12 ships per year for the last 6 or 8 years. Is that correct?

Admiral HOLLOWAY. Yes.

The CHAIRMAN. Gentlemen, excuse me, I have to leave now. I am sorry. You can be in charge, Senator Hart.

I will appreciate your coming back this afternoon, and you other gentlemen too.

Secretary RUMSFELD. Thank you, Mr. Chairman.

Therefore, if a proposal for a mix of ships is presented, and a budget constraint is slapped over the budget total, the remainder of that mix might or might not remain balanced.

Furthermore, I believe I can recall saying before this committee at the outset, and practically every day thereafter, that the Russians used to be 5 feet, 3 inches and they are now about 5 feet 9 inches and have been growing, and you are not going to like it. I have not been saying the Russians are coming, I have not been saying that they are 10 feet tall.

Senator HART. [presiding] Somebody is saying they are already here and 8 feet tall and going on 10 feet.

Secretary RUMSFELD. That is not this individual. This individual is saying that our concern, as I said earlier, which is a deep one on my part, is the future. There is no doubt in my mind that if we fail to check those adverse trends, that in fact we will arrive at a point that would be unsatisfactory for this country. That is where we would be going, and that is what we are not going to accept.

Senator HART. I don't think any of us are quarreling with your statement. What we are quarreling with is for all reasonable individuals. And we don't particularly respond to what I think are misleading cases made to our constituents in order to get us to do something that we probably have been willing and trying to do all along anyway.

Secretary RUMSFELD. I don't think there have been misleading statements made.

Senator LEAHY. If you would yield just a moment, Senator, I will state this. I appreciate very much the compliment from you, Gary. And I might say, with just the two of us left here, that when I first took office and I was assigned to this committee, one of the newspapers owned by a publisher who publishes most of his newspapers in New Hampshire, but who has one in Vermont, ran an article saying, the country faces its greatest danger since Pearl Harbor by having me on the Armed Services Committee.

You can imagine what it must be with Senator Hart and I carrying the committee and the rest of the committee gone.

But on this point, I wrote that speech, and I worked a great deal of time on it. And I gave that speech on the floor, and I sent copies to the Defense Department immediately at the time. And I brought out—and the speech speaks for itself—and I don't think there is any way in there where I seemed to be taking a slap at any individual. What I was concerned with is the oversimplification of this. And I think a lot of it—I am concerned with the news media's handling of it.

But, I am also aware of where some of the articles in the news media come from. And I am concerned that the American people who want to make sure that we maintain a secure country really don't know what the answers are. And on top of that comes the inordinate amount of lobbying—Senator McClellan and I put in an amendment to the Defense appropriations last year requiring from the Department of

Defense a breakdown as to who's involved in lobbying, and some explanation of it. And we have gotten back some language along that line, which still doesn't answer the question.

But, I am concerned on not just this thing, but the stories can be simplistic, sometimes the sources can make them that way. The lobbying that comes out of it is unbelievable. It has nothing to do with shipbuilding, because as the Secretary knows, I am not a proponent of the B-1 bomber. There are two small elements of it made in my State, I guess they are the decals. Other elements are made in at least all but one or two States in this country. I look at the stuff that comes out of those two companies. In one case they sent some stuff to the news media with a factsheet that may be prepared by the Department of Defense still attached to it, which was probably a mistake on their part, because the newsman brought it over to me. And the result of that kind of lobbying can backfire. It just solidified my opposition, because of the way it was done. And I think it probably swung the rest of the Vermont delegation, for what that is worth.

I think the thing we have got to realize is that Americans want to make sure that our defenses are maintained. We all do, every one of us on this committee.

But I think that we realize, and we have a very serious thing, not only from the types of weapons as they have grown up, but from the economic conditions of this country itself, and we would like to have it very, very specific, and very, very consistent in what we come out from, and as removed as possible from the motions that go on in either political year, or the motions that are sometimes stirred up by Defense lobbyists, in this case Rockwell and General Electric, I think, who are very interested in getting their own way.

That was not a question. I will save any questions for this afternoon.

I would say that I appreciate very much, as I mentioned in the closed session earlier, the cooperation that I got from the Department of Defense in releasing the figures that I asked for and put together in the speech for the Senate floor.

I just wish those same figures had been broken down that specifically at the time the testimony was given.

Secretary RUMSFELD. Senator, we have the data, we have the information. We have tried to make it available, and still more is available, as I indicated to you this morning, in the form of this net assessment. You have expressed some feelings in your speech and in your statement here. Fair enough. I accept them. I know they are sincerely felt, and I agree with them. I think that you or I either one could have expressed them.

On the other hand, I think either you or I could have expressed something else, and that is the other side of the coin. It seems that as one looks at a complicated subject, one recognizes that no one of the elements of that subject is determinative; rather it is marrying of them that becomes important. Such a subject doesn't lend itself to oversimplification, but requires some analysis and some thought. Just as you are concerned when someone takes one of those elements and uses it in a way that is disadvantageous to what you believe, I can be—and anyone can be—equally concerned when someone takes one element of a complex subject and uses it in a way that is oversimplified and to the disadvantage of a judgment or conclusion that I have made.

I think it is equally wrong when it is done either way—not wrong, but not useful. It happens, and I think it is part of life. I think it is inevitable to some extent.

Senator LEAHY. I realized in that speech I quoted several of your conclusions.

Secretary RUMSFELD. I know you did. All I can say is that I hope that you and I and all of us can keep working toward the total picture, because I think it is in that approach that we find the answers we are looking for.

Senator LEAHY. I think Senator Hart brings out a very real point, that we see several different navies. It makes it awfully difficult as the authorizing committee in determining just which Navy we all want.

Secretary RUMSFELD. Pick the President's.

Senator LEAHY. The President's today or the President's a few months ago?

Secretary RUMSFELD. I knew it was a close call when I did what I did in January, but I felt the honest thing to do was to come up here and say that I don't believe that the kind of analysis and thought that has gone into that will suffice on my part. I felt in talking to the members they would much prefer us to do what we have done, namely, to state that we were proposing a tentative shipbuilding program, and that we would return at that point when we could provide some additional information and any proposed amendments.

Senator LEAHY. I will save my questions until this afternoon.

Senator HART. Thank you very much. We will stand in adjournment until 2:30 p.m.

[Whereupon, at 1:35 p.m., the committee recessed to reconvene at 2:30 p.m. the same day.]

MILITARY PROCUREMENT, FISCAL YEAR 1977

TUESDAY, MAY 4, 1976

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

NAVY SHIPBUILDING

The committee met, pursuant to notice, at 10:25 a.m., in room 212, Russell Senate Office Building, Hon. John C. Stennis (chairman) presiding.

Present: Senators Stennis, Symington, Jackson, McIntyre, Nunn, Culver, Hart, Leahy, Thurmond, Goldwater, Taft, and Bartlett.

Also present: T. Edward Braswell, Jr., chief counsel; W. Clark McFadden II, counsel; John T. Ticer, chief clerk; Phyllis A. Bacon, assistant chief clerk; Charles J. Conneely, Charles H. Cromwell, George H. Foster, Jr., John A. Goldsmith, Don Lynch, Robert Q. Old, Larry K. Smith, Francis J. Sullivan, and George F. Travers, professional staff members; Doris S. Cline and Christine E. Cowart, clerical assistants; Louise R. Hoppe and Roberta Ujakovich, research assistants; Susan Pitts, assistant to Senator McIntyre; Peter Hughes, assistant to Senator Byrd; Jeffery Record, assistant to Senator Nunn; Charles Stevenson, assistant to Senator Culver; Ed Miller, assistant to Senator Hart; Doug Racine, assistant to Senator Leahy; Will Ball, assistant to Senator Tower; Bill Lind, assistant to Senator Taft; and Fred Ruth, assistant to Senator Bartlett.

[CLOSED SESSION]

The CHAIRMAN. The Secretary will vouch for those people that are here from the Department of Defense and the Secretary's Office.

Mr. Braswell, I hold you responsible for all of the staff.

All right, Mr. Secretary, with a view to the 1-hour limitation, will you proceed, sir, and if we don't get through in an hour, we will consider it further.

Senator LEAHY. Do we have copies of Secretary Rumsfeld's statement?

Secretary RUMSFELD. I was told that they were delivered this morning to the members.

Mr. BRASWELL. They were delivered this morning at 9:30. The members have them.

The CHAIRMAN. Also, gentlemen, during the session today, we hope to take up this additional request for the Minuteman.

Mr. Secretary, we are glad to have you here. And you proceed in your own way.

(7141)

STATEMENT OF HON. DONALD H. RUMSFELD, SECRETARY OF DEFENSE; ACCOMPANIED BY J. WILLIAM MIDDENDORF II, SECRETARY OF THE NAVY, AND ADM. JAMES L. HOLLOWAY, U.S. CHIEF OF NAVAL OPERATIONS

Secretary RUMSFELD. Thank you.

With me are Secretary of the Navy William Middendorf, and the Chief of Naval Operations, Adm. James Holloway. With respect to the Minuteman subject, I have Dr. James Wade accompanying me.

I am pleased to be here to discuss the administration's views on our maritime strategy and capabilities and naval force requirements for the future.

I know you are giving careful consideration to these topics, which bear so directly on our defense capabilities and our country's contribution to world peace and stability during the remainder of the century.

You will recall that, in the Defense report and my testimony before the committee in January, I outlined the U.S. defense objectives and the adequacy of our forces—strategic, nuclear, and conventional—to carry out their tasks in support of those objectives. I conveyed two judgments: First, that U.S. existing military forces were capable at present of performing the missions assigned; and second, that what was important was the future adequacy of our force structure, and that I was convinced we must act now to arrest the adverse relative trends of the past 15 years, resulting from reductions on our part, and steady Soviet military expansion.

I described the weight of effort and momentum we have observed in Soviet military programs of all kinds and stressed that we needed to increase U.S. defense outlays in real terms over a period of years—as the President's budget recommended—to arrest those unfavorable trends.

I urged that the debate shift from "How much should be cut from the Defense budget?" to "Is the Defense budget appropriate to provide for our country's national security?"

The President's 1977 budget included a message that the total obligational authority as proposed could be too low in several respects and that he would come back to the Congress if this proved to be the case. The reasons were:

First, the President's budget proposed specific efforts to hold down growth in the area of compensation, support, other manpower costs, and areas that did not add directly to defense and deterrence, amounting to some \$2.8 billion to \$5.4 billion worth of reductions for which the Congress would have to pass supplementary legislation. Were the necessary legislation not to pass, the President indicated that he would have to ask for a supplemental, in that the budget was too austere to absorb that amount by cutting into defense and deterrent capabilities for the future.

Second, that some judgments regarding strategic nuclear programs might require review later in the year against the background of progress in SALT negotiations and thus might require a supplemental; and

Third, the fact that a review of U.S. requirements for naval forces was in process, and that adjustments to the 5-year shipbuilding forecast in the budget might be forthcoming.

Specific increases have since been proposed in the area of strategic nuclear forces, which we can discuss later.

With respect to the ship construction account, only one adjustment—repair and modernization of U.S.S. *Belknap* for \$221 million—has been requested to date, and that in the form of a supplemental to the fiscal year 1976–1977 budget.

You will recall that I stressed that the 5-year shipbuilding program outlined in the annual report could prove to be the right program, but that:

“The Department and the National Security Council will be reviewing the requirements and composition of the Navy in the 1980’s and 1990’s during the coming months. As a result of this review, appropriate recommendations will be made for consideration by the President and National Security Council.”

As congressional action on the fiscal year 1977 budget has progressed, various actions have been proposed in the Congress to alter the shipbuilding program in the President’s 5-year plan. A great deal of hard thinking has been devoted to the problem—on the part of the House Armed Services Committee, the Senate Armed Services Committee, the Congressional Budget Office, and others—and a thread that seems to run through most of these efforts is that both some changes and an increased level of effort are going to be required to maintain the Nation’s maritime security during the remainder of the century.

The work of the Defense Department and the National Security Council, while not complete, has progressed to the point that I can respond to a number of the issues which have been raised.

BACKGROUND

The costs involved in the shipbuilding area are substantial, and the issues complex. Much is at stake. Simple, neat answers on this subject would tend to gloss over the larger questions of defense, deterrence, and freedom of the seas.

Decisions made this year will not affect U.S. maritime capabilities of today, or even in the period immediately ahead. The capabilities we have now were determined many years ago. What is being considered in this period will affect U.S. maritime posture in the years 1985 to 2000.

Because the effective life of a Navy ship is 25 or 30 years, and because the leadtime for ship construction is long, nearly two-thirds of the active fleet we will have in the 1990’s has already been determined. It will be composed of ships we now own or which have already been authorized by the Congress as of fiscal year 1976. In fact, if we were to have absolutely no new ship construction beyond that authorized for fiscal year 1976 and prior, we would have a Navy of some 340 of our present ships in 1990—in a mix of ships quite like what we have today.

ACTIVE NAVY SHIPS -- NO NEW GENERAL PURPOSE SHIP CONSTRUCTION

	TODAY	FY 77	FY 78	FY 79	FY 80	FY 81
CARRIERS	13	13	13	13	13	13
SURFACE COMBATANTS	163	171	174	167	166	159
SUBMARINES	116	121	126	131	140	142
AMPHIBIOUS SHIPS	62	65	66	66	66	66
SUPPORT SHIPS	126	117	114	112	107	101
TOTAL	480	487	493	489	492	481

INCLUDES SERVICE LIFE EXTENSION PROGRAM FOR CARRIERS
AND CONTINUATION OF TRIDENT SUBMARINE CONSTRUCTION

Even more startling is the fact that in fiscal 1985, if no additional ships were built after fiscal 1977, we would have 433 of our present 480 ships; that is to say, 87 percent of the Navy in the year 1985 is determined as of right now, and we are able to effect something like 17 percent.

This is why I say it makes a great deal of difference how these decisions are made.

Put another way, the decisions we make on a 5-year shipbuilding program for fiscal year 1977 and beyond will affect only one-quarter or one-third of the fleet with which we will enter the 21st century. That makes this particular problem both difficult and important. Defining naval requirements 20 years in the future, given the changes in technology we have observed over the past 25 years, inherently involves uncertainties. Mistakes made today would take years to correct.

Because of these factors, the Department of Defense and the National Security Council have devoted substantial time to this problem. We considered it necessary to approach this complex subject by first assessing the anticipated politico-military environment in the world of the 1980's and 1990's, national requirements and objectives, and the challenges we may face in the maritime area. This suggests directions we must take to assure that our maritime capabilities are sufficient to meet the challenges and fulfill our needs during that period.

The study may take several months to complete. We will be carefully considering the role of carriers and other surface combatants in the light of potential developments in surveillance, targeting, and weaponry; the advantages of nuclear power for surface combatants; and the number and types of ships best suited to meet our maritime objectives in the 1980's and 1990's.

However, we have proceeded far enough to be able to present some views on the general approach and nature of the maritime challenge through the remainder of the century and the President's recommendations on a number of specific fiscal year 1977 issues now before this Congress.

POLITICO-MILITARY ENVIRONMENT IN 1980'S AND 1990'S

Because actions taken during this period will determine the shape of our maritime forces in the 1980's and 1990's, consideration should be given to the politico-military environment we might anticipate during that period.

[Deleted.]

U. S. NATIONAL SECURITY OBJECTIVES

- PROVIDE FOR PHYSICAL SECURITY AND POLITICAL INDEPENDENCE OF THE UNITED STATES
- DETER AGGRESSION, PREVENT COERCION, AND CONTRIBUTE A STABILIZING INFLUENCE IN THE WORLD
 - DETER USE OF NUCLEAR FORCES
 - DETER USE OF CONVENTIONAL FORCES
 - TERMINATE ANY CONFLICT, SHOULD DETERRENCE FAIL, ON ACCEPTABLE TERMS
- ASSURE THAT U.S. CAPABILITIES ARE SUFFICIENT IN THE LIGHT OF INCREASED SOVIET ACCESS TO BASES
- CONTRIBUTE TO THE FREEDOM OF WESTERN EUROPE AND JAPAN
- CONTRIBUTE TO POLITICAL-MILITARY STABILITY IN KEY AREAS OF THE WORLD

U.S. GOALS AND OBJECTIVES

Our basic national security objective is, of course, to provide for the physical security and political independence of the United States. To do this, we must be able to:

Deter the use, or threat of use, of nuclear forces against the United States and our deployed forces, our allies, or other nations important to our security;

Deter the use, or threat of use, of conventional forces against our forces, our allies, or other nations important to our security; and

Terminate any conflict, should deterrence fail, on terms advantageous to the United States and its allies.

While these objectives have remained fairly constant over recent years, the emergence of the Soviet Union into major power status means that we must have the capabilities which serve as a deterrent and counterweight to Soviet expansion and to their improving access to overseas bases and facilities.

Freedom of the seas is presently, as it has been for decades, an essential element of our national security policy. Bounded by two oceans on east and west, our Nation uses the seas both as barrier for defense and avenues of commerce and influence. One of our States, several territories, the Commonwealth of Puerto Rico, and the vast majority of our allies—41 of the 43 nations with whom we have security treaties or agreements—lie overseas. Since the United States does not have enemies on its borders, our major strategic interests—and more general political and economic interests—are dependent upon our access to and control of the seas.

BROAD U.S. FORCE REQUIREMENTS

An assessment of the politico-military environment in the world in the 1980's and 1990's and our national need suggest, however imperfectly, certain capabilities our forces will require during that period to meet our national objectives. It seems clear that the United States must maintain:

[Deleted.]

U.S. MARITIME REQUIREMENTS

Within the U.S. force requirements, three maritime force requirements are called for. It seems essential, in the maritime area, that:

[Deleted.]

Central to such maritime interests is freedom of the seas for the United States and for our allies, whose security is so closely linked to our own. Freedom of the seas requires a combined capability to control the air, surface, and subsurface of selected maritime areas. Sea control, a prerequisite to all maritime functions, does not imply simultaneous control over all 70 percent of the Earth's surface covered by international waters, but is exercised only in areas where required and when needed. Sea control is attained by neutralizing hostile air systems, surface ships and submarines which threaten United States or friendly forces in maritime operating areas.

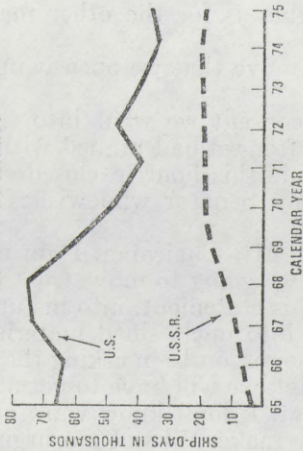
Sea control, like all aspects of maritime strength, involves the capabilities of all U.S. military services as well as our allies. The other services, as well as the Coast Guard and the Merchant Marine, must together be used efficiently to attain our maritime objectives. Their use in some instances may reduce the requirement for naval systems to carry out some tasks. For example, the use of long-range, land-based aircraft as surface surveillance units and as minelaying and antiship missile-launching platforms and employment of land-based tactical aircraft operating from forward bases, can enhance our sea control capabilities.

SOVIET MARITIME GOALS AND CAPABILITIES

U.S. maritime requirements must be viewed in relation to the maritime capabilities of the Soviet Union. Only the Soviet Union appears to pose a capability sufficient to interfere with U.S. national security objectives over the next 20 years.

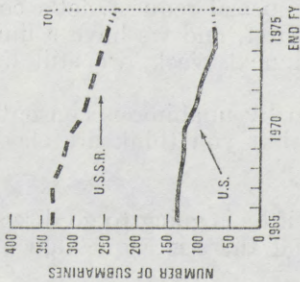
SOVIET MARITIME CHALLENGE

COMBATANT SHIP-DAYS ON DISTANT DEPLOYMENT

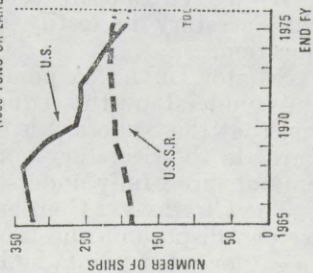


INCLUDES AIRCRAFT CARRIERS, MAJOR SURFACE COMBATANTS, GENERAL PURPOSE SUBMARINES, MINOR SURFACE COMBATANTS, AMPHIBIOUS SHIPS, AND MINE WARFARE SHIPS.

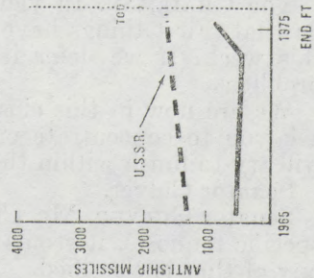
GENERAL PURPOSE SUBMARINE FORCE LEVELS (Nuclear and Diesel)



MAJOR SURFACE COMBATANTS (1000 TONS OR LARGER)



ANTI-SHIP MISSILES



The CHAIRMAN. Mr. Secretary, you testified about the shipbuilding program in the budget as originally submitted when you were before the Committee in your earlier appearance in January.

Secretary RUMSFELD. Yes, sir.

The CHAIRMAN. Later this committee heard from Secretary Middendorf and Admiral Holloway, Chief of Naval Operations. Sometime later we heard testimony on all the major phases of the shipbuilding program as then requested by your highly competent Admiral Doyle, in addition to Admiral Holloway.

Now, what we want to go into today primarily is this. On top of all this other you are asking for certain changes in your budget request, which is all right, we welcome that. You have told us that

you have been working on this. We won't go over that again. But we want you now to center on that. We have heard extensive testimony on the other part of it.

The House has passed on this matter, and we have before us their changes. They added around \$1 billion, and took out a considerable amount.

Secretary RUMSFELD. I can do that, Mr. Chairman, if you like.

The CHAIRMAN. In view of this special request, let's concentrate on that. First things have to come first, and we have a limited time this week. If we defer it all until next week, we still have these problems.

We are now in this closed session by unanimous consent. I would ask you to concentrate on things that you think are classified. We will try to finish within the hour.

Senator Culver.

Senator CULVER. Mr. Chairman, if he is going to go directly to the specific requests, it seems to me that there is a question of whether any of that is classified.

Secretary RUMSFELD. It is not, as I said earlier.

Senator CULVER. Then couldn't we open up the hearing?

The CHAIRMAN. Let's get on the end of our hour.

Senator CULVER. Do we need an hour?

The CHAIRMAN. I don't know, that is for the other members to decide.

Senator CULVER. I would like to move that we open it up, if there is nothing secret here.

The CHAIRMAN. By unanimous consent we went into this closed session for a minimum of 1 hour, after we had argued with it some.

We agreed that we would set aside this hour in closed session for the Secretary to testify and for any Senator who wishes to ask a question.

Senator LEAHY. A point of order, Mr. Chairman. I am not sure I fully understand the sequence. Are we going to move from the material that the Secretary is giving in his statement, into his unclassified part? Is the Secretary going to go into unclassified material now? I am not sure I fully understand, is the reason I am asking the question.

The CHAIRMAN. Gentlemen, I think we will have to get at it before we can dispose of questions like that. I don't know what he is going to say or what points he is going to make. What I am urging is that we get down to the very heart of this additional request and get the proof out here.

Secretary RUMSFELD. That can be done in open session, Mr. Chairman, and I will be happy to skip to page 20 and do that if that is the committee preference. My feeling was that the committee wanted the overall setting first.

The CHAIRMAN. I thought there were specific matters you wanted to mention that were classified. And I wanted you to have a chance to do it, and for the Senators to question you on those matters.

Senator McIntyre.

Senator MCINTYRE. Mr. Chairman, I think it is an excellent statement. It is helpful to me as I follow it. We don't have enough arms, legs, and so forth to keep everything under control. That lays the basis for some decisions he is going to come out with, and we will

go into open session on that. And that will satisfy Senator Culver, I think, when we come down to the requests. But to me this statement, Mr. Secretary, is helpful.

My point is that if you allow him to go ahead he will finish within the hour and then we will go into open session and Senator Culver and the rest will be happy.

The CHAIRMAN. The motion of Mr. Culver is to go into open session immediately.

Senator CULVER. Only if you are going to jump to the specific requests.

Senator McINTYRE. I respectfully request that you allow the Secretary to continue.

The CHAIRMAN. I think they are bound to be mixed up. If there are any that are classified he can't easily separate them. But I would be glad to have counsel on them.

Senator TAFT. I want to strongly enforce the chairman's position for this reason. It seems to me that we are going to lose continuity entirely unless we have this in closed session. I am sure the program as outlined by the Secretary isn't going to be classified material. But the questions that we are going to ask are going to be, or at least some of the ones I am going to ask, will be classified. I think we are going to lose continuity on the questioning and the presentation if you go in and out of closed sessions. So, I strongly urge that we continue in closed sessions.

Mr. Culver, the question of the validity of the requests—some of which I don't think I am going to find myself in agreement with—relate to classified information.

The CHAIRMAN. Gentlemen, just to make it clear, we are in this closed session by consent.

Senator CULVER. Is there anything that we have had so far that is classified in any way, as useful as the background is?

The CHAIRMAN. Gentlemen, we went into closed session for 1 hour by unanimous consent. And the general idea was to get at the things that were classified and ask questions.

Let's let the hour run, Senator Culver, and then we will see where we are.

Senator CULVER. Mr. Chairman, I think that background is extremely important. But I don't see any difference between this background and what you get into in the defense posture statement. And if it is classified it escapes me what is in it of that sensitive character.

The CHAIRMAN. Let's not cut him off since we have this hour.

Senator Symington.

Senator SYMINGTON. What worries me about the classification situation is this, and there are two aspects of it. I am a Democrat, but I must say that the things that Governor Reagan is saying in my opinion are untrue about the President's position in these matters, and therefore most disturbing, because regardless of the party, I think the people of this country are entitled to the truth. I think the attack on the President for not being adequate in several fields, including the field of the Navy, is unfortunate.

With the premise, however, I noticed on Monday an article by Mr. John Finney of the New York Times—incidentally, I have not discussed anything with Mr. John Finney for a good many months—in

which he said, in support of his theses, Mr. Rumsfeld has presented charts showing that between 1965 and 1975 the Soviet Union built 205 major combatant ships compared to 165 by the United States. And thanks to the efforts of one of the more hard-working and able Senators on this committee, there are statements in this which apparently the Chairman of the Joint Chiefs directly contradicts, to the point where the information shows that in the last 15 years the United States has built 122 major surface combatants of 3,000 tons or more, while the Soviet Union has built 57.

Now, this is being published, and it is going to be picked up all over this country, and of course all over the world those countries that are friendly to us, presuming that some are, and those countries that are not.

And also I have another article on Tuesday by Mr. Finney where he has some more information about the situation.

Everybody knows my very real respect for the Secretary of Defense. But in this article today, which I have just seen, according to Senate sources, Mr. Rumsfeld was insisting on testifying in closed session, contending that the long-range shipbuilding plans that the Defense Department has talked about are secret.

Now, in the interest of accuracy, and especially as this matter is becoming a national matter because of what Governor Reagan has been saying, I would respectfully urge, Mr. Chairman, that as much of this information as possible be made public, because a denial at this point that he is accurate is not enough in my opinion to nail the situation down. And with these figures that Senator Leahy has presented—I have never discussed it with Senator Leahy—I think this has reached a point now where you have got somebody talking about the facts. You have the Chairman of the Joint Chiefs' statement, and I think the more publicity we can give this, the better it would be for the country.

The CHAIRMAN. Let's use this time, gentlemen. We had trouble getting into this session, now let's take it for the hour and see where we are.

Senator CULVER. I withdraw my motion, Mr. Chairman. But it does not seem to me that there is anything in this session so far that is in any way classified, unless the Senator could point out where it is. And I couldn't agree more with Senator Symington, if there is anything we need at this point it is public enlightenment on this subject, the President has emphasized that point, and there is no way we are going to get it if we keep these proceedings open. And at the end of that hour I am going to make a motion.

The CHAIRMAN. I thank you for withdrawing the motion. And we took up about 15 minutes of that time. And we will extend it if necessary, I am sure.

All right, Mr. Secretary, you go ahead. And my idea is that we ought to take up any classified matters now. And if any Senator wants to bring up a point that may be classified, he will have a chance to do it, too.

Secretary RUMSFELD. Mr. Chairman, may I make a comment in response to Senator Symington? Before he came in, I indicated that there is nothing classified about these shipbuilding programs, and I would be happy to discuss that in open session. It was the early portions involving the assessment that we felt should be classified.

With respect to the articles in the New York Times, there is no difference between General Brown's view and my own, we are both using the same materials that come from the net assessment which is prepared within the Department. It looks at the United States and the Soviet capabilities and shipbuilding rates and projects them in many different ways. I have tried to consistently point out, in response to questions, yes, there are statistics, and yes, there are trends. The important thing is to recognize that no one set of statistics is determinative, no one tells the whole story, and no one can be sufficiently inclusive. From the outset of our testimony in January the Chairman of the Joint Chiefs of Staff, the Chief of Naval Operations, and I, have all, I believe, used almost exactly the same words to describe what that assessment is. The same facts and trends are in my statement today.

Senator LEAHY. Mr. Chairman?

The CHAIRMAN. Senator Leahy?

Senator LEAHY. We are discussing an article that was based on a speech that I made a couple of weeks ago on the Senate floor. And as a personal matter I should point out that that speech in no way set out to suggest a conflict between Mr. Rumsfeld and General Brown. Both the Secretary and General Brown were most cooperative with me in getting material figures to me. Most of the figures that have been classified were also in Jane's Fighting Ships, and they expressed the fact that they should have been unclassified, and they were. That speech in no way went out as a criticism or blast at either of those gentlemen. I sent copies of the speech over to the Defense Department, and I have given another copy to Secretary Rumsfeld today. They simply point out the problem that we have with the press, it states very clearly in that speech that the press oversimplified things. And I think the President has had unfair charges made against him on that basis.

The CHAIRMAN. Thank you very much.

Gentlemen, let me appeal to you. Let's try to get at this thing now, so that we can really mark this bill up. That is our mission.

Now, you say you have nothing here on the ships that are classified anymore. You have a request here for additional funds for Minuteman III. We can take that up, too.

I feel that some of that is classified. If we can take that up briefly and get it out on the table, then maybe we can go into open session. It looks like we can.

Mr. Secretary, are you prepared to go into your justifications for the Minuteman request? I don't know whether you have someone here that is close to that program or not.

There is a request, gentlemen, for the Minuteman III. And I thought we could take that up while the Secretary was here, if you are prepared.

Secretary RUMSFELD. Yes, sir.

I guess the situation is that I will dispense with the remainder of my testimony up to page 20 since you all have copies of it. I am prepared to testify from page 20 on, which addresses our specific shipbuilding recommendations.

I will be happy now to comment on the Minuteman, while we are still in closed session. Dr. Wade and I are both here and prepared to respond to questions on it.

The CHAIRMAN. It is just a matter of trying to move on these things, gentlemen. We are going to have the question of whether or not your statement is classified.

Secretary RUMSFELD. The statement is classified, Mr. Chairman, but we will go to work and unclassify it very rapidly. As I say, it was not completed until midnight last night.

The CHAIRMAN. Is it agreeable to have testimony now briefly on the Minuteman? And if we have to get in more detail about it, we can send for other witnesses.

Senator THURMOND. Mr. Chairman, I have some questions on the Minuteman. I am not sure whether they should be propounded in open session or not.

The CHAIRMAN. If we are going to ask questions maybe we can do it after the Secretary has spoken.

Senator CULVER. Are we going to wait until open session to take up the shipbuilding program?

The CHAIRMAN. If it is not agreeable to go into the Minuteman now, we can't do it. I think maybe we would take his testimony anyway on it.

Senator CULVER. Is the Minuteman program material classified?

Secretary RUMSFELD. We could do it either way.

Senator CULVER. I think we should do it in open session, and I so move.

Secretary RUMSFELD. I will do it any way the committee wants. It limits what I can say, but, it can be done that way.

The CHAIRMAN. You are satisfied to do it in open session?

Secretary RUMSFELD. I am prepared to testify in either open or closed session from this point on, Mr. Chairman.

The CHAIRMAN. I will put it this way. Do you expect that somewhere in this presentation, whether by you or not, there will be some classified material?

Secretary RUMSFELD. I think Dr. Wade can do it on an unclassified basis.

The CHAIRMAN. All right, that is fine. We will have that in open session.

The Chair understands now that the need for a closed session no longer exists. And we will go back to an open session.

Does any Senator have an inquiry that he wants to make in closed session about any of these recommendations?

The Chair hears none.

Senator THURMOND. Mr. Chairman, I am going to ask for these questions. And I would like for them, when I ask these questions, not to answer them if they feel their answers are secret.

The CHAIRMAN. Since we have gotten this far, if anything like that develops, suppose we take it over for an additional hearing. Because the most important thing is to try to get into this shipbuilding program.

Senator SYMINGTON. Mr. Chairman, the Secretary of Defense is on the National Security Council. And every American today is very interested in his testimony. In this room here we have about 50 people already. And if we go to an open session, I think we ought to go into a room where the public can come in. I don't think anybody knew that there was an open session, and there are a lot of people that

would like to hear this. I think a lot of these reporters that devote most of their time to military matters would like to hear what the Secretary has to say.

My big apprehension is that there seems to be a mixup from both an administrative, legislative, and political viewpoint, as to just what we have or haven't got. And I think the more the people understand that, the easier it is going to be to get through whatever is necessary for the Department of Defense. If you just take a look around here, it doesn't really make any difference whether it is open or closed from the standpoint of the seats available.

The CHAIRMAN. Thank you very much, Senator.

Open the doors, Mr. Braswell, and the session will be open until the committee rules otherwise.

Senator HART. I want to ask the Secretary, was the thrust of what he just said that the declassified part of testimony was from page 20 on?

Secretary RUMSFELD. Page 20 on, in the text you have. The page numbering in my reading text is different.

The CHAIRMAN. The matter is before the committee now, gentlemen.

Secretary RUMSFELD. From page 20 on is not classified.

Senator SYMINGTON. I would like to ask one more question, and that is, if this were not completed until midnight last night, why is it necessary to consider it and possibly pass on it today? Couldn't we have more time?

The CHAIRMAN. I have been insisting since April 1 that this hearing be held on this additional request. And this is the last week that we have, really, under the Senate rules.

Let's get as far as we can, and then we will come back to whatever is necessary, day or night. I will meet any of you here at 7 a.m.

All right, Mr. Secretary, you may proceed, please.

[Whereupon, at 11:05 a.m., the committee reconvened in open session.]

[The testimony for the reconvened open session begins on p. 7103.]

MILITARY PROCUREMENT, FISCAL YEAR 1977

TUESDAY, MAY 4, 1976

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

NAVY SHIPBUILDING

The committee met, pursuant to recess, at at 2:40 p.m. in room 212, Russell Senate Office Building, Hon. John C. Stennis (chairman) presiding.

Present: Senators Stennis, Symington, McIntyre, Harry F. Byrd, Jr., Nunn, Culver, Leahy, Thurmond, Taft, and Bartlett.

Also present: T. Edward Braswell, Jr., chief counsel; W. Clark McFadden II, counsel; John T. Ticer, chief clerk; Phyllis A. Bacon, assistant chief clerk; Charles J. Conneely, Charles H. Cromwell, George H. Foster, Jr., Edward B. Kenney, Don Lynch, Robert Q. Old, Larry K. Smith, Francis J. Sullivan, and George F. Travers, professional staff members; Doris S. Cline and Christine E. Cowart, clerical assistants; Louise R. Hoppe and Roberta Ujakovich, research assistants; Susan Pitts, assistant to Senator McIntyre; Peter Hughes, assistant to Senator Byrd; Jeffery Record, assistant to Senator Nunn; Charles Stevenson, assistant to Senator Culver; Doug Racine, assistant to Senator Leahy; Will Ball, assistant to Senator Tower; Bill Lind, assistant to Senator Taft; and Fred Ruth, assistant to Senator Bartlett.

The CHAIRMAN. The meeting will come to order. Gentlemen, the Chair proposes now to all members who haven't had a chance to ask questions. We were down to you this morning, Senator Leahy, and we will recognize you first.

Senator LEAHY. Mr. Chairman, Mr. Secretary, we discussed some of these things before. I suspect I may be following up with some written questions of a more specific nature on the questions gone into both by Senator Hart and Senator Culver regarding various plans that we have seen; namely, about the concern we have when you talk in your statement about your request of long-lead items on another major aircraft carrier.

We are in a position in this committee of whether to authorize it or not. We have to have a decision made really within the next 11 days.

Do you feel that ample consideration has been given, and given to the Congress on something that we are now just simply seeing, because isn't it a fact that a carrier itself is going to and does change the complexion of an overall fleet?

LONG LEAD FUNDS FOR CARRIER TO REPLACE MIDWAY

Secretary RUMSFELD. Senator, the only adjustment with respect to the carrier is the timing of the first year long lead time funds. The carrier was in the President's 5-year shipbuilding plan as presented in January. The distinction we find today in this budget amendment, is that it is being requested for fiscal year 1977 instead of fiscal year 1978.

What we have done—I believe I passed Senator Culver the classified chart that shows the flow of the carriers—is look at the outyears, at the anticipated overhaul and at the service life extension problem, and tried to determine how we would be able to assure that we have the necessary number of deployable carriers in the appropriate places in the world. The judgment was made to move this date up.

Senator LEAHY. Admiral Doyle had said when he talked about long lead items for another carrier, that they were going to be requested in the fiscal year 1978 budget, followed by authorization in fiscal year 1979, with delivery by 1985. He said this would replace the U.S.S. *Midway*, which would then be 40 years old. But does that mean now that *Midway* would be replaced 1 year earlier?

Secretary RUMSFELD. Admiral, can you answer this on a unclassified basis?

Admiral HOLLOWAY. Yes, sir, I think I can.

If we want to maintain a force level of 12 deployable carriers into the future, it would be necessary to build a replacement for *Midway*. If the new carrier were authorized in 1979, with long leadtime funds in 1978, it could be delivered in time to replace *Midway* at approximately its 40-year age point when *Midway* will have exhausted her service life. The principal reason for advancing the long lead funding for the new carrier is to save money, because the \$350 million would be for nuclear propulsion plant components. If we waited until 1978, the cost of those components would increase not only as a result of inflation but because nuclear vendors would be shutting down component production lines.

Therefore, if the decision is made that we want to maintain a 12 carrier force level, then we must plan to build another carrier. The prudent and efficient way to proceed, is to buy those long lead time items in fiscal year 1977, in order to avoid costs of restarting nuclear component production.

Secretary RUMSFELD. That is quite correct. It does not relate as much to the year it comes in as it does to the kinds of things that Admiral Rickover will be discussing when he comes before the committee in terms of the shipbuilding capability that exists and the desire to utilize it.

Senator LEAHY. So in a way, though, it makes inoperable Vice Admiral Doyle's original testimony to that extent, only that I said that we are concerned only with the question of the nuclear plans. I mean, it doesn't in any way affect the basic conclusion that you have.

Secretary RUMSFELD. No.

Senator LEAHY. Have we fully gone into the debate on minicarriers as opposed to the large carriers? I understand there are Navy estimates that say that we could buy nine minicarriers with the same life cycle costs as two *Nimitz* class carriers, and we are speaking

about \$1.3 billion life cycle on minicarriers versus \$5.8 billion on the *Nimitz*. These nine minicarriers would carry many more aircraft at sea than two *Nimitz* class carriers. In addition, there would be nine different parts of the ocean covered rather than two.

Is that a matter that is even still open to consideration, or has that question been laid to rest by the Department of Defense?

NAVY STUDY OF COST EFFECTIVENESS OF LARGE OR SMALLER CARRIERS

Admiral HOLLOWAY. Senator, I am not familiar with the study that related two *Nimitz*-size carriers to nine smaller carriers. The study that the Navy conducted, compared equal cost forces of six *Nimitz* class carriers with nine carriers of a new smaller design. The advantages of nine smaller carriers would be the ability to more widely distribute the inventory of carrier aircraft and get the sea-based air power more places at the same time. However, with the nine small carrier force, there was some reduction in overall air power capability, compared to the force of six *Nimitz*-sized ships. However, the results of the study are only valid for the total forces of six or nine carriers. The costs of the smaller nuclear-powered carrier force wouldn't offset the cost of the *Nimitz* force alternative until a number of carriers were built. This is because the *Nimitz* would be a follow-on design, and the small nuclear carriers would be a new design with new startups costs which would have to be amortized through subsequent production before becoming competitive with the *Nimitz*.

So unless one were prepared to go into a massive program of either six *Nimitz* class carriers or nine somewhat smaller—and by smaller we are talking about a carrier in the 50,000- to 60,000-ton displacement range—the significant cost and effectiveness advantages of a smaller carrier force could not be realized. It didn't appear to be feasible to achieve a long-term commitment to a nine-carrier building program stretching over more than \$2 billion.

Senator LEAHY. Keeping in mind the advent of the cruise missile and what we feel will be the use of the cruise missile both in the next 5 to 10 years, both in our view and what we have estimated the Soviets will have, what do we see 10 years from now? How many carriers should the Navy have 10 years from now? Or has any in depth discussion of that been made in light of the advent of the cruise missile and the changes that may bring about?

Secretary RUMSFELD. Those are the kinds of questions that are being addressed in the National Security Council study. The conclusions we have been able to provide to date relative to specific issues are the conclusions that we have thus far. The study is not complete, and I would not want to prejudge what its conclusions would be.

Senator LEAHY. When will the study be complete?

Secretary RUMSFELD. It looks as though it will be completed in time to play a role, in the preparation of the fiscal 1978 budget.

Senator LEAHY. What does that mean in time? When will that study be completed? When will the National Security Council, aside from any budget consideration or anything else, have their study on carriers?

Secretary RUMSFELD. At some point later this year, prior to the time the budget is being prepared.

Senator LEAHY. Like October?

Secretary RUMSFELD. I would think so.

Senator LEAHY. Earlier?

Secretary RUMSFELD. I would think probably the October-November period.

You see, you are asking me to say at what point the other elements of the National Security Council will complete their work. Certainly the target is in that time frame.

Senator LEAHY. I understand it, but they must have some kind of planning time.

Secretary RUMSFELD. That's it.

Senator LEAHY. Last Thursday Secretary Clements told us that he had been informed that Newport News, as I understand it, would not continue their present work on the CVN-70 product, or attempt to negotiate pricing and other terms until and unless the Navy takes positive steps to act on Newport News requests for equitable adjustments.

We get this major issue of shipbuilding claims, and we get the Newport News shipyard saying they might not build any more. Should we be requesting this long-lead funding of an additional carrier, and are we going to have a place to build it if we get it?

Secretary RUMSFELD. Do you want to respond? I've not been involved in the shipbuilding claims issue.

IMPROVED BUSINESS RELATIONSHIP BETWEEN NAVY AND SHIPBUILDER

Admiral HOLLOWAY. I think the Secretary of Defense and the Deputy Secretary of Defense have accelerated our efforts to improve the business relationship that now exists between the Navy and the shipbuilders. One reason we have been stimulated in this effort is because we want to be able to produce the ships that we foresee the need for in the future. It is my expectation that the difficulties that have existed between Newport News and the Navy will be cleared up, CVN-70 will be completed, and that yard will be anxious to take Navy work in the future.

Senator LEAHY. But those claims have not yet been settled.

Admiral HOLLOWAY. No, sir, they have not.

Senator LEAHY. I know when I tried to pin down Secretary Clements the other day in this committee, an awful lot was still left very, very much up in the air.

Secretary RUMSFELD. It's a matter that is under negotiation.

NEGOTIATIONS TO SETTLE SHIPBUILDERS CLAIMS

Senator LEAHY. I understand that. Apparently the negotiations can either last several years or they can be wrapped up in 90 days, depending upon whether we give the OK to an approval of \$1.5 billion or \$1.8 billion, depending upon which way it works.

Mr. MIDDENDORF. I don't think there's any question about \$1.8 billion. The claims are about \$1.8 billion, but I would suggest that, as I think you know as well as anyone in this room, two-thirds to

three-quarters of those claims are for delay and disruption and the resultant ripple effect. I think anyone working with shipbuilders knows that we have settled claims at 48 cents on the dollar on an average, and usually those have more substance than some of these so-called ripple effects have.

Senator LEAHY. If I was a shipbuilder, I'd like to get an OK on the ripple effect. I think that would be probably the biggest golden egg they could ever get their hands on.

Mr. MIDDENDORF. And I think that I'd be the first to suggest that we cannot give them that.

Senator LEAHY. I would hope not. We would never really get too much of a feeling as to what the figure is.

Secretary RUMSFELD. Senator, there is also one other option you did not mention. The approval could be given and the negotiations could proceed and fail.

Senator LEAHY. I understand.

Secretary RUMSFELD. Because we would not be willing to agree to something that was proposed.

Senator LEAHY. You know, last year this committee went through the difficulties that were involved in the shipbuilding request. It was not part of the long-range shipbuilding program. The committee's report says: "The lack of approved programs by the Defense Department has prevented any valid assessment of total future requirements or programs," and then this committee went on to request that it properly be presented at the time of the fiscal year 1977 budget long-range force levels.

FIRM PROGRAM FOR FUTURE SHIPBUILDING

In spite of that language and requirement, the Department has yet to decide on yet really a firm program for future shipbuilding. Again we have these several different programs. We had the one presented in January. Now we have the basis of a new program. Are we at the final plan now? Is the plan that we have here today at least a final plan for this year?

I realize that we have gone over different aspects of this several times today, and I have a little bit of trouble handling it.

Secretary RUMSFELD. The answer is, yes. The first thing that has to be said about the Federal Government's budget process is that a budget is prepared during one calendar year and announced in January of the next calendar year. The fiscal year that now begins on October 1, but under the congressional-executive arrangements, procedures, and laws, the President may at any time request the Congress to make an adjustment in that budget.

There are things that occur in the life of the budget that lead people to decide it is in everyone's interest to make adjustments. If you are asking, does this represent the President's best judgment as to what the fiscal 1977 shipbuilding program should be? The answer is certainly yes. That is not to say that if we had an accident like the U.S.S. *Belknap* collision tomorrow, we might not come in and say that the ship needs to be repaired.

I would doubt that any conclusions that would flow from the National Security Council study would result in further adjustments

to fiscal 1977. I think that any conclusions that may come out of that study would result in decisions which would then be cranked into the normal budget process for fiscal 1978.

The 5-year budget plan, as you indicated, and as I indicated in January, is our best estimate at the time we announce it. It is reviewed and we can come out with a 5-year plan that is close to the original, but the second effort reflects any additional knowledge or judgments we made during that review period. It also reflects what Congress had done that first year.

NAVY PROBLEMS MAINTAINING BATTLE READINESS

Senator LEAHY. We have had, and I have heard concerns expressed, that the Navy has had some real problems in maintenance in battle-readiness; I believe a number of those problems surfaced during the *Mayaguez* affair, and fortunately there we were doing it in a situation where we really did not have to face any significant force in return.

Is the Department of Defense making studies regarding the overall readiness?

Mr. Secretary, I think you mentioned something along that line this morning, about the overall readiness of the Navy and whether the ability of the Navy to maintain its ships, to have the money and the parts to maintain the ships, are being sidetracked by the costs that go into continuing building.

Mr. MIDDENDORF. You are right. This morning I did address that question, and I think the best indicator of the condition of the ships is the numbers that are in category III and IV. That's where primary mission areas are affected—caused by an inoperable pump or a forced-draft blower, or a boiler or what have you. I think the best indication is that we've had an improvement in the number of casualty reports. Admiral Buckeley has told us, and will tell you, that the material condition of the Navy is on the way back to recovery. It is not a perfect science and we are not proud of it yet, but we are on the way back and certainly a lot of attention is being given to it.

Senator LEAHY. Shouldn't it be a matter, really, of some major priority? If we are going to compare the numbers of our ships versus the Soviets, we ought to add that further question of how many of our ships are in a substantial state of readiness.

Secretary RUMSFELD. It certainly is a matter of priority. I feel if one reviewed the presentation by the three services in January and February, it is clear, not just with respect to the Navy, but to the Army and Air Force as well, that we are all concerned about readiness. The budget reflects that concern.

Senator LEAHY. I realize I have used my time, Mr. Chairman. I have only one last question and that can be answered yes or no.

EFFECT OF TACTICAL CRUISE MISSILES ON FUTURE NAVAL WARFARE

Have there been any specific studies of the effect of tactical cruise missiles on future naval warfare, or are there any underway?

Admiral HOLLOWAY. Yes, sir, there are. We must remember that tactical cruise missiles have been in the Soviet inventory for about 10 years, and they have developed a large number of them. The Navy, since the mid-1960's, has been very much concerned about the

threat of these missiles to our surface fleet, and we have had a number of studies done in the Office of Chief of Naval Operations. We have established an office, the Antiship Missile Defense Project Office, to set up programs to develop tactics and equipment to counter the effectiveness of these missiles. The studies have been done. It is now a question of the hardware getting into the fleet.

Senator LEAHY. Do those studies also reflect whether we have to change the basic concepts of what type of naval ships we should use?

Admiral HOLLOWAY. No, sir. They do indicate, as a matter of fact, that although the carrier is vulnerable to cruise missiles, it is the least vulnerable of all surface ships. The most vulnerable are troop ships, oilers, tankers, and supply ships. The reason the carrier is required in the future is that it has attack aircraft to strike the bases from which these missiles are launched, and fighters to shoot down the missile-carrying bombers 500 miles away from their targets, and even shoot down the cruise missiles in flight.

One cruise missile hit on a frigate-size ship could sink it, and the current fleet frigate has only its close-in weapon defense against the missile. Incidentally, this deficiency will be corrected in the FFG-7 class frigate which will have surface-to-air missiles designed for area defense [deleted]. The carrier provides protection for all surface ships in the general area, not only itself. That is a principal reason why we think the carrier still has a major role in the Navy of the future.

Senator LEAHY. Thank you.

The CHAIRMAN. All right, thank you, Senator.

Senator Byrd, that brings us to you, if you are ready, please, sir.

Senator BYRD. Thank you, Mr. Chairman.

And I heard a good bit of criticism about the cost of repairing the *Belknap*. I notice here that the figure was put at \$213 million. Is that the figure?

Mr. MIDDENDORF. Yes, sir.

COST OF REPAIRING AND MODERIZING BELKNAP

Secretary RUMSFELD. That is not only for repair. The \$213 million figure includes repair and modernization; is that not correct?

Mr. MIDDENDORF. Yes, sir.

Secretary RUMSFELD. In other words, it is not simply to return the U.S.S. *Belknap* to its previous condition. Rather, it is to return it to its previous condition as well as upgrade its capabilities. In a normal modernization cycle we would normally have upgraded the *Belknap* at this time had it not been damaged. Because it has been damaged, the most cost-effective approach is to repair and modernize it simultaneously.

Senator BYRD. When did the *Belknap* become a part of the fleet? What did it cost?

Secretary RUMSFELD. We can find those for you.

Senator BYRD. Would you comment on that figure of \$213 million? Part of that is for modernization, you say, but a part of it also is for repairs.

Secretary RUMSFELD. That is correct.

Do you want to comment?

Admiral HOLLOWAY. Yes, sir.

The *Belknap* restoration would involve repair of certain basic components that go with any ship. The modernization would be the installation of an upgraded weapons system, and improved command and control facilities.

I can provide for the record the breakdown in costs between the cost of repairs to the ship and the cost of modernization. There is some overlap in these categories where repairs are avoided when damaged, installed equipment is removed and replaced with the new equipment.

Senator BYRD. That would be fine if you could provide the breakdown for the record.

[The DOD information follows:]

Approximately \$112 million of the \$213 million requested for the *Belknap* is budgeted for repairs. The remaining \$101 million will be used to modernize the ship.

The *Belknap* was authorized in FY 1961 and commissioned on 7 November 1964. The cost of construction was about \$78 million.

Secretary RUMSFELD. Senator, I have been informed that the *Belknap* was commissioned November 1964, and it was damaged November of 1975.

Senator BYRD. Now, I have before me the Secretary's statement which is marked secret. I don't know which part of this is unclassified.

Secretary RUMSFELD. From page 20 on is not classified.

Senator BYRD. Fine.

As I understand it, then, you recommend against the modernization of the *Long Beach*. You recommend that the modernization of the *Long Beach* be deferred.

Secretary RUMSFELD. That is correct.

Senator BYRD. On the fourth *Nimitz*-class carrier you are recommending advanced funding in the amount of \$350 million. The first *Nimitz* carrier, as I recall, cost \$660 million, and the two follow-ons were at \$990 million. I am using round figures, and taking it from memory, but I think that is approximately right. What do you estimate this fourth *Nimitz*-class carrier would cost?

COST OF FOURTH NIMITZ-CLASS CARRIER

Admiral HOLLOWAY. Senator, I believe that it will cost over \$2 billion, although the design will be about 98 percent similar to the previous three *Nimitz*-class carriers, so that the increase in cost is virtually pure inflation. There will be some changes required by environmental laws for onboard stowage tanks to avoid pumping sewage directly over the side. But basically it will be the same ship as the *Nimitz*. The cost will be above \$2 billion.

Senator BYRD. Now, on page 20, of your statement it says here, "Specifically the President recommends adhering to the original budget submission which requests deleting the lead DDG-47 in fiscal year 1977, and the lead CSGN in fiscal year 1978. Because the utility of the FFG-7 is evident, authorization of 12 of this type of ship is requested in fiscal year 1977."

My question is, did the original budget request seek 12, or did it seek 8?

Secretary RUMSFELD. The answer is that the President's original budget request was for eight. There was a good deal of discussion

within the executive branch as to whether it should be 12 or 8 for a variety of reasons the request came forward as 8. The National Security Council study then concluded that 12 is what should be requested, and the President is requesting 12. Thus, there has been an increase of four.

Senator BYRD. I guess what caused the confusion in my mind was, "Specifically the President recommends adhering to the original budget request," which I understood to be 8, and which you just indicated a moment ago was originally 8, but this request is now for 12.

Secretary RUMSFELD. Well, the phrase, "adhering to the original budget request" refers not to the frigates, but to the DDG-47 and the strike cruiser. We don't have that chart now, do we?

Senator BYRD. It does not refer to the frigates. All right, thank you.

I will have some additional questions I would like to submit for the record. I notice the Senate is now voting, so I will yield back my time to the Chair.

The CHAIRMAN. Gentlemen, we have to go vote So, if you will excuse us, we will be back as soon as we can.

[Whereupon, at 3:13 p.m., a brief recess was taken.]

(The committee reconvened at 3:32 p.m.)

The CHAIRMAN. All right, gentlemen, the committee will please come to order.

Gentlemen, I appreciate your staying here. I hope that every member of the committee will have every chance to ask every question he can or he wishes to and we'll finish up the hearings. In the morning we hear Admiral Rickover, and after we finish up with him we have got to come down to the point of writing up this bill, and that takes figures.

Senator McINTYRE. Mr. Chairman? You say Admiral Rickover is coming over here?

The CHAIRMAN. Yes. We have had a special request that he be heard.

Senator McINTYRE. I am a layman in every respect, but I don't consider that Admiral Rickover is an expert on ships, on strategic warfare. He is supposed to be a nuclear propulsion man with a great recognition there.

I would say if he comes over here and testifies tomorrow, I'd like to have someone from the Navy, preferably the CNO, come back and comment on his testimony.

How am I going to make up my mind which way to go?

The CHAIRMAN. Well, let's use that old expression, for the time being, we'll cross that bridge when we get to it.

But I think under all the circumstances, we had better have him to address this nuclear question here. So we'll have him here and see what he says, and then we'll move into your point.

Now, Mr. Secretary—and I want the admiral to answer, too, what are the strong points, and the weak ones, too, if you can think of any, on this idea of the mix?

Give us now in a nutshell a summary here of why you bought the idea of this mix.

Secretary RUMSFELD. Mr. Chairman, I would be glad to. First, I have neglected to mention that Admiral Holloway is here in his capacity as acting chairman of the Joint Chiefs. Normally, General Brown would accompany me, and the general is out of the country.

The CHAIRMAN. Well, Admiral, we are always happy to have you. Secretary RUMSFELD. First, there is no question in my mind but that there are advantages to having nuclear powered vessels. Nuclear powered ships have the ability to travel great distances and still be prepared to successfully engage in combat operations to a greater extent than would conventionally powered ships. I don't think anyone argues that.

I don't think Admiral Rickover suggests that every ship in the Navy should be nuclear. I think everyone agrees that there should be some that are and some that are not.

What we have developed here is a result of our assessment of the circumstances in the world in the period 1980-1990; what requirements the Government will have of the Navy; and what naval capabilities are needed to fulfill those requirements.

My judgment is, for example, that it is clear that the frigate is a less capable ship than a ship that costs three or four times as much, is larger, can do many other things, and has nuclear power. That doesn't mean the frigate is bad or an incapable ship. It means that it has certain capabilities that can be quantified at a certain cost. So, too, does a larger nuclear ship have other capabilities that can be quantified and are reflected in the cost.

My view is that the answer to this question of what that mix ought to be, is not going to be found by debating the theoretical advantages or disadvantages of more expensive ships, but instead, looking at the job you envision for them during that period, and the kind of ships you need to do that job. The primary job is sea control and you also require the ability to project power onto the land in the event it is needed. We are talking about the ability of this Nation, the United States of America, to in fact maintain the freedom of the seas during that period. Adequate control takes a blend of ships with different capabilities. Without question, that blend is the one proposed by the President.

Admiral?

MIX OF SHIPS TO ACHIEVE BALANCE

The CHAIRMAN. Admiral, what do you say to this matter, now?

Admiral HOLLOWAY. Yes, sir, and I believe we have probably heard too much talk recently about the high-low mix, the implication being that it is a new thought. I would simply offer to the serious students of naval history that there has always been a mix of ships in navies. When there have been battleships, there have been destroyers, and I think the judgments we still have to make is what is the proper mix to achieve the balance we need.

I believe there are two kinds of balance, there must be balances among the types of ships: carriers, surface combatants, amphibious ships, submarines and support ships; and then there must be balance between those multipurpose, very capable ships which are very expensive, and the single-purpose ships which are less expensive, somewhat less capable, but very attractive because they can be procured in greater numbers.

Nuclear ships, as the Secretary has pointed out, do have an additional characteristic, which is the ability to steam at high speed for unlimited distances without refueling. That isn't always the overriding military consideration. For example, operating in the Medi-

terranean, it is less important than for the forces operating in the Indian Ocean, where we have no refueling bases, to fall back to if our oilers are sunk by the enemy.

Let me back up a bit and say again, to reinforce the Secretary's statement, that all ships in the Navy cannot be nuclear powered. Within our present technological bounds, we have found that capable surface warships below the 8,000 to 10,000 tons category cannot feasibly be nuclear propelled. All submarines should be nuclear powered because it provides a unique system when compared to the conventional submarine. Furthermore, if we made the decision today that all ships in the future would be nuclear powered, we still wouldn't have an all-nuclear Navy until some time well past 2015, because we are still building conventional ships today which will stay in the fleet over their 30 years or more of active life. So the idea that we can quickly transform the Navy into an all-nuclear force in the immediate future is not realistic.

To answer the hard part of the question, it is my opinion that nuclear power should be applied to the Navy as follows: to all submarines, as I have explained before; and to enough carriers and cruisers to constitute a significant number of all-nuclear task groups. These all-nuclear task groups need not be particularly large but would have the capability of responding at high speed, especially in situations short of general war, to crisis areas on a worldwide basis. The question is, what would be a significant segment of the fleet? I believe that the lower bound is what we have today, four carriers, and I think we ought to have as a minimum enough nuclear-powered cruisers to form powerful task forces in conjunction with those four carriers.

I would say that that is the lower bound. The upper bound probably runs between six and eight of these nuclear task forces, depending upon the requirements of the national military strategy.

The CHAIRMAN. Right on that point, does your recommendation mean here that anything below this carrier plus this cruiser, and so forth, would be nonnuclear in your recommendation?

Admiral HOLLOWAY. Yes, sir.

The CHAIRMAN. I just wanted to be sure.

If I may continue, one more question.

On this question about the Aegis being on a nonnuclear ship, the President's position is that he wants to mix that.

Now, what type of ship would the conventional power be that carries the Aegis?

Admiral HOLLOWAY. It would be the DDG-47, which is a *Spruance* destroyer hull with the Aegis topside. The reason that we don't need all of our Aegis ships to be nuclear powered is suggested by my previous line of reasoning; only the cruisers that go with nuclear carriers really need be nuclear powered. Therefore, the Aegis ships which operate with nonnuclear forces should be nonnuclear powered.

The CHAIRMAN. You mentioned the DD-963, the additional ones are in the House bill. You rejected those in the testimony this morning, as I understood it. Is that correct?

Admiral HOLLOWAY. Yes, sir, I did.

The CHAIRMAN. The fact that they might be made by Litton, and that they might have a better chance to get them, is certainly no influence to me to try to get you to keep them in there. I just want the record to be clear.

I just wanted to make sure what your recommendation is. It's to keep those additional four out.

Admiral HOLLOWAY. Yes, sir, and if we build more DD-963 destroyers, they ought to be equipped with Aegis. That is my point.

The CHAIRMAN. All right.

I will yield to you. You haven't asked any questions today.

Senator CULVER. I just wanted to ask the admiral something on that one point, Mr. Chairman.

TITLE VIII MILITARY AUTHORIZATION ACT

Admiral Holloway, you are familiar with title VIII in the Military Authorization Act—the nuclear-powered Navy section. I was interested in your response to the chairman about the kind of mix you feel is most desirable in our fleet, and I wondered, in view of that congressional mandate which is so strong in terms of its directive that new construction of major combatant vessels of the strike force of the U.S. Navy authorized subsequent to today shall be nuclear powered except as provided in this title, whether or not you feel that that is too sweeping a requirement and title VIII should be repealed to give you the kind of flexibility which you need to get the right mix in this area.

Admiral HOLLOWAY. Senator Culver, I think there is an additional sentence in there that states to the effect, unless the President shall consider it not in the best national interests, that those ships be nuclear powered.

Senator CULVER. But the key thing is the burden of this statute. This congressional mandate places the burden on the President of the United States to come forward and overcome the presumption that it should all be nuclear, and has to specify in each particular instance that the national interest is not served by that.

I am just saying it seems to me in view of what you have said, it raises questions in my mind whether or not a repeal of that section would not be in the interests of having the best mix in the national interest and not have the President required to go through that.

Admiral HOLLOWAY. I would only make the observation that our experience thus far has been, that the necessary flexibility has been provided by that sentence in title VIII. Other than that, I would rather not make a recommendation as to whether the Congress should keep it or repeal it.

The CHAIRMAN. All right.

I wanted to ask Secretary Middendorf what he has to say about this mix idea. You know, I asked the Secretary's position here about the need for a mix. You have heard their testimony.

Would you sum up your position on it?

EMPHASIS FOR MORE SHIPS NOW

Mr. MIDDENDORF. I think Secretary Rumsfeld, Dr. Wade, and Mr. Aldridge and the study group got into the question of the proper mix in remarkable depth. I should think Congress would be grateful to OSD for the time put in on this thing and for the detailed review that permitted a well-founded report to Congress. Programs that the Navy has for some time felt to be important, were considered in the mix. OSD, looking at it from another perspective, considering all

assets which contribute to the Navy mission, was able to come up with a reasoned position. We all benefit very much from such a review. One of the real pluses was the add-on of long-lead funding for the new carrier, plus the increased emphasis on the lower end of the mix. We've got to have a lot more ships than we've got right now.

The CHAIRMAN. All right. Thank you very much. My time is up.

Let's see, has everyone had a chance to ask questions?

Senator Taft?

Senator TAFT. Thank you, Mr. Chairman.

What size ship can we put a nuclear reactor in? How big does the ship have to be, Admiral, with the present nuclear reactors that we have?

Admiral HOLLOWAY. I would say that we could build a militarily capable warship, powered by nuclear reactors of the current technology of probably 7,000 to 8,000 tons at the lower limit. This is a surface ship, Senator Taft.

Mr. MIDDENDORF. I think the admiral's point is that the nuclear propulsion unit plus the shielding comes to about 2,600 tons, as a minimum, all by itself.

Senator TAFT. You're talking about a practical possibility. You're not talking about the current reactors that we have designed and have operating.

Admiral HOLLOWAY. That is a warship, I am saying a practical warship. It is one in which a pressurized water reactor, which is our present approach to reactor design, would power the ship at about 30 knots, and would provide enough additional electrical power to operate the weapons systems equipment that would go with the ship.

Now, it is possible to put a reactor of current technology into a smaller hull, but I am relating the question to a useful warship with speed and the additional electrical power to operate the installed systems.

Senator TAFT. Following up on Senator Culver's point on the current title VIII, I talked to Admiral Rickover about this whole area at one point. We discussed the V/STOL carrier situation, and a 25,000-ton V/STOL carrier, which is what I was aiming at. Admiral Rickover even agreed; he didn't think that probably nuclear propulsion would be appropriate.

I think really title VIII is a useless provision in the law. I tend to agree with Senator Culver on what the implication is. I'm sorry if I'm repeating on this—but I'm not sure whether the strike cruiser situation was discussed fully. I am particularly interested in knowing whether or not there really is any particular advantage that the strike cruiser has over, one, an aircraft carrier or, two, let's say two DDG-47's.

We are talking about \$1 billion on that as against what, \$400 million for a DDG?

Admiral HOLLOWAY. Between \$500 million and \$600 million in the repeat ships, Senator, but I'll provide those correct figures.

[The DOD information follows:]

The cost of the first DDG-47 follow ship is about \$550 million in fiscal year 1979 dollars. The first follow CSGN costs about \$1,181 million in fiscal year 1981 dollars. The procurement unit cost of these follow ships expressed in fiscal year 1976 dollars would be \$818 million for the CSGN and \$435 million for the DDG-47. You must keep in mind though, that the CSGN is a larger and more capable ship than the DDG-47, but each has the capability required to perform its mission.

Senator TAFT. That has come down \$100 million from the follow-on. We were told \$800 million.

Secretary RUMSFELD. This is another statistical sheet. We can look on this if you want a specific figure. It depends on what year's dollar you are talking about.

Senator TAFT. It does. I'm talking about current dollars. I thought it would have gone up \$100 million from last year on that basis.

ADVANTAGES OF NUCLEAR POWERED STRIKE CRUISER

Admiral HOLLOWAY. If I could talk about the differences in capabilities of the ship. The strike cruiser has as its principal advantage its nuclear propulsion plant, of course, and as I have pointed out, that can be of more or less value, depending upon the tactical and the strategic situation the ship finds itself in. If it is a conventionally powered ship in the Indian Ocean, and its one oiler has been sunk, then nuclear power becomes a question of survival. If it is a ship in the Mediterranean, then sources of fuel are a little bit closer and the advantage of nuclear propulsion is not as pronounced.

The strike cruiser also has the 8-inch gun, and it will have the ship-launched cruise missile, the Tomahawk in its tactical version. That means that the strike cruiser can steam unlimited distances at high speed without refueling, and attack an enemy surface ship or a well-defined surface target with its cruise missiles at distances of about from 300 nautical miles away. It ought to be able to defeat anything that the Soviets have in the way of surface ships and cruise missiles that we see in their future.

The DDG-47 is somewhat less capable, just as it is less costly, in that it does not have the unlimited high-speed radius of action, and it does not have the ship-launched cruise missile.

Senator TAFT. It could be fitted with it, couldn't it?

Why aren't we going to fit them on?

Admiral HOLLOWAY. Because in order to put it into the DDG-47, we have to enlarge the size of the ship.

Senator TAFT. Doesn't it have torpedo tubes already?

Admiral HOLLOWAY. It has torpedo tubes, but they are for ASW torpedoes and are too small to accommodate the SLCM.

Senator TAFT. I was wondering, if we were going to build a new class of ship here, why we are putting all this emphasis on the cruise missile, and whether we shouldn't be looking to put a system even into the smaller ship; if it could be launched from an aircraft, it seems to me it can be launched from a ship.

Admiral HOLLOWAY. It can be, and I think that before the DDG-47 completes its service life, it will have SLCM installed, perhaps using a canister arrangement.

Senator TAFT. How confident are we that the Aegis is going to be this good of a defensive system?

How do we know the Aegis will give us a defensive capability against new systems that are obviously going to be developed during that two decades that we are talking about?

Admiral HOLLOWAY. We do have one of the planar radar faces of the Aegis radar system, and the associated computers on the U.S.S. *Norton Sound*, which is a missile test ship. The results of missile

firings from *Norton Sound*, with Aegis controlling standard missiles have been impressive. I don't have the data with me. I would be pleased to provide them for the record.

[The DOD information follows:]

At sea testing of the Aegis Engineering Development Model 1 (EDM-1) on U.S.S. *Norton Sound* (AVM-1) commenced May 16, 1974. To date, 25 test firings of modified Standard Missile-1 (medium range) missiles have been conducted. [Deleted.] The Aegis at sea flight test program has called for increasingly difficult targets in order to fully test Aegis against targets which adequately simulate the current and projected Soviet antiship missile threat. [Deleted.] Additionally, the Aegis fast reaction capability has been repeatedly demonstrated throughout the flight test program. It is noteworthy that U.S. Navy personnel have operated the system for all firings and have maintained the system since the beginning of 1975.

Senator TAFT. You think it is suitable to control the AS-6 missiles?

Admiral HOLLOWAY. The AS-6?

Senator TAFT. The AS-6, which is the new Russian missile.

Admiral HOLLOWAY. To defeat it.

Senator TAFT. Yes, sir.

Admiral HOLLOWAY. Yes, sir. It is my opinion that the Aegis will be able to handle all of the Soviet missiles that are in operation or are expected to be in operation in the next 5 years.

Senator TAFT. Has there been an analysis of the CVNX decision against threats of change since the last basic study by the Congress on the CVNX about 5 years ago?

Admiral HOLLOWAY. No, sir, there has not been a study that I know of. As you are aware, the study in 1970 did look at *Nimitz* class carriers, projecting their warfighting capability which includes vulnerability to weapons systems, into the future. In this connection we did look at the survivability of that class of carrier against Soviet cruise missiles, and we found that their survivability was at an acceptable level.

Senator TAFT. There is one other point I'd like to make. We discussed the FFG this morning, but the comparisons that were made against the FFG were against other surface ships or against the air threat. Really, the basic comparison has got to be against the nuclear submarine, doesn't it? The Soviet nuclear attack submarine is the major threat, isn't it?

Admiral HOLLOWAY. No, sir. I think the Soviet nuclear attack submarine is one of the principal threats. But it would be imprudent of us to optimize the Navy against the submarine, because that would then leave us vulnerable to aircraft. The FFG-7 is a ship that I greatly admire, and a design in which I have enormous confidence. It is a very capable 3,600-ton ship of great value for its cost, and it has a good capability to operate against submarines by virtue of the fact that it will have the towed array sonar which is able to detect submarines at a considerable range. It carries two helicopters, which can be hangared. The new Lamps III helicopter, which will be coming into the fleet about the time that the FFG-7 becomes operational, will be able to operate [deleted] miles from the FFG for considerable onstation periods of time, controlled by the frigate which can detect submarines by means of its towed sonar.

The CHAIRMAN. Senator, I'm sorry, your time is overrun.

Senator TAFT. Thank you very much.

The CHAIRMAN. Do you have any questions?

Senator NUNN. I am next and I yield to Senator Symington.

The CHAIRMAN. All right, Senator Symington.

Senator SYMINGTON. Mr. Secretary, you were not on board at this time, this is something that happened at Foreign Relations Committee that disturbs me a great deal.

Our Ambassador to Saudi Arabia was discharged under unfortunate and peculiar circumstances which I cannot get into because that testimony was given in executive session, but under oath this afternoon in an open session he testified that the Saudi Arabians offered to him when he was Ambassador to Saudi Arabia, to put up all of the economic and military money requested by Somaliland because of their apprehension of the Soviet Union going into Somaliland, and that he so reported back to the State Department, and that he never heard from them.

Later on he was relieved from his position, and later resigned or discharged, and he said when he came back here that an official of the State Department said that the reason that he didn't get any reply was because the administration felt that they could use Berbera in Somaliland as the Soviet base, as the best way to obtain approval of our putting a base in Diego Garcia through the Congress.

If it is true, it is such a shocking charge that I just wondered if you or my friend, Secretary Middendorf, or Admiral Holloway, knew anything about this in any way.

Secretary RUMSFELD. Senator, I have never heard the original story or the latter portion of the story as you related it. I never heard anything approaching that.

Senator SYMINGTON. I just thought I would like to ask you that, because this man was 22 years in the Foreign Service, he was a graduate chemical engineer, he seems to be a perfectly decent and good American, and that was his testimony today, and so I thought inasmuch as you were over here, that it would be a good idea to clarify and to ask.

Could I ask, Secretary Middendorf, if you've ever heard anything like that?

Mr. MIDDENDORF. Is that Ambassador Akins?

That's the first I've ever heard about a tie-in like that. I never heard it discussed.

Senator SYMINGTON. Were you on the National Security Council at the time?

Secretary RUMSFELD. I was not a member of the National Security Council, but in my position as Chief of Staff of the White House, I did attend National Security Council meetings. I suppose I may have missed one or two, but I was almost always there. I have never heard anything like that discussed anytime, anyplace.

Senator SYMINGTON. I just wanted to clear it up.

The CHAIRMAN. All right.

Senator McINTYRE. Senator Nunn has yielded back to me.

The CHAIRMAN. All right, he is yielding back to you.

Senator McINTYRE. We are going to hear testimony tomorrow from Admiral Rickover that will say this: the cost of the seven nuclear strike cruisers is estimated at \$8,530 billion. The cost of two nuclear strike cruisers and six conventional DDG-47 class ships is estimated to be at \$6.298 billion. To this should be added \$1.5 billion to give the six conventional ships the same military characteristics as the

nuclear strike cruisers. At \$540 million at today's prices for the cost of buying and delivering 300 million barrels of oil to each conventional ship, this gives a total for the mixed program of \$8.338 billion. This is only \$192 million less than the cost of the seven nuclear strike cruisers.

Thus, when all of the nuclear program of the seven strike cruisers is compared to a mix program of two nuclear strike cruisers and six conventionals having the same military characteristics, the extra cost of the all-nuclear program is seen to be about \$200 million for one less conventional ship.

Would you care to comment on that?

Secretary RUMSFELD. Senator, you went awfully fast for me. It is a bit unusual to be commenting on somebody's testimony that is going to be given tomorrow.

Senator McINTYRE. Why is that? Why is that unusual?

Senator CULVER. Because it isn't tomorrow. [General laughter.]

Secretary RUMSFELD. I don't know the context of the figures you cited.

But the relative cost of nuclear and conventional power, as I understand it, has been debated within the Navy ever since the advent of nuclear propulsion. We would be happy to supply statistics in response to that.

Senator McINTYRE. The subject matter is comparison of the cost of CSGN and DDG-47. I'd like to have your comment on that after you have studied it.

Secretary RUMSFELD. The admiral has a comment.

Senator McINTYRE. Good.

Admiral HOLLOWAY. I think the key is the \$1.5 billion that you add to the characteristics of the DDG-47 to make it an equal case, and that seems to be some rather obvious arithmetic. We designed the DDG-47 knowing that it was less capable than the strike cruiser, but on the other hand we could get it for less cost.

Obviously, if we add military characteristics to it, it is going to bring it up to what is close to the cost of the strike cruiser. Therefore, I think the argument is not very significant.

Senator McINTYRE. What are military characteristics, the ability to handle a helicopter and certain things like that?

Admiral HOLLOWAY. Yes.

Senator McINTYRE. Admiral Rickover left out personnel costs and operating costs, both of which are on nuclear ships also.

Thank you, Mr. Chairman.

Secretary RUMSFELD. Could I comment, Mr. Chairman, on this? I think it is interesting.

The CHAIRMAN. All right.

Secretary RUMSFELD. Concerning the advantage, the military advantage, of a nuclear ship, I don't think there is much debate about it. That is to say, as the admiral and I have said, that you can actually calculate the ability of a nuclear-powered ship to travel a long distance and be capable of conducting its engagement at the end of that time without refueling. That is valuable if, in fact, the assignment is to travel long distances and be capable of engaging at the end of that trip.

As the admiral indicated, in the event you are going to be engaged in the Mediterranean and you are in the Mediterranean, that advantage is less significant. It is almost like trying to compare U.S. with Soviet amphibious ships. Ours are larger and more capable. They have to be because they must project themselves over a considerably greater distance. A smaller, less capable Soviet amphibious ship can, in fact, have an operationally equivalent—the same capability—if its task is to deal with the Baltic area, the Mediterranean, or the area contiguous to the Soviet Union. It need not have that capability to traverse an ocean and conduct itself in an entirely different environment.

So I come back to where we were. If it is desirable to compare something in writing, we will, but basically these discussions and arguments have been going on for a long period of time. The important question is, what kind of capabilities in total are needed? I believe that you are not going to find a solution to the problem in any one ship or any one propulsion unit.

Senator McINTYRE. Do the four 963's which the House substituted for four of the eight FFG-7's requested by the President constitute a suitable and cost-effective alternative to the FFG-7's?

Admiral HOLLOWAY. No, they do not.

Senator McINTYRE. I think that is good enough. You can expand on that for the record if you wish.

The CHAIRMAN. All right.

Admiral HOLLOWAY. To make that point clear, the DD-963 proposed is not cost-effective in this program compared to an FFG-7. An FFG-7 is more cost-effective than this design of a destroyer.

Senator McINTYRE. Does the DD-963 have any anti-air capability?

Admiral HOLLOWAY. Only for its own self-defense.

Senator McINTYRE. It will cost how much more, approximately? Twice as much?

Admiral HOLLOWAY. I believe approximately twice is a good estimate.

Senator McINTYRE. That's a rough estimate. Thank you, Mr. Chairman.

The CHAIRMAN. All right, that brings us to Senator Nunn, if I understand.

Senator NUNN [presiding]. Admiral, in this morning's New York Times, there's an article that cites a Library of Congress study that basically says, and I quote,

In the 1969 period, an average of 17.4 ships was delivered annually to the Soviet Navy. This was less than half the annual delivery rate of 45.5 ships during the 1958-68 period when the Soviet Navy was engaged in a large-scale buildup.

Without quoting it all, the conclusion basically is that there is a decline in shipbuilding in the Soviet Navy, and that they are going to level off after they retire some of the vessels, at about the same level that we are now. Would you care to comment on that?

Admiral HOLLOWAY. Senator Nunn, I haven't seen that study, therefore I don't know what the inputs were. I would say they are inconsistent with the agreed national intelligence estimate.

Senator NUNN. We will furnish that for the record and get your view in the record, and have it in a classified version.

Secretary RUMSFELD. We are prepared to respond to that in a classified version.

Senator NUNN. Well, I would like it both ways if you could, if we can get it that way.

Secretary RUMSFELD. Well, I know we can.

[The DOD information follows:]

TABLE 1.—AVERAGE NUMBER OF SHIPS DELIVERED PER YEAR

	1958-76		1969-76		Sustainable Navy ¹		Actual Navy ² 1976— DOD
	CRS ³	DOD	CRS	DOD	CRS	DOD	
U.S. Navy.....	19.8	19.7	19.5	20.3	485	507	478.
Soviet Navy.....	33.7	49.0	17.4	49.0	435	1,225	[Deleted]

¹ Sustainable Navy computed using 1969-76 rates and an average service life of 25 years per ship.

² Actual force levels based only on types included in delivery totals.

³ Congressional Research Service, "Comparison of U.S. and U.S.S.R. Naval Shipbuilding."

TABLE 2.—SHIP DELIVERIES ¹ 1958-76

Type	U.S. No.		U.S.S.R. No.	
	CRS	DOD	CRS	DOD
Carriers.....	14.0	7.0	3.0	[Deleted.]
SSBN.....	41.0	41.0	54.0	
SSN/SSGN.....	64.0	65.0	74.0	
SS/SSG/SSB.....	5.0	5.0	126.0	
Cruisers.....	23.0	23.0	17.0	
Destroyers.....	45.0	42.0	47.0	
Escorts.....	92.0	68.0	65.0	
Amphibs.....	48.0	56.0	93.0	
Support.....	45.0	48.0	160.0	
Total.....	377.0	355.0	640.0	882
Average per year.....	19.8	19.7	33.7	49

¹ Not included are [deleted] GRISHA class PCE's which although over 1,000 tons are classified as patrol escorts.

TABLE 3.—SHIP DELIVERIES 1969-76

Type	U.S. Nos.		U.S.S.R. Nos.	
	CRS	DOD	CRS	DOD
Carriers.....	2.0	1.0	1.0	[Deleted.]
SSBN.....	0	0	40.0	
SSN.....	32.0	30.0	11.0	
SS/SSG.....	0	0	1.0	
Cruisers.....	2.0	2.0	9.0	
Destroyers.....	4.0	1.0	13.0	
Escorts.....	59.0	46.0	5.0	
Amphibs.....	38.0	38.0	0.0	
Support.....	25.0	24.0	59.0	
Totals.....	155.0	142.0	139.0	343
Average per year.....	19.5	20.3	17.4	49

¹ Total of this column is incorrect. No attempt made to change this report. Annotated for information only.

Senator NUNN. Fine.

One other line of questioning, I have seen certain tables that show the capability for U.S. action against Soviet submarines, number of kills and so forth, and it reflects, of course, a much higher number of kills, if possible, with ASW capability than with carriers and surface vessels.

Has that equation been taken into consideration in this present package, that is to say, the relationship between what we are building in our real principal threat to the NATO sealanes, which as I understand it, would be the Soviet submarine?

TOTAL SOVIET MILITARY THREAT TO OUR MARITIME STRATEGY

Admiral HOLLOWAY. Yes, sir, I think that has been taken into consideration in this way. We have looked at the Soviet threat and the Warsaw Pact threat, not solely Soviet Navy, but the total Soviet military threat to our capability to carry out our maritime strategy and as I think I indicated this morning, the area in which analysis indicates we have a deficiency, is in our ability to defend in an anti-air warfare sense against the future of expanding numbers of the Backfire bombers, and against the cruise missile. Because the cruise missile can be launched at a considerable distance from our surface ships, makes it an air warfare problem as well as a surface or submarine warfare problem which the platform was.

So that I can say positively that the threat and our capability to cope with it, have been very carefully considered in arriving at judgments represented in the President's decisions.

LACK OF AMPHIBIOUS LIFT CAPABILITY FOR MARINE CORPS

Senator NUNN. One of the deficiencies that is very apparent, particularly when you get into the manpower area and what we are capable of doing with the existing manpower, is the lack of amphibious lift capability for Marine Corps. I know that for a good while there has been, I suppose, a disagreement between the Marine Corps and the Navy about the priorities, but getting right down to it, we can use only about 45 percent of our Marine Corps in any kind of amphibious landing because of the lack of naval amphibious vessels, and yet in this budget and in the supplemental there is no emphasis whatsoever on that.

Two questions really. Is the Navy concerned about the lack of amphibious capability for the Marine Corps, and if you are not concerned about it, how do we justify the number of divisions we have in the Marine Corps when about 55 percent of them cannot be landed at one time in any kind of joint amphibious operation?

AMPHIBIOUS CAPABILITY PART OF NAVAL BALANCE

Admiral HOLLOWAY. Well, first, Senator Nunn, we are very much concerned about the Marine Corps, and I believe that the Commandant of the Marine Corps, General Wilson, and I see very much eye to eye on the subject. It would not be wise to get our amphibious shipping force levels out of synchronization with other naval capabilities. We must remember that this amphibious capability is unique in that it is the ability to put people ashore in an opposed assault landing. This means the Marines have to fight their way ashore. In order to land on an enemy defended beachhead we must have naval ships to provide gunfire support, carriers to first gain air superiority in the objective area, and then provide close air support. Amphibious

capability is part of the naval balance. If we were to build a greater amphibious capability than we could provide support for our total naval capability, it would be getting us out of balance.

Senator NUNN. Of course, the next question was, we are way out of balance right now with the number of Marines who are being trained for amphibious landing, and the capability of the Navy to deliver those Marines, and we are also even in worse condition with naval gunfire. It is not just the amphibious landing, but I think the gunfire capability of the Navy. I don't remember the amount, but it is less than the amphibious capability. So what I am worried about is the lack of balance that already exists.

How do we justify three Marine divisions when we can only use $1\frac{1}{4}$ for amphibious landing, and when the naval gunfire rate is less than that?

Admiral HOLLO 'AY. Well, let me answer in my capacity as acting Chairman of the Joint Chiefs of Staff. I think I accurately reflect General Brown's views. We don't plan to assault land the entire Marine Corps all at the same time. We assault land only elements of it, and then additional forces are brought in administratively.

Senator NUNN. The whole question there gets into whether you've got a scenario going 90 miles offshore or whether you are invading some part of Europe. Obviously if we are going to conduct a run somewhere near the United States, we could send a ship back and so forth, but if you are going to operate a long way from this country, the fact that you are going to send them back is very remote.

Admiral HOLLOWAY. Yes, sir. I was thinking more in terms of our capacity to move about $1\frac{1}{4}$ Marine amphibious forces, which is the Marine Air-Ground Team, in an assault landing in an opposed environment, then to seize the necessary port facilities or airhead in order to fly in the additional Marine forces by air or nonassault shipping. On the question of naval gunfire, we recognize that this is a deficiency in our current capabilities as a result of the large number of World War II gun-equipped ships leaving the active inventory, and being replaced by the more modern missile equipped ships. We are attempting to rectify this by putting the 8-inch light weight gun on a number of our surface combatants. It will go into the *Spruance* class ships, and as I pointed out to you, it will be available for installation in future ships.

Senator NUNN. You are going to move on that deficiency then.

SHORTFALL IN NAVAL GUNFIRE

Admiral HOLLOWAY. Yes, sir. We are very conscious of the fact that we have a shortfall in naval gunfire.

Senator NUNN. What is in this year's budget for it, I don't mean the supplemental, I mean this year's budget, the fiscal year 1977.

Admiral HOLLOWAY. The initial funding for the major caliber (8-inch) lightweight gun is included in the fiscal year 1977 budget request. I will provide for the record the information concerning the funding.

[The DOD information follows:]

The fiscal year 1977 weapons procurement, Navy (WPN) budget request contains the initial funding for the major caliber lightweight gun program. Funds in the amount of \$30.5 million are being requested for production startup items,

which include production tooling/special test equipment, drawing and production engineering. An additional \$8.2 million has been requested for long lead forgings and other items needed to procure initial production materials for the first system and long lead assemblies for seven systems. The total request is for \$38.7 million.

Senator NUNN. If you could provide that for the record, and also are you saying that we have enough amphibious capability now, the sealift, and therefore we don't need any more, or are you saying we have a deficiency there?

Admiral HOLLOWAY. No, sir. I think what I'm saying is that I consider that our amphibious lift capacity is in balance with our total naval capability, which is our ability, in a total sense, to control certain areas of the sea that we wish to use, and the air over it, and thus provide the necessary secure areas for an amphibious assault landing.

Senator NUNN. Do you think that our amphibious capability should increase only with a corresponding overall increase in general overall naval power?

Admiral HOLLOWAY. Yes.

Senator NUNN. And it does not need a priority assignment.

Admiral HOLLOWAY. I think it has a priority within the Navy itself. We see our principal shortcomings in the areas of sea control, and that is why we need ships such as the *Perry*-class frigate to give us the density of force to be able to control areas of the sea and to protect those amphibious forces en route from the staging areas to the targets.

Senator NUNN. I will furnish a few more questions following up on the record. I know other people want to ask questions.

Senator CULVER.

Senator CULVER. Thank you, Mr. Chairman.

Mr. Secretary, for the record, will you provide a full breakdown of the \$200 million request for R. & D., how that is to be spent, for what purposes.

Secretary RUMSFELD. Yes.

[The DOD information follows:]

<i>Summary of \$200 million R. & D. request</i>		<i>Millions</i>
V/STOL aircraft.....		\$60
Components and tech base (such as engines, lift devices, and so forth)		
Prototype aircraft demo		
RPV's for recon, and so forth.....		10
Improved targeting capability.....		20
Improved antiship missiles.....		20
Improved land attack cruise missiles (low volume ram jet).....		20
Vertical missile launch capability.....		10
Land-based support aircraft.....		30
Improved ship defense.....		30
Total.....		200

Senator CULVER. Could we have that for the record as soon as possible, and would you also be good enough to provide current figures on naval readiness? I refer to some reports earlier in the day. Could you update that data on readiness, Mr. Secretary? Secretary Menden-
dorf spoke to that, too. Could we have some current figures on that?

Mr. MIDDENDORF. Yes, sir.

[The DOD information follows:]

Admiral Bulkeley, as President of the Board of Inspection and Survey, conducts thorough and detailed periodic inspections of the material condition of our ships. Based on a simple Material Condition Index (MCI), which Admiral Bulkeley has devised for his use as a trend indicator, he has noted a slow but definite improvement in ship material condition during CY 1975. The MCI is an indication of the likelihood that a ship's material condition can satisfactorily support prompt, sustained, and reliable combat operations at sea. However, the MCI is useful for trend assessment only. There is no absolute "standard" for MCI data and the numbers can show only relative improvement or degradation. The MCI also addresses only material condition. It does not include factors for personnel or training.

MCI data have been tabulated since early 1975 in order to quantify the impression that the material condition of the Fleet is improving. The first MCI data reported in August of 1975 showed the simple average at that time to be [deleted]. Since that time the MCI average has consistently improved. Additionally these data have been correlated with the concurrent improving trend in the performance rate of equipment preventive maintenance by shipboard personnel. The Fleet Commanders have confirmed the fact that an encouraging gradual upward trend has been observed. The most recently computed MCI averages are shown below. The index is structured so that an improving trend is described by smaller sized numbers.

August 1975.....	} Deleted.]
October 1975.....	
December 1975.....	
March 1976.....	

Senator CULVER. And then this *Belknap* collision was referred to also.

How many other U.S. Navy ships were involved in collisions last year which required shipyard work?

Could you give me that for the record, and what percentage of the fleet required such repair work?

Secretary RUMSFELD. As a result of collision?

Senator CULVER. Yes, and the cost of those repairs last year, and also the 3-year trends and the frequency of costs of such accidents.

[The DOD information follows:]

There were 34 collisions in 1975 and 35 collisions in 1974. The cost of repair of collision damage is difficult to determine since repairs are usually made as part of a regular overhaul or restricted availability which includes a great deal of other, noncollision related work. Costs for 1974 and 1975 total approximately \$5.5 million. The trend of collisions since 1971 has been generally downward through 1973 and then up in 1974 and constant in 1975.

Senator CULVER. And then, Mr. Secretary, turning to this Minuteman request——

Secretary RUMSFELD. Excuse me, Senator. I know Admiral Holloway has an appointment at 4:30 to go over to Minuteman.

Senator CULVER. Well, I have some additional classified questions, but——

Senator NUNN. Do you have some questions?

Senator LEAHY. I have just a couple of fairly quick ones.

Senator NUNN. Let me ask you this question.

Do you want to stay in session and go into some classified information?

Senator CULVER. No. As far as I'm concerned, I'm finished with the Navy, but I have some Minuteman questions which are classified.

Senator NUNN. Well, I think the question is to see if there are any more questions for Admiral Holloway so he can get away.

Is that your option, Mr. Secretary?

Would you defer to Senator Leahy and see if he has any more questions for Admiral Holloway.

Senator LEAHY. Following up on what you had, Senator Nunn, I have been spending about 6 months, now, doing a fairly extensive review for the committee on our ability to resupply. NATO, the Defense Department, and the various branches of the services have been very helpful in providing material. The concern is not an adequately coordinated effort.

Do you feel, Admiral, that indeed if we had a war in Europe, one that was going to be maintained in a conventional way, that lasted any duration, say, more than 45 days, that during that time we could actually move the amount of material that is now being planned to be moved by sea, or would you prefer to answer that in classified form?

Admiral HOLLOWAY. I think a good answer would be classified, because it would be a very clear indication of our capability.

Senator LEAHY. I understand, and if you could give a classified answer to that, it would be helpful.

[The DOD information follows:]

The existing (FY 1976) U.S. capability to reinforce the conventional defense of NATO Europe without pre D-day mobilization and with current Army unit availability has recently been assessed by OSD and reported to the Congress [deleted].

The adequacy of strategic sealift is a multi-dimensional issue. Studies have indicated that mobilization of the U.S. merchant marine augmented by at least [deleted] NATO dry cargo ships and activation of the National Defense Reserve Fleet provides an overall sealift capability which can deliver the presently planned sealift movement requirement [deleted]. However, [deleted] the ability to meet the supported commander's required delivery dates exist in the early time-frame.

Planned sealift movements are sized to existing capabilities. An increase in the pool of highly productive modern merchant ships such as the *Lash* and *Seabarge* types, would result in an improved capability [deleted].

In summary, increased numbers of modern ships in the U.S. merchant marine and the Military Sealift Command fleet would contribute directly to resolution of the overall (sea and air) strategic mobility equation.

The CHAIRMAN. All right, Senator.

Senator NUNN. I believe at this point, Mr. Chairman, Admiral Holloway was going to try to get away. I think everybody is through questioning him.

The CHAIRMAN. We want to thank you for your attendance here today. You've been very helpful to us.

Admiral HOLLOWAY. If you'll excuse me, sir, I'll take departure.

[Whereupon, Admiral Holloway left the hearing room.]

Secretary RUMSFELD. I'd like to ask Dr. Jim Wade to come up.

Senator CULVER. Mr. Secretary, in your posture statement, asking not to ask for continued Minuteman production in January, you stated, and I quote:

Any additional deployments beyond the current level of 550 would not add significantly to the U.S. military capability, but would increase the strategic budget by more than \$300 million for each further year of production.

If even deployment would not add much to our strength, why do you want over \$300 million for new missiles to be kept in storage?

Secretary RUMSFELD. Senator, I've found that about the only way I can answer that question in a way that makes sense and there is no question in my mind but that it does make sense is to use a calendar and look at the timing.

MINUTEMAN III ACTIVE BALLISTIC MISSILE PRODUCTION LINE

If you look at the Minuteman III line, which is the only active U.S. ballistic missile production line, it is not something that is either off or on. The line having been started up, suppliers that work on various pieces of the missile begin to fall off when the end of production is in sight. Then you no longer have an active production line.

Now the Vladivostok understanding suggests that we will at least have the opportunity to achieve a SALT agreement of 2,400 strategic nuclear delivery vehicles and 1,320 MIRVed launchers. Were that achieved as of today, we would not have the need to keep the Minuteman III line open. The fact is that it has not been achieved today nor is it clear at what point next year it will be achieved. I don't want anything I say here to lead anyone to believe that I've got some information, as that I'm sending signals on SALT, because I'm not. Until one of these negotiations is completed, it's not completed. Absent an agreement, it seems to me that the prudent thing to do is to request the 1977 funds so that we retain the option to continue producing Minuteman III missiles.

Were we to fail to do so, the suppliers on the Minuteman III line would be expected to start falling off about now, even though fiscal 1977 funds don't start being expended until October 1, 1976.

We will review it during the year. My hope is that we will not have to spend the money. However, there are various circumstances which could occur such as a prolonged SALT negotiation, or—I hate to even say it—some behavior on the part of the Soviet Union that would lead us to believe we needed additional missiles. At such a point, with suppliers having peeled off the production line, we would not be able to have them without a tremendous expenditure of time and effort in achieving the reassembly of that production line.

As October 1 approaches and we see the rate of progress in SALT, a judgment can be made as to whether we should use some of the money to keep that line open longer or not. We certainly would not, as I indicated in my testimony in January, want to be buying those missiles simply for the sake of having extra missiles.

Senator CULVER. If this is not a firm and final decision, and you haven't reached it whether you are going to spend money for this purpose, why couldn't this committee perhaps just approve the reprogramming request, and in effect defer the supplemental until next fall?

Secretary RUMSFELD. We know now we need the reprogramming, and we know now we need to be able to keep that production option open between now and September 30. To what extent any of those 1977 funds would affect the health of that missile line between now and then, I am not in a position to say with precision. That would require talking to people who produce it.

Do you know, Jim?

Dr. WADE. I think the judgment here is that we believe we are going to need these additional missiles. In September we are going to review it. If at that time we don't need them we are going to turn the production line off. There is a difference in tilt in what we are asking for now, with a review later on as opposed to deferring it until September.

Senator CULVER. You've got the tilt if you reprogram it. Last year, the Congress approved this \$203 million for 50 Minuteman missiles which were intended only for test purposes in the mid to late 1980's. Now, the argument at that time was that the continued production was necessary in order to get the SALT agreement, and for success at SALT.

What were we able to achieve as a result of this \$200 million?

Secretary RUMSFELD. Answering that, of course, would suggest that we'd be able to know what affects what in a complicated negotiation of that type.

Senator CULVER. The taxpayers want to know, too, I think.

Secretary RUMSFELD. It's not the kind of a subject in which we can identify cause and effect with each element. I don't know anyone who felt that if the United States last year were to have shut down its only ICBM line, that it would have contributed in a healthy way to SALT.

Senator CULVER. In your posture statement last January, Mr. Secretary, you said you might have to ask for supplemental funds, and I quote, "depending upon the outcome of SALT II negotiations and our continuing assessment of the Soviet ICBM program."

Now, that is certainly reasonable enough, but is it correct, as recently reported by the New York Times, that the ball is now in our court so far as SALT II is concerned? The Times, April 11, quoted, the Soviet Union responded to our mid-February proposal in late March, and in effect asked us to come up with a new proposal. The Times also said that the verification panel was against studying new proposals.

I guess the question I would have is, to what extent should the U.S. taxpayers have to pay for the U.S. delays in negotiations?

Secretary RUMSFELD. Senator Culver, the President of the United States and the National Security Council have, in my judgment, been proceeding in a serious, steady manner with respect to the strategic arms limitations negotiations. When one is engaged in a negotiation with a nation such as the Soviet Union, no man alive can predict the day on which it will be successfully resolved, unless he is willing to give away the store. There isn't anyone in this process who is willing to give away the store.

There have not been delays for the sake of delays. It is a difficult, complicated subject, and the President is serious about working to see if it is possible to achieve an equitable agreement on this subject.

It strikes me, in answer to your question, that the taxpayers of America, the people of America do, in fact, want that process to proceed in an orderly way. They do want it to be seriously approached, as we are doing. But at the same time, I don't think they want us to avoid delays by doing something that is not in the interest of our national security.

Senator CULVER. Let me ask you, is the ball in our court now in the sense that we have not responded?

Secretary RUMSFELD. Well, I am a little reluctant to characterize the negotiations that way, although I note that some people in the press aren't as reluctant as I am. I think when the history books are written on the SALT II negotiations people will look back with respect to the past 5 years, and it probably will be said that the negotiations have

proceeded back and forth, communications, visits, both in Geneva and through the Presidential channel in an orderly way. In fact, we are at this time reviewing the situation.

Senator CULVER. If we proceed, Mr. Secretary, with the Trident program as currently scheduled, and if a 1,320 MIRV limit is actually agreed upon and ratified, in what year will we purchase the Trident submarine which would give us more than the 1,260 MIRV's? In other words, what I am getting at is when will the deployment of the 60 new Minuteman missiles conflict with our Trident buy?

Secretary RUMSFELD. It would depend upon how you fix the mix, and at what rate you phase out the earlier Polaris/Poseidon submarines. In other words, as you proceed through a year, you would look at is the overall picture. You would look at your total strategic nuclear capability, you would look at your targets, you would look at your capabilities against those targets and arrange them in the way that made the most sense at that time. It might lead to a delay in phasing out of the Poseidon.

Senator CULVER. How about on our current schedule of Trident, assuming that remains constant?

Secretary RUMSFELD. Dr. Wade?

Dr. WADE. Assuming a decision were made to increase the Minuteman III deployment level to 600, it would be about 1984 or 1985.

Senator CULVER. 1984 or 1985, but the older subs don't have the MIRV's, do they?

Dr. WADE. You mean the older Polaris, that's correct.

Senator CULVER. Can you supply us for the record, because I know it is complicated, but you get the thrust of the question, I want to know when we bump up against those, when we have to dip into this other inventory and make some of these other decisions on what is going to go.

But for the record, may I have that?

Secretary RUMSFELD. Sure.

[The DOD information follows:]

MINUTEMAN III BUDGET AMENDMENT

Assuming that we obtain a SALT II agreement along the lines of the Vladivostok Accord, and that a decision is made to deploy 50 of the 60 Minuteman III missiles requested in the President's budget amendment (i.e., assuming a total of 600 MM-III missiles would be deployed), we would "bump up" against the 1320 MIRV limit in FY 1985 when the tenth Trident SSBN (fully funded in FY 1980) entered sea-trials. At that time, depending upon our perception of the threat, we would either phase out one Poseidon SSBN (16 launchers) or 16 Minuteman III launchers.

Senator CULVER. If you wish to demonstrate United States strength, why do you not deploy the 50 missiles that were purchased last year as the test vehicles right now instead of asking funds which might or might not be used, and for missiles which would end up in storage?

Secretary RUMSFELD. The purpose is not to demonstrate strength. The purpose for the United States is to have the total military capability necessary to fulfill the missions that have been assigned. The sense that I have and the judgments I and the National Security Council have made, indicate that the arrangements we have with respect to our strategic nuclear force at the present time is what we want.

Now, as you point out, you could take some of those 50 missiles or additional ones. Since you can't dig any more holes because of the interim agreement, you could upgrade some of the old missiles. That costs money. The question is, is it a better expenditure of money than something else? The conclusion is that it is not at the present time given the present circumstance.

Senator CULVER. Can you demonstrate, Mr. Secretary, that acceleration of the MK-12A warhead is sound from a management point of view?

The CHAIRMAN. Gentlemen, excuse me just a minute. I'm going to have to ask you to excuse me in a few minutes. We haven't closed the session yet.

Do you still feel the need for the closed session that was requested, and if so, let's go on into it.

Senator CULVER. I don't think there is any need for it. They can just provide it for the record.

The CHAIRMAN. Let me ask Senator Leahy.

Do you have any matters for a closed session, Senator?

Senator LEAHY. I have one question that might possibly be, but I'd be perfectly happy to submit it for the record.

The CHAIRMAN. All right. Proceed, gentlemen.

Senator CULVER. On the MK-12A warhead request, does this run into any danger between R. & D. and production? I mean, has this been staffed out from a management point of view as being sound?

Secretary RUMSFELD. Yes, indeed. As a matter of fact, it was, I believe, fully staffed some months ago.

Do you want to comment, Dr. Wade?

Dr. WADE. That's correct.

Senator CULVER. You don't see any problems here?

Dr. WADE. No; I think this was a practical approach. We are talking about a 6-month period as far as moving the program forward.

Senator CULVER. And there is no problem insofar as R. & D. and production.

Dr. WADE. No, Sir.

Senator CULVER. When was the program manager instructed to prepare a revised schedule which would permit this procurement 12 months earlier?

Secretary RUMSFELD. On the MK-12A? You mean what date?

My recollection, is that it occurred as the budget was being developed in October, November, December of last year. I would not be a bit surprised if the kind of instruction that you are asking about was in fact first sent then, but I don't know that for a fact. My recollection is that the MK-12A was pretty well ready for the request for funds to go in in January.

Senator CULVER. Could you provide that for the record?

Secretary RUMSFELD. I don't know if I can provide it for the record. I'll try to find it.

Senator CULVER. On what date the program manager was actually directed to prepare this revised schedule?

Dr. WADE. We don't have that.

Senator CULVER. All right.

Also I wonder if you could cite any other examples of where programs have been accelerated to a similar degree, and what costs and disruptions occurred.

Secretary RUMSFELD. I know of no disruptions with respect to the MK-12A.

Senator CULVER. No, I say other programs where you have had a comparable acceleration in the time period.

Secretary RUMSFELD. I'll look. I don't know anything comparable. I think that within the Pentagon, rather than describing this as an acceleration, I had a sense that people feel that it is a very normal, orderly—

Senator CULVER. I think you get my question. Could you provide it for the record?

Dr. WADE. I have it.

[The DOD information follows:]

MK-12A BUDGET AMENDMENT

The MK-12A research and development program was originally planned during fiscal year 1975 for a fiscal year 1976 procurement start and a January 1978 initial operational capability—IOC. In formulating the fiscal year 1976 and fiscal year 1977 budgets, the planned procurement start was deferred as a demonstration of U.S. restraint. In fiscal year 1976 the R. & D. program was adjusted to support a procurement start in fiscal year 1977. The fiscal year 1977 procurement funding for MK-12A of which is now being requested in response to continuing Soviet ICBM deployments, therefore, represents restoration of the program schedule developed in fiscal year 1976 and provides an orderly transition from R. & D. to procurement. Since full scale testing of the warhead is complete and the reentry vehicle is similar to the MK-12, there is minimal risk involved in the transition to procurement.

Senator CULVER. I don't have any other questions, Mr. Secretary. Do you have any?

Senator LEAHY. I do just have one, following up on what you had. The MK-12A significantly increases the yield of our Minuteman III's, is that correct, Mr. Secretary?

Secretary RUMSFELD. That is correct.

Senator LEAHY. And then I think we began production of these warheads as part of the Minuteman III?

Secretary RUMSFELD. Yes.

Senator LEAHY. Do we have any new requirements that dictate this?

Secretary RUMSFELD. Should we decide to deploy additional Minuteman III, we would want re-entry vehicles. It is also desired to retrofit some of the existing Minuteman III missiles.

Senator LEAHY. But talking about doubling the yield of the warhead. Are we doubling it just for the sake of doubling it, or do we have a new requirement that is dictating that?

Secretary RUMSFELD. Oh, I see. Well, there has been a desire, I think understandably, to improve the yield of the MK-12A to the point where it would assist us in reducing the very substantial megaton advantage that exists. I don't want to get into the kind of targets one would use, but if one considers what your task and assignment for these systems is, it is clear to me that that capability is useful in offsetting the existing advantage the Soviets have with respect to megatons.

Senator LEAHY. We have always made the choice in the size of our missiles and our accuracy on that megatonnage. We have always kept our missiles smaller, although highly accurate.

Secretary RUMSFELD. That's right, but it wasn't because we wanted smaller missiles that we wanted smaller megatons.

Senator LEAHY. But are we doing this to execute a flexible response targeting doctrine?

Secretary RUMSFELD. Not in the sense that you are suggesting. We are doing it to counteract current and projected Soviet force improvements. As you go through a period of years, and as you see steps being taken, either to improve the security and survivability of the opposing systems or to improve their offensive capabilities, one is forced to react in order to maintain nuclear stability.

It is not with respect to any change in strategy.

Senator LEAHY. It is not a change in strategy? There's no change in Department of Defense past positions?

Secretary RUMSFELD. No, sir.

Senator LEAHY. I might have a couple of questions on that point for the record, but I have no further questions.

The CHAIRMAN. Gentlemen, is there anything that any of you want to say in addition to what has been said already? I always like to give the witnesses, especially since you have been here all day, a chance to make any point that might have come to mind.

Secretary RUMSFELD. Not I, Mr. Chairman. But, we appreciate the offer.

The CHAIRMAN. All right.

When do you expect this recommendation on the budget and amendment to actually get over here?

Secretary RUMSFELD. I signed the letter to Secretary Lynn yesterday, I believe. They have it in OMB.

Is there a time that you would like?

The CHAIRMAN. Mr. Braswell here has to worry about that.

What do you have on that?

Mr. BRASWELL. We can't act on it until there is a request in the form of a supplemental authorization.

The CHAIRMAN. We are going to try to get this bill marked up this week, gentlemen.

Secretary RUMSFELD. We will contact OMB this evening.

The CHAIRMAN. Get something over here, because it is best to have it in black and white.

We do have some questions for the record.

ADDITIONAL QUESTIONS SUBMITTED FOR THE RECORD

Senator THURMOND. Mr. Secretary, the Defense Department is proposing this year initiation of a five-year program to develop strike cruisers, which would be equipped with the Aegis missile defense system. In your proposal, the request is for full-funding of a conventional Aegis destroyer (DDG-47) at a cost of \$858 million and long-lead funds of \$170 million for a nuclear strike cruiser (CSGN). Now, I believe the House denied the conventional Aegis ship (DDG-47) and approved long-lead for 3 nuclear strike cruisers. Is that correct?

DOD Answer. That is correct. Additionally, the House approved FY 1977 and 1978 funding for conversion of the U.S.S. *Long Beach* to carry the Aegis system.

Senator THURMOND. Mr. Secretary, based on the President's letter of last February this request is the first year of a five-year cruiser shipbuilding program during which time 2 nuclear cruisers will be funded and 8 conventional cruisers funded. Is that correct?

DOD Answer. It is a five-year program for Aegis ships, two of which are nuclear powered strike cruisers (CSGN) and eight of which are gas turbine powered destroyers (DDG-47). Eventually, 24 Aegis ships are to be procured in a mix of 8 CSGN and 16 DDG-47. This mix provides the numbers of ships for fleet air defense which have been reaffirmed by the President after reviewing the tentative results of the National Security Council review of U.S. strategy and naval force levels for the 1990's.

Senator THURMOND. Thus, it would appear the initial thrust of the Administration's cruiser program favors *conventional* cruiser construction at a rate of 4 to 1 over *nuclear* cruiser construction. Would you comment on that observation?

DOD Answer. The thrust of the program is to get numbers of Aegis platforms into the fleet as fast as possible in a sensible mix which reflects the mix of aircraft carrier types we project for the next 15 years. That is, of course, the reason the Department recommends deferral of the U.S.S. *Long Beach* conversion to Aegis until after the peak funding for new construction Aegis ships. At present the long-term plan is to procure gas turbine powered Aegis destroyers (DDG-47) and nuclear powered strike cruisers (CSGN) in about a two-to-one ratio overall.

Senator THURMOND. Mr. Secretary, this new shipbuilding cruiser program is a result of the development of the Aegis air defense system. This system, with its radar and fire control capabilities, will enable the cruisers to react quickly to attack from missiles by firing intercepting missiles not only from the cruisers deck but also from the deck of other ships in the task force. Is that correct?

DOD Answer. The Aegis system will enable anti air warfare ships to detect targets at great distances, track many targets at once, react quickly, and fire intercepting missiles. The system will provide area air defense for the task force as well as self-defense for the Aegis ship itself. [Deleted.]

Senator THURMOND. Now Mr. Secretary, it was my understanding that the Aegis system, a very expensive air defense system against missiles (defends against missiles launched from subs, ships, planes, or ground sites) was designed for use in a high-threat area. Is that correct?

DOD Answer. That is correct. The Aegis system is designed for use in a high-threat area. It will have far greater fire power than any existing shipboard air defense system. Because of the extension of high threat levels to large areas of the ocean by Soviet anti-ship missile carrying submarines and long-range aircraft, it is vital that the Aegis capability be deployed rapidly and in significant numbers. The President's shipbuilding program accomplishes this.

Senator THURMOND. Quite frankly, I am an advocate of nuclear power for all major combatant ships. First of all, the capabilities provided by nuclear power cannot be approached by any vessel depending on oil for its operation. Second, by the time these ships are built and deployed in the late 1980's and 1990's, oil could very well be a highly expensive and critically short item. Such is the case today, but as a nation we have not yet faced up to this problem. Mr. Secretary, because nuclear propulsion is only adaptable to larger ships, we must recognize that considerable fuel will be needed to propel smaller fighting ships, support ships and aircraft. Would you comment?

DOD Answer. The military value of nuclear-powered ships is significant and widely recognized. It is valuable in some situations, less so in others. For example, the oil embargo during the 1973 Arab-Israeli War is often cited to demonstrate the vulnerability of oil-fired U.S. naval forces to hostile economic actions. However, what is often overlooked in this context is the fact that nuclear-powered ships would not have benefited the U.S. forces in the Eastern Mediterranean if a surprise attack by the Soviet forces had materialized. What would have been needed in that situation would have been more and better-equipped (not necessarily nuclear-powered) U.S. forces. This example shows that the military value of nuclear power varies with the situation, even for strike forces, and we must, therefore, balance a preference for nuclear powered warships with our need for greater numbers of combatants.

With respect to the second point, the problem is real, but should be put in its proper perspective. The Department of Defense uses about two percent of the oil consumed by the U.S. economy. Shortages of oil which would significantly affect our military forces would also probably cause fundamental changes to life in America as we now know it. The operations of our Navy are likely to be directed in the future, as today, toward deterring conflict and the threat to our sources of oil. Additional wartime requirements for the Navy can be met by an adequate stockpile, as has been recommended.

Even with significantly greater numbers of nuclear powered ships, military forces in general and naval forces in particular will still require large quantities of petroleum products to be able to engage in combat. For example, considering the fuel required for sustained aircraft flight operations—landbased and seabased—it is not logical to suggest that the availability of fuel for ships might be jeopardized in isolation from the equally important requirements for aircraft.

The Navy is currently investigating means of improving the endurance of conventionally powered ships. Such techniques as the use of gas turbines, combined cycles, and smaller engines for cruise with a back-up larger engine for maximum speed will lower fuel consumption and improve endurance. In addition, a Navy

energy plan is presently under development which will address alternate energy sources. These sources include coal/shale/tar sands, solar energy, hydrogen and others.

Senator THURMOND. If the Aegis system is developed for the high-threat areas, and we are paying this enormous expense to put it on a limited number of ships for high-threat areas, I would like to hear your reasoning as to why you favor placing it on conventional ships, which have to be replenished by slow and vulnerable oiler support ships?

DOD Answer. To begin with, the term "high threat area" is an imprecise one today, and it will be even more so in the future. We envision the Aegis system as being essential to task force operations in any geographical area in which land-based Soviet naval aviation can support surface combatant and submarine operations. An additional consideration is that the submarine-launched cruise missile threat is generally independent of geographic area. U.S. task forces will be made up of both nuclear powered and conventionally powered warships. By the time the Aegis ships are delivered to the fleet in numbers, we anticipate that Soviet naval aviation will include large numbers of Backfire aircraft, whose radius of action extends considerably beyond that of the Badger aircraft, the current mainstay of Soviet naval aviation. [Deleted.] We obviously cannot afford to be limited with respect to operating conventionally powered naval forces and convoys in these geographic areas.

The second basic problem with the "high threat area" approach is that all carrier forces require resupply of aviation fuel and ordnance regardless of whether the ships are conventionally or nuclear powered. Nuclear power mitigates the degree of need but does not eliminate it.

Senator THURMOND. Is it not true that the most difficult areas in which to deploy support ships are the high threat areas?

DOD Answer. Yes, if we define "high threat" as including simultaneous air, surface and subsurface threats. Gaining control of selected ocean areas—sea control, in short—is the Navy's most important task and is a prerequisite to any other task performed by naval forces. Thus, the areas in which support ships must deploy will first be secured by task force operations in the overall sea control effort.

Carrier task forces being resupplied would be with or ahead of the support forces giving considerable indirect support and, in the case of air attack, the damage inflicted on the attacking aircraft which engage support forces would be at least as great as if they were to attack the carriers directly. Additionally, our carrier task force would be virtually unopposed during the considerable period of time required by the enemy to locate and attack our replenishment forces and then reconstitute his attacking forces.

Senator THURMOND. How many Aegis ships does the Navy desire to support a carrier task force? (Answer is probably 2 per carrier.)

DOD Answer. The Navy has estimated that about 24 Aegis ships would be appropriate for a force level of 12 or 13 carriers. Recognizing that carrier task forces would include from one to four carriers, depending on the mission and the expected threat, the precise number and the geometry of Aegis ship stationing cannot be specified in advance. Roughly two Aegis ships per carrier in the force appear to be sufficient. The Navy is currently studying such considerations as the degree of task force coordination achievable with Aegis ships in the task force, with the objective of providing a basis for refining the number of Aegis ships to be eventually procured.

Senator THURMOND. I believe in the next few years we will have 4 nuclear carriers deployed. Yet the proposed program does not even provide enough nuclear cruisers to support the nuclear carriers. In other words, you are allowing for construction of 2 nuclear cruisers in the next 5 years, although you will have 4 nuclear carriers to support. Would you comment on this point?

DOD Answer. We presently have five nuclear cruisers. By 1985, when we will have four nuclear powered carriers deployed, we plan to have 10 nuclear powered cruisers in the fleet, including one equipped with Aegis. At that point, the fleet will also have 8 conventionally powered carriers, 21 cruisers, and 4 Aegis destroyers. The requested program is designed to introduce the Aegis system into the fleet rapidly, in a mix which matches the carrier force and improves overall Navy capability.

Senator THURMOND. Can you envision a future Secretary of Defense requesting construction of conventional carriers because we have in our Navy *conventional Aegis support ships*?

DOD Answer. The utility of nuclear power in large aircraft carriers is abundantly clear—flexibility, response time, and freedom from refueling constraints in

transit—and it is unlikely that such a proposal would be made on the basis of the projected availability of Aegis destroyers.

Senator THURMOND. Secretary Rumsfeld, now I would like to move briefly to cost and capability questions regarding the Aegis cruiser program we are initiating this year. It is my understanding the differences in cost between the *conventional* and *nuclear* cruiser is roughly \$500 million. For talking purposes I would like to use that figure if you do not feel it is too far off. Is that a good approximate figure?

DOD Answer. That is an approximate figure.

Senator THURMOND. Now if the nuclear cruiser costs \$500 million more, how much of that additional cost is the result of the greater weapons capability of the nuclear cruisers?

DOD Answer. Perhaps as much as half of the differential results directly from differences in weapons capability. The remainder reflects the fact that a nuclear powered ship is larger and requires more manpower than its conventionally powered counterpart.

Senator THURMOND. It is my understanding that the additional weapons carried by the larger nuclear platform increase the cost of the ship by about \$250 million. Thus, you are getting more capability with the nuclear cruiser and that is one reason the cost is higher. As an example, there are considerable differences between the weapon suite of the conventional cruisers and the nuclear cruisers which are:

Nuclear versus conventional

- | | |
|--|------------------|
| (a) One 8-inch gun..... | Two 5-inch guns. |
| (The nuclear cruiser covers 9 times the area with gun fire as [DDG-47].) | |
| (b) 8 cruise missiles..... | None. |
| (c) 16 Harpoons..... | 8 Harpoons. |
| (d) Missile launches—2 MARK 26..... | 2 MARK 26. |
| (The nuclear ship carries 45% more missiles because of larger size.) | |
| (e) Vertical life plane or helo..... | Helo only. |

While there are other points which could be made, these are the main differences. So when we say the nuclear ship costs more than we should also recognize that we get a great deal more capability with the nuclear cruiser. Would you comment? (Request insertion in the record of the House extract giving more detail on comparisons.)

[The information follows:]

EXTRACT FROM HOUSE ARMED SERVICES COMMITTEE, REPORT NO. 94-967, DATED MAR. 26, 1976 ON FISCAL YEAR: 1977 DEPARTMENT OF DEFENSE APPROPRIATION AUTHORIZATION BILL (P. 32)

COMPARISON OF CSGN AND DDG-47 MILITARY CHARACTERISTICS

Feature	CSGN	DDG-47	Difference/comments
Missile launchers.....	2-MK26 Mod 2.....	2-MK26 Mod 1.....	45 percent more missiles in CSGN.
Anti-ship missiles.....	16 HARPOON.....	8 HARPOON.....	Twice as many in CSGN.
Cruise missile.....	8 TOMAHAWK.....	None.....	CSGN has 5 times HARPOON range and can cover about 25 times the area.
Guns.....	1 to 8 inch.....	2 to 5 inch.....	CSGN can cover about 9 times the area with gunfire as DDG-47.
Aircraft.....	VTOL or Helo.....	Helo only.....	VTOL increases long-range targeting sensor projection.
Task Force coordination center and unit commander facilities.....	Yes.....	No.....	
Toxological protection.....	Yes.....	No.....	Provides isolation from chemical and biological attack.
SSES.....	Yes.....	No.....	Electronic intelligence and analysis system.
Air-blast resistance.....	Twice DDG-47.....		Increased protection against air-blast.
Propulsion.....	Nuclear.....	Gas turbine.....	Nuclear cores expected to last 15 yr, equivalent to 3,000,000 barrels of oil.
Fragmentation armor.....	Yes.....	No.....	Over 1,000 tons added to CSGN displacement.
Length.....	660 ft.....	529 ft.....	
Beam.....	77 ft.....	55 ft.....	
Displacement.....	17,210 tons.....	9,055 tons.....	
Manning.....	563.....	312.....	CSGN includes 73 embarked for air SSES, unit commander. DDG-47 includes 21 embarked for air, 1 flag officer.
Sonar.....	SQS 53.....	SQS 53.....	
Radars:			
2 dimensional.....	SPS 49.....	SPS 49.....	
3 dimensional.....	SPY 1.....	SPY 1.....	

Note: The committee is not convinced that the DDG-47 is a suitable AEGIS platform. Nor does it believe that the costly AEGIS system and associated weapons should be placed on a ship which is as vulnerable as the DDG-47. Considering the vast differences in military characteristics between the DDG-47 and the CSGN, we believe that, over the lifetime of the ship, the CSGN is the most cost-effective AEGIS platform.

DOD Answer. There is no question that the CSGN will be a capable, multi-purpose surface combatant. A number of such ships are needed to operate in nuclear carrier task forces and to increase the offensive capability of the fleet.

Also required are larger numbers of the somewhat less capable (and less costly) conventionally powered Aegis destroyer. It will provide absolutely essential anti-air warfare capabilities to carrier task forces for which there are insufficient CSGN's.

Senator THURMOND. Now the next point would be that the cost of oil to power the conventional cruiser during the life of the nuclear core, which is a part of the cost of the nuclear ship, would amount to about \$90 million. So we can say that a higher cost of the nuclear ship is reflected in the fact that you buy the fuel in the nuclear core whereas oil has to be bought for the conventional cruiser and support oil ships must be bought to support the conventional cruiser.

DOD Answer. That is generally true. The question of relative costs of nuclear powered ships and their conventionally powered counterparts has been studied and restudied without much change in the conclusion . . . which is, that you get more capability in a nuclear powered ship, and you pay more for it over the life-cycle of the ship. Comparing a CSGN and a DDG-47 by no means begins with equally effective alternatives. For example, the amount of energy in the long-life core of the CSGN would power the much smaller DDG-47 for more years than it will the CSGN, which makes the \$90 million cost figure cited meaningless. The point is that a mix of CSGNs and DDG-47's is clearly required and is affordable.

Senator THURMOND. Mr. Secretary, it is my opinion that the *conventional* ship is not a suitable platform for the Aegis system. Frankly, a costly system such as Aegis, designed to not only protect the ship on which located but also other ships in a taskforce from air attack in high-threat areas, should *not* be on a platform dependent upon oil replenishment. It is my belief that over the lifetime of these ships the nuclear ships, while slightly more costly, pay back many times in its capabilities. This would seem true especially when the Aegis system is designed solely for high-threat areas where replenishment ships would be very vulnerable. Would you care to comment on that observation?

DOD Answer. Over the past 50-60 years, each time we have added a new class of surface combatants to the fleet, we have put on it that combination of sensors and weapons which gives the ship the capabilities required by its mission. To add a new class of cruisers in the early 1980's which did not have Aegis, a cruise missile, a major caliber gun, and VTOL/helo aircraft capabilities would make little sense. To add a destroyer without giving it Aegis, Harpoon, rapid fire guns, and modern ASW systems would make little sense. Thus, it is both reasonable and cost-effective to continue a mix of highly capable and less capable surface combatants in the U.S. fleet of the 1990's.

Senator THURMOND. Mr. Secretary, the Administration is proposing a mix and I would imagine the main argument is the question of cost. It is a shame this country cannot afford to buy nuclear ships for major vessels such as the strike cruisers. In any event, it is my feeling the 5-year program which proposes 8 conventional ships and only 2 nuclear ships is very much out of balance. Why is a mix of say 6 nuclear and 4 conventional or maybe 5 of each not more in balance?

DOD Answer. The mix proposed in the first five year period of the preliminary long range shipbuilding plan results from many factors—the projected mix of aircraft carriers, the need to get Aegis into the fleet in significant numbers, the need to increase surface combatant force levels, and the funding constraints we expect to persist over the five-year period.

Senator THURMOND. Mr. Secretary, within a few years this country will have four nuclear attack carriers. The Navy says it needs two Aegis ships for each carrier task force. Yet, your plan would provide only two nuclear ships for four nuclear carriers. How can these *conventional* cruisers escort a nuclear carrier?

DOD Answer. Carrier task forces are, and will continue to be constituted to carry out their mission in the face of the expected threat. Navy plans call for carriers to be employed in task forces containing from one to four carriers. We own five nuclear cruisers today. By 1985 we should have four nuclear carriers and ten nuclear cruisers, one of which will be configured with Aegis. At the same point we will have eight conventionally powered carriers, 21 cruisers, and four Aegis destroyers. From this set of resources, we ought to be able to put together task forces which can continue to carry out their worldwide missions in the face of Soviet air, surface and submarine opposition. In those instances when conventionally-powered ships accompany a nuclear-powered carrier, they will be resupplied with fuel by the same replenishment ships that supply the carrier with aviation fuel, ordnance, and stores.

Senator THURMOND. Mr. Secretary, according to present plans, by 1986, we will have 6 nuclear carriers in the Fleet. There will be 8 aging Forrestal class carriers. The current mixed program would provide only a nuclear Aegis ships for the 6 nuclear carriers, and there would be 8 new conventional Aegis ships at a time when the Forrestal carriers would be approaching retirement. Do you feel it would not be a good idea to review the Administration proposal, based on this and other points I have raised this afternoon?

DOD Answer. Present plans will lead to five nuclear powered carriers by FY 1985. Present plans are also to extend the service lives of the Forrestal class carriers from 10 to 15 years beyond their planned retirement through the Service Life Extension Program. Moreover, we expect to employ our DDG-47's with task forces where there is no carrier as well as with carrier task forces. Present plans are also to accelerate technology efforts for advanced V/STOL aircraft in order to possibly move toward more numerous, somewhat smaller platforms for sea-based tactical air in response to the Soviet threat to sea control. The Aegis ship program has been reviewed with these plans in mind and the President, the Secretary of Defense, and the Chief of Naval Operations agree that the program continues to be sound.

Senator BARTLETT. Do you feel that the return on a major investment in a class of large, highly capable, expensive, nuclear-powered cruisers would be worthwhile, considering the drain which such a program would impose on efforts aimed at building an adequate number of surface combatants?

DOD Answer. The request for the strike cruiser is, of course, responsive to the intent of the Congress as expressed in Title VIII. The strike cruiser is a logical extension of the program we have followed during the past 10-12 years, adding highly capable nuclear powered warships to the fleet in a balanced mix with less capable, less costly conventionally powered ships. It will combine anti-air, anti-surface, and anti-submarine systems in a way which complements the capabilities of aircraft carriers and increases the total offensive power of the fleet. As your question implies, one of the reasons we are not requesting a higher building rate for strike cruisers is that the resources we expect to be available will have to be divided between a few highly capable ships and larger numbers of somewhat less capable surface combatants if we are to meet the total requirements for naval forces.

Senator BARTLETT. I recognize the fact that a carrier task force can project a large amount of power, however, are they not highly vulnerable in areas like the eastern Mediterranean or strategic straits around the world? Is there too much emphasis on the large aircraft carrier given the development of anti-ship missile capability?

DOD Answer. In today's environment, any group of ships is vulnerable in many areas of the world because of new targeting technology and the long range of land based aircraft which are armed with air-to-surface missiles. Strategic straits and confined water areas such as the eastern Mediterranean are dangerous areas for a task force until such time as the threat has been reduced by offensive sea control operations, operations best accomplished by the carrier task force.

We recognize the threat of the anti-ship missile, which is the reason the President wants to introduce the Aegis system into the fleet as soon as possible by constructing the DDG-47 and increasing the building rate of the FFG-7, whose missile system will also be effective against the cruise missile threat.

We also decided to add money to the R&D budget so as to develop new ship and aircraft technology which might permit the U.S. to supplement the capabilities of the carrier force in the 1990's. The need for sea-based air will continue, and we are looking at the potential of a future force mix of large-deck carriers and more numerous, somewhat smaller platforms that would carry advanced V/STOL aircraft.

Senator THURMOND. As I understand it, the President requested an expanded Naval shipbuilding program for consideration as a supplemental for FY 1977. Is that correct?

DOD Answer. You will recall that the Annual Defense Report indicated that the Department and the National Security Council would be reviewing the requirements and composition of the Navy for the 1980's and the 1990's during the coming months. The review was initiated at the President's request, and has reached the point where the President has been able to conclude that we must take certain steps to strengthen the fleet.

The first step we have taken as a result of the interagency study effort to date is to amend our FY 77 Budget request and to add four Guided Missile Frigates, one Fleet Oiler, \$350 million in long lead funding for a fourth Nimitz class carrier, and

\$200 million in R&D for new ship and aircraft technology which might permit us to develop new ships and weapons to supplement the capabilities of the carrier force in the 1990's. These are all additions to the previously submitted FY 1977 shipbuilding program and budget.

Senator THURMOND. Has the President acted on that recommendation?

DOD Answer. The Secretary met with the President and the National Security Council on May 1, 1976, on the shipbuilding issue. The President decided at that time that we must take these steps to strengthen the fleet of the 1990's. As a first step in this buildup, the President's proposals would add five additional ships (four Guided Missile Frigates—FFG-7's—and one oiler—AO) to those previously requested in the FY 1977 budget. Also proposed is \$350 million in long lead funds for a fourth Nimitz class carrier and \$200 million for accelerated development efforts in V/STOL aircraft and weaponry.

The National Security Council review of the shipbuilding program has not yet reached the point where decisions on the FY 1978 and outyear programs can be made.

Senator THURMOND. Based on your additional request today, I assume the President has acted on the Navy expanded program for the time being. Would you agree with that point?

DOD Answer. The expanded program for FY 1977 is that which has been presented to the Committee. The work of the Department and the National Security Council is still proceeding with respect to the proposals for FY 1978 and later years. It is expected that specific recommendations and the resultant Presidential decisions will be arrived at in the next few months.

Senator THURMOND. The Congress deserves to know what the Navy recommended to the President in this expanded program. Specifically, I would be interested in what the Navy recommended in a five-year expanded program in the following accounts:

- (a) Attack submarines;
- (b) Cruisers—conventional and nuclear; and
- (c) Aircraft carriers.

DOD answer. In the course of the National Security Council review of naval force requirements, the Navy made several recommendations regarding shipbuilding programs. In the areas of your interest, its most recent recommendation included the following:

Total ships fiscal year 1977-81

SSN-688	13	CV (SLEP) ¹	1
CSGN	4	CGN-9(C) ²	1
CSG	0	VSS	4
CVN	1	DDG-47 ³	8

¹ SLEP—Service Life Extension Program.

² Conversion of USS Long Beach to Strike Cruiser.

³ Conventionally powered AEGIS Destroyer.

Senator THURMOND. It is vital that we have the views of the Navy on these matters.

DOD Answer. The Chief of Naval Operations and the Secretary share the belief that, although our Navy today has a margin of superiority with respect to the Soviets, it is essential that we increase our rate of ship construction if we are to maintain that superiority into the 1990's. You can be assured that the Navy's views are accorded thorough consideration and given great weight by the members of the National Security Council and the President in arriving at final decisions on the force structure objectives and shipbuilding program that are recommended to the Congress.

Senator NUNN. The three major elements of the Soviet naval threat are submarines, surface combatants, and the Backfire bomber when employed in a maritime role. What is the potential contribution of land-based U.S. Air Force aviation in countering this threat? During the first 30, 60, and 90 days of a war with the Soviet Union, what percentage of Soviet surface combatants submarines and naval aviation could be destroyed by land-based USAF aviation, if its full potential for maritime reconnaissance, mining, and strike operations were utilized?

Admiral HOLLOWAY. The Air Force has, as collateral functions, responsibility to train forces to interdict enemy sea power, conduct ASW, protect shipping, and conduct aerial minelaying operations. Air Force aircraft operating from forward and CONUS land bases could augment Navy and Marine Corps air in conducting sea control operations if mission priorities so dictate. The long-range, aerial refueling, radar and guided munitions capabilities of land-based aircraft enable them

to be employed in ocean surveillance, tracking and prosecution of enemy surface ships. However, [deleted] ASW operations must still be conducted by Navy surface combatants, attack submarines and land- and sea-based ASW aircraft. Air Force tactical fighters also have the capability to counter the Soviet bomber threat in certain scenarios and geographic areas. A recent Navy-Air Force Memorandum of Agreement provided a Concept for Operations for USAF resources training to perform collateral functions. This memorandum presents the broad guidance necessary to enhance, through training, Air Force collateral functions capability to support naval operations at sea.

In general, naval forces which are designed and configured specifically to carry out maritime tasks are inherently more efficient in such tasks than other forces which are developed primarily for other missions. While Air Force aircraft could contribute to maritime tasks, the potential of the forces in a war with the Soviet Union must be considered in view of the availability of forces.

Since Air Force tactical force levels are developed for the primary mission of support for the land battle in Europe, particularly in the first 90 days of a conflict, Air Force tactical air would be wholly engaged in air superiority, close air support and interdiction missions to stabilize the battle area and halt a Soviet/Warsaw Pact advance into Western Europe. Also, Air Force strategic aircraft, such as the B-52 and FB-111, would probably continue to be assigned to strategic missions as a hedge against escalation of a conventional conflict. Therefore, Air Force land based aircraft would probably not be available to conduct maritime tasks such as surveillance, minelaying, strike operation or intercept missions.

If it can be assumed that Air Force aircraft would be diverted from the defense of the NATO central region and other areas, and would not be committed to strategic contingency plans; then they could be expected to contribute to the destruction and neutralization of some Soviet submarine, surface combatant and aviation units. However, the first 90 days of a war with the Soviet Union will be critical and will require the complete dedication of U.S. forces to primary missions. Given the large number of factors which would influence the effectiveness of individual units in a naval campaign, an accurate estimate of the percentage of Soviet naval units which could be destroyed by Air Force aviation has not been made. Among other variables such an estimate would be dependent upon the scenario, previous or concomitant attrition by U.S. and allied naval forces and Soviet strategy. In a maritime surveillance role Air Force aircraft could assist in locating, identifying and attacking Soviet surface units. Minelaying, whether by Air Force or Navy aircraft, is primarily a defensive, sea denial tactic. Mines sown at critical choke points could be expected to exact some attrition or at least hamper transiting Soviet surface combatants and submarines, but the percentage of destroyed or damaged units cannot be estimated with precision. Air Force aircraft could be effective in strike operation missions against ports and airfields supporting Soviet naval units.

If the Air Force were to utilize its full potential in the maritime area, it could make a significant contribution. However, we have not measured the contribution in terms of percentage of Soviet forces which might be attrited, because in a worldwide conflict with the Soviet Union the Air Force would be engaged in prosecuting its primary mission. In such a conflict the allocation of forces among competing demands will be determined by the National Command Authority.

Senator NUNN. In discussing the proper mix of U.S. general purpose naval forces pursuant to ASW operations designed to maintain control of Atlantic sea lines of communication in the event of war, I noticed that you omitted reference to our attack submarines and land-based patrol aircraft. A recent DOD study, however, concluded that these two components of our ASW capability would account for a projected [deleted] of all kills of Soviet submarines—despite the fact that they represent only 40% of total ASW operating costs and 23.2% ASW forces manpower. In contrast, it was estimated that carriers and other surface combatants, which consume 60% of ASW costs and 76.8% of ASW manpower would account for only [deleted] of the kills. Given the money and men invested in these four components of our ASW capability, is there not already a striking imbalance in the allocation of resources? Could you comment on this?

Admiral HOLLOWAY. In a North Atlantic protection of shipping scenario, attack submarines and maritime patrol aircraft are assigned a primary ASW mission. They occupy forward area patrols, choke point barriers, and conduct open ocean submarine intercept operations. Studies have shown that these ASW forces would exact high attrition before threat submarines could close to attack merchant shipping or naval task groups. Surface combatants and carrier ASW assets are primarily utilized in direct, close-in ASW roles for protecting high

value units. The measure of effectiveness for these ASW forces is not necessarily submarines killed. The primary measure of effectiveness, for example, in convoy protection is sealift supplies delivered. While submarines and patrol aircraft conducting independent operations would normally continue to prosecute known or suspected submarine contacts until a kill is exacted, escorting ASW forces will often be satisfied to force a submarine to abort its mission by driving it off or maneuvering the formation to evade the contact.

Although the submarine remains the primary open ocean threat, long range cruise missile equipped Soviet bombers pose an increasing threat to merchant shipping and naval task groups. Carriers and surface combatants must combat this threat. Submarines and maritime aircraft do not have an AAW capability. The submarine launched cruise missile is also a threat element which must be combated by surface combatants and carrier air assets. A further note on maritime patrol aircraft operations is that these efficient ASW platforms have no self defense capability. In order to conduct remote barrier operations, such as in the Greenland-Iceland-UK gap, land or sea-based fighter assets must maintain local air superiority.

Finally, although merchant ship protection against submarines is a vital aspect of the sea control function, surface combatants and carriers are multi-mission platforms which are required to conduct a broad range of operations to fulfill the Navy's sea control and power projection functions.

Senator CULVER. In response to a question from Senator Thurmond to General Brown on January 29, a 10-year projection of Soviet shipbuilding was provided to the Committee. Please explain the sources, DIPP and NIE, and tell me whether these projections are still the same.

DOD Answer. DIPP is the acronym for Defense Intelligence Projections for Planning. NIE is the abbreviation for National Intelligence Estimate. Both are official intelligence publications.

None of the projections have changed since January 1976.

Senator CULVER. Mr. Secretary, in testimony in response to my questions of Navy witnesses, I was informed that over the next four years, the Navy plans to strike 36 ships from the Naval Register—and sell 35 of these to foreign governments.—If we should be concerned about numbers, why not keep these ships?—and if they are too old and costly for us to operate, why should poorer countries be able to afford them?

DOD Answer. There are two primary reasons underlying the apparent anomaly. The first is that the missions, threat, and concepts of employment for U.S. and many foreign naval forces are entirely different. The U.S. Navy must be prepared to carry out a wide spectrum of missions against a technologically sophisticated Soviet threat which is world-wide in nature. In contrast, many foreign countries seek to carry out naval missions much more limited in scope and regional in nature, relying on U.S. military forces to counter the Soviet threat; this can be done with older, less sophisticated ships. The second reason is that the cost to maintain these ships in the operating forces markedly differs by country. A great deal of manpower is required to keep 30-year-old ships in operating condition. Manpower tends to be less expensive in foreign countries relative to the United States. On the other hand, the *skilled* manpower necessary to operate and maintain modern equipment simply is not available to many foreign countries which might prefer to procure newer ships.

[Senator Jake Garn's letter to Senator John C. Stennis on Minuteman III follows:]

U.S. SENATE,
Washington, D.C., May 6, 1976.

HON. JOHN C. STENNIS,
Chairman, Senate Armed Services Committee,
Russell Senate Building.

DEAR MR. CHAIRMAN: I greatly appreciated your personal offer to testify before your Committee this week on the Defense Department Authorization. Unfortunately, I was unable to arrange my schedule so as to be able to appear personally, but I take this opportunity to communicate my views on the Minuteman III program by letter.

After too much delay, in my opinion, the President has now transmitted to the Senate a request for continued funding of Minuteman III production. This action constitutes a reversal of the position taken in the budget request initially sent to Congress, a decision which I protested at the time.

We are currently producing five Minuteman III's per month in line with the Air Force program of providing a Minuteman system consisting of 700 Minuteman IIIs and 300 Minuteman IIs. At the present time, of the 1,000 Minuteman missiles in the ground only 550 are Minuteman IIIs equipped with multiple independently retargetable reentry vehicles (MIRVs). Some of the Minuteman IIs are as much as 10 years old and all have known deficiencies which have not been corrected because the original plan was to convert the total force to Minuteman IIIs.

The obvious superiority of the Minuteman III over the Minuteman II derives from the following characteristics: (a) Minuteman IIs are not hardened against dust and debris, while the Minuteman III is; (b) the reentry vehicle of the Minuteman III is hardened against electromagnetic pulse, thus protecting the warhead against electrical discharges that would accompany a missile attack against our silos; (c) Minuteman III is more accurate than a Minuteman II. In fact, it is the most accurate of all of our missiles including Poseidon and Trident. This is increasingly important as the Soviets increase their numerical lead in reentry vehicles; (d) Minuteman III can be retargeted in 36 minutes or less and the retargeting can be done through a computerized control buffer system rather than manually as is the case with the Minuteman II. This capability is particularly important in reaching time sensitive targets such as unfired missiles. Since most of the Minuteman IIs are probably aimed at such targets, time is of the essence; these advantages should be sufficient to justify continuation of the Minuteman III production program at least up to the level of 700 missiles if not to the 1,000 originally projected.

That would surely be the case if there were no numerical limits placed on missile deployment. However, even should we elect not to replace all Minuteman IIs with Minuteman IIIs, continued production of the Minuteman III booster and guidance system and their use on the Minuteman II missiles would improve those missiles significantly, thus adding to the flexible ICBM system we need to offset the production of four separate ICBM lines by the Soviet Union.

It was initially argued by the Administration that any additional deployments of Minuteman IIIs beyond the present level of 550 would require offsetting reductions in other MIRVed systems under the Vladivostok agreement of a limit 1,320 MIRVs. That argument assumed that the United States is constrained by the limits arrived at in Vladivostok. This is a complete misunderstanding of the real situation. The Vladivostok understanding has never been submitted to the Senate and has not been ratified and is, therefore, not binding upon this nation. Vladivostok was only a target toward which the present negotiations are working. It is critical that we maintain our flexibility in the event no agreement is reached, and the Administration's request now takes note of this possibility.

However, even if the Vladivostok understanding were binding, the MIRV limit of 1,320 would not effect deployment of 700 Minuteman IIIs until 1982 at the very earliest. At the present rate of Minuteman II replacement, we would reach the 700 level by the end of 1978. At that point we would also have 496 Poseidon missiles for a total of 1,196 MIRVs. At that time the Trident is scheduled to come on stream, but not until almost the end of 1982 do its missiles push us past the 1,320 MIRV ceiling. It could be that we would not reach the level of 1,320 until 1984 or 1985.

Should we, however, reach an agreement on MIRVs of 1,320 or some such number, and should the Trident appear on schedule, it would still be to our advantage to continue Minuteman III production at the present time. The reason is that when we do reach the limit, it will be possible to use the booster and guidance systems to upgrade the Minuteman IIs, giving us a vastly improved Minuteman system throughout.

Now let me make my position as clear as possible. In my view it would be best to move as rapidly as possible to a Minuteman mix of 700 IIIs and 300 IIs. However, if for some reason that is not found to be possible, let us by all means keep the production line open by producing Minuteman III boosters and guidance systems for the general upgrading of the Minuteman force. Such a course would require Fiscal Year 1977 appropriation of approximately \$322 million which would keep the production line open at the present rate of 5 missiles a month, the minimum number that can be produced.

The present Administration request is approximately in line with this recommendation. I understand that the re-programming of buy-out money in the FY 1976 budget will be a part of the new request, and that that action can now go forward. Immediate action is needed if a shut-down in the production line is to be averted before the FY 1977 money becomes available.

In summary, Mr. Chairman, I support the Administration's request, and hope that this Committee and the entire Senate will act on it as expeditiously as possible.

Sincerely,

JAKE GARN.

The CHAIRMAN. We have kept you gentlemen long enough. Thank you very much.

[Whereupon, at 4:52 p.m., the committee recessed, subject to the call of the Chair.]

MILITARY PROCUREMENT, FISCAL YEAR 1977

WEDNESDAY, MAY 5, 1976

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

FISCAL YEAR 1977 NATIONAL SHIPBUILDING PROGRAM

The committee met, pursuant to notice, at 9:40 a.m., in room 212, Russell Senate Office Building, Senator John C. Stennis (chairman) presiding.

Present: Senators Stennis, Symington, Jackson, Nunn, Culver, Hart, Leahy, Thurmond, Goldwater, Taft, and Bartlett.

Also present: T. Edward Braswell, Jr., chief counsel and staff director; Charles J. Conneely, George H. Foster, Jr., John A. Goldsmith, Edward B. Kenney, Don L. Lynch, Robert Q. Old, James C. Smith, Francis J. Sullivan, and George F. Travers, professional staff members; W. Clark McFadden, counsel; John T. Ticer, chief clerk; Phyllis A. Bacon, assistant chief clerk; Doris S. Cline and Christine E. Cowart, clerical assistants; and Roberta Ujakovich and Louise Hoppe, research assistants; Peter Hughes, assistant to Senator Byrd; Jeffery Record, assistant to Senator Nunn; Charles Stevenson, assistant to Senator Culver; Doug Racine, assistant to Senator Leahy; Will Ball, assistant to Senator Tower; Bill Lind, assistant to Senator Taft; and Fred Ruth, assistant to Senator Bartlett.

The CHAIRMAN. Gentlemen, our committee will come to order.

Admiral Rickover, we are glad to have you here. Your testimony is always valuable. We need your help here in writing up this bill. Without reviewing it at length, we have the original administration budget request, and the next thing we have is the House bill. Then the next thing we have is an added administration request which was covered yesterday by the Secretary of Defense.

Senator Taft has made a special study of Navy ships, and in this connection has made certain proposals.

We need you here, and we want you here. You are always helpful. You have a prepared statement, I believe.

(7195)

STATEMENT OF ADM. HYMAN G. RICKOVER, USN, DIRECTOR, NAVAL NUCLEAR PROPULSION PROGRAM, ACCOMPANIED BY DAVID T. LEIGHTON, PROGRAM MANAGER FOR SURFACE SHIP NUCLEAR PROPULSION, NUCLEAR POWER DIRECTORATE, NAVAL SEA SYSTEMS COMMAND

Admiral RICKOVER. Yes, sir. I have presented copies of the prepared statement to the committee.

The CHAIRMAN. You know your mind and you know your subject. Would you rather have a closed hearing to get it over to the committee or an open hearing?

Admiral RICKOVER. I would rather have a closed meeting.

The CHAIRMAN. To get into it the way you want to you would rather have a closed hearing?

Admiral RICKOVER. Yes, sir.

The CHAIRMAN. If we do it that way, would you be willing to then hold an open hearing, even though it might be partly repetitious?

Admiral RICKOVER. Yes, sir.

The CHAIRMAN. Senator Culver.

Senator CULVER. Mr. Chairman, if and when that comes in the form of a motion I think I will oppose it. I think we should have as much open testimony on the subject given the degree of public confusion, the enormous importance to the taxpayer, and the expertise of this witness. I think it should be shared with the country. I think that wherever we are going to eliminate confusion and get some meaningful consensus in naval policy in this area it is imperative to have the widest public debate. If and when that comes up for a motion I will oppose it for that reason.

I think that any of the statements or questions that are of a classified nature—I don't know if this is what Admiral Rickover will cover, but if we come to that we can move into a closed session. But I think we should have an open session.

The CHAIRMAN. Senator Thurmond, do you want to respond?

Senator THURMOND. Mr. Chairman, I feel somewhat like the Senator from Iowa. As much as we can give the public to show the importance of this program it should be done. But I do not think that we want to go into any matters that will affect our national security. My thinking would be to keep an open session. Then if the Admiral feels that the answer to any question affects the national security he need not answer that question. Then we could go into closed session for matters that he wishes to disclose to the committee.

The CHAIRMAN. Admiral, I have heard you testify many times. You are very penetrating in your analyses.

Senator THURMOND. I am sure he will tell us when an answer would jeopardize the national security.

The CHAIRMAN. We don't have enough Senators here to really pass on whether it will be open or closed. So if we start open will you take responsibility of just volunteering that you don't think any particular matter ought to be disclosed in open session?

Admiral RICKOVER. I will, sir.

The CHAIRMAN. I am not dodging the responsibility, but you are the man to carry that. Are you willing to?

Admiral RICKOVER. Yes, sir.

The CHAIRMAN. So we will start with an open hearing. And at some point we will give the Admiral a chance to testify in a closed hearing, if he desires to.

Is that agreeable to you now, Senator Culver?

Senator CULVER. I would like to wait until we finish the open session.

The CHAIRMAN. You are not willing now to say whether or not you would agree to a closed session if he wants it when we finish the open?

Senator THURMOND. That would be on the points that he feels should be closed?

Senator CULVER. I think it should be restricted to things that are of a classified nature.

The CHAIRMAN. Naturally it would fall that way.

Senator CULVER. It doesn't normally fall that way in terms of an open and closed session in Congress.

The CHAIRMAN. This one will, because we put it that way. After an open session, if he stills wants to testify I think he should testify on matters that he hasn't brought out in open session. Will it be all right with you then?

Senator CULVER. I would like to reserve judgment, Mr. Chairman.

The CHAIRMAN. All right.

Admiral, you have heard the situation. We will ask you to proceed in open session. As with other witnesses, you can read all your statement, or you can put it in the record and summarize it for us, whichever you wish. We do want you to speak out.

Admiral RICKOVER. Thank you, Mr. Chairman, for your courtesy.

I think for the purpose of saving time I do not desire to read my complete prepared statement. It will take about an hour, and you don't have time to do that. I do hope that you will read it if you get the opportunity.

The CHAIRMAN. We will have it read by the staff, and read it ourselves, too.

Admiral RICKOVER. I hope you will, because it presents my thoughts covering many years.

I have prepared a summary of my statement which I could read. On the other hand, to save your time and to get to the points directly, if it is satisfactory with you, sir, I would like to address the points which are at issue between the House bill and the administration's bill. I think that might be the most productive way of devoting my time, because I know that you are all busy.

Senator THURMOND. You want your whole statement put in the record?

Admiral RICKOVER. Yes, sir, I would appreciate putting the entire statement in the record.

Senator CULVER. Mr. Chairman, I think the summary might be very useful. How long would it be?

Admiral RICKOVER. I have 20 pages, so it would probably take about 25 minutes.

Senator CULVER. The full statement would take an hour?

Admiral RICKOVER. The full statement would take an hour, and this one would take close to one-half hour. My understanding was that the time of this committee was limited.

Senator CULVER. I think the summary would be useful.

The CHAIRMAN. I think he is going to get into it right now. Put the whole statement in the record, and then give us the summary.

Admiral RICKOVER. Instead of addressing the specific issues you want the whole summary?

The CHAIRMAN. Yes; that will be fine.

Admiral RICKOVER. I deeply appreciate this opportunity to state my views concerning the naval shipbuilding program as it affects the naval nuclear propulsion program.

You know, I am much better not reading anything, I think I am more effective responding to questions, but I will do it this way.

I delivered to the committee staff yesterday copies of my unclassified statement which addresses the issues in this year's shipbuilding program which affect the naval nuclear propulsion program. I would appreciate it if you would include my prepared statement in the record.

[The prepared statement follows:]

STATEMENT
of
ADMIRAL H. G. RICKOVER, USN
DIRECTOR
NAVAL NUCLEAR PROPULSION PROGRAM

BEFORE
THE ARMED SERVICES COMMITTEE
UNITED STATES SENATE

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STATEMENT OF ADMIRAL H. G. RICKOVER, USN, DIRECTOR, NAVAL NUCLEAR PROPULSION PROGRAM, BEFORE THE ARMED SERVICES COMMITTEE, UNITED STATES SENATE

Mr. Chairman, I deeply appreciate this opportunity to state my views concerning the naval shipbuilding program as it affects the naval nuclear propulsion program.

INTRODUCTION

I have been associated with the naval nuclear propulsion program for more than a quarter of a century during which time there have been: 13 Secretaries of Defense; 15 Deputy Secretaries of Defense; 12 Directors of Defense Research and Engineering, including former positions of Chairman, Research and Development Board and Assistant Director for Research and Engineering; 8 Assistants to the Secretary of Defense for Atomic Energy, including former Chairmen of the Military Liaison Committee; 14 Secretaries of the Navy; 15 Under Secretaries of the Navy; 11 Chiefs of Naval Operations; 12 Vice Chiefs of Naval Operations; 5 Chiefs of Naval Material since the position was established in 1963; and 10 Commanders of the Naval Sea Systems Command, including the former positions of Commander, Naval Ship Systems Command, and Chief, Bureau of Ships.

On the average, each of these 115 key officials in the approval chain held his position a little over two years. In any given year, about 4 of these 10 top positions had a new incumbent. Since my own tour of duty in this program spans this entire period, I undoubtedly have a different view of the events which have occurred than do the legions of officials I have mentioned, and their numerous subordinates--all of these constantly rotating officials had to approve my requests before I could proceed with my work.

Mr. Chairman, your tour of duty and that of several of your illustrious colleagues also spans this entire period, so I am sure you fully understand this point.

In some of my remarks, I may express views contrary to those of my superiors in the Navy and those in the Department of Defense. You are aware that there have always been basic differences between my opinions and those of my superiors. I must make it clear that I claim no superior wisdom. Furthermore, my superiors have more responsibilities and problems different and more onerous than mine, and these responsibilities and problems may require different solutions than I propose. I make no claim that my views are right and theirs are wrong. I can only say what I think and what I believe.

My superiors have no obligation to justify their positions to me. Therefore, I wish to make it clear that I do not represent myself as knowing or understanding the full basis for their decisions. But, because I have held a responsible position for many years, I have an obligation to give you my own detached assessments. I cannot permit political or personal considerations to prevent me from discharging this obligation, nor can I permit what has been called the "decencies of human relations" to control my relationships with Congress. In that context, I will present to you my candid opinions concerning the issues before the Congress which affect the naval nuclear propulsion program.

MISSION OF THE UNITED STATES NAVY

Today, the Western world depends on the strength of the United States. Short of all-out nuclear war, this strength depends on the ability of the U. S. Navy to maintain the sea lines of communication to our allies. If the Soviets could prevent our Navy from assuring the flow of men and material across the seas, none of our armed services could conduct overseas military operations in any area where the Soviets choose to challenge us.

In this regard, it must be borne in mind that the mission of the United States Navy to ensure free use of the seas so as to defend us and our maritime allies is much more difficult than the mission of the Soviet Navy which is to deny us the free use of the seas. It is much more difficult to forge a chain than it is to cut a link.

There are those who dismiss as unrealistic the possibility of a direct confrontation between American and Soviet naval power. I think events may well show they are wrong, unless we build naval forces which can clearly counter the best Soviet naval forces. In the 1962 Cuban missile crisis, the U. S. with superior naval power and superior nuclear weapons, was willing to confront the Soviets with both. From now on, we are faced with the Soviets having at least equal, if not superior, nuclear weapons capability. If we also allow them to attain superior naval forces, why should we assume that they will not confront us with this naval power to obtain their objectives in areas where they consider we will not be willing to risk our own annihilation? In short, failure on our part to provide naval forces which can stand up to the best naval forces the Soviets develop could lead to our having to give in on all issues for

which we are not willing to go to nuclear war.

SOVIET NAVAL THREAT

The Soviets have made rapid progress in the design and construction of nuclear submarines in particular, as well as the rapid expansion and improved capabilities of their surface combatant fleet. As a student of naval history, I am concerned that there has never in peacetime been anything comparable to the current growth of Russian naval power. We need to view these efforts critically because such actions appear to be inconsistent with, if not a repudiation of, efforts to reduce tensions between the superpowers..

Unlike the United States, the Soviets are spending more of their military budget on procurement, research and development, and operations, than on manpower. While over 50 percent of the U.S. defense budget pays for personnel, only about 35 percent of the Soviet budget is required for personnel costs. The result is that in recent years, many new types of weapons systems have entered the Soviet arsenal, including new design planes, tanks, and ships.

From 1968 through today the Soviet Navy has increased both in numbers of ships and in capability. For example, the number of nuclear submarines in the Soviet fleet increased from 61 in 1968 to 135 today, surpassing us in this area in 1970. During the same period, the number of Soviet major surface combatants increased from 200 to 228 while the number of U. S. major surface combatants fell from 350 to 173. While their numbers continue to increase, ours continue to decline.

The U. S. Navy is scheduled to drop 27 ships from the active fleet in fiscal year 1976, including 2 carriers, 3 destroyers, and 1 submarine. The U. S. Navy active fleet level stands at 478, the lowest since 1939.

Looking at the submarine situation, specifically, the comparison is particularly ominous. Currently the Soviets have a total of 330 submarines, consisting of 135 nuclear powered and 195 diesel powered, all of which have been built since World War II. The total U. S. force is 116 submarines with 106 nuclear powered and 10 diesel powered.

In the critical area of strategic submarines, of the 55 Soviet nuclear ballistic missile submarines in operation, 34 are YANKEE Class submarines which are equivalent to our 41 POLARIS and POSEIDON submarines except they are all newer than ours.

The Soviets also have at sea 11 ships of their new DELTA Class ballistic missile submarines, with more under construction. These ships carry the 4,200 mile missile which means that from their operating areas in the Barents Sea and Northern waters they can cover the entire United States and most of Mexico. In total the Soviets have more nuclear powered ballistic missile submarines than we do and they are building new ones at a rate of about 6 a year compared to our TRIDENT rate of 1 or 2 per year.

In the area of attack submarines the Soviets have a total of 190 units compared to our 75. Of their total 40 are nuclear powered while 65 of the U. S. units are nuclear.

However, Russia has 65 additional submarines armed with the unique capability of firing cruise missiles. Of these 65 units, 40 are nuclear powered. The U. S. does not have any submarines capable of firing cruise missiles, although our Navy is developing a version of the HARPOON missile which will be capable of being fired from submarine torpedo tubes.

The Soviets have the largest and most modern submarine yards in the world. They are credited with a nuclear submarine production capability of 20 ships a year on a single shift basis. While not fully utilizing this vast building capacity, in 1975 they completed 10 submarines while we completed two. As late as 1966, the Russians had only two new construction yards building nuclear submarines; today they have four with this capability and further expansion of such facilities is currently in progress.

At present, while our POSEIDON conversions are going on, the maximum U. S. capacity to build nuclear submarines is less than half that of the Soviets. Upon completion of these conversions--about 1977--our present capacity would still be far below theirs.

Of even greater concern than total numbers is the fact that since 1968 the Soviets have introduced over 9 new designs, or major modifications in design, besides converting older designs to improve their capabilities. They have introduced significantly improved versions of their attack, cruise missile, and ballistic missile nuclear submarine designs. In the last 8 years they have introduced more new submarine designs than have ever been put to sea, during a comparable period, in all of naval history. The U. S., on the other

hand, has introduced only two new design submarines in this period. This comparison should not be surprising since we spend less than 20 percent of our naval budget on submarines while the Soviets spend approximately 40 percent.

The trends in the surface navy are also of concern. Today the Soviets have more major surface combatants than we, and many of their ships carry surface-to-surface missiles, which our ships do not yet have. As of February of this year the Soviets had 229 major combatants compared to our 172. Since 1962 the Soviets have built 800 major and minor surface combatants, mine warfare and amphibious ships, while the U. S. has built 167, or less than one-fourth as many.

In the 8 years from 1968 through 1975 the U.S. has built 55 major surface combatants greater than 3000 tons, while the Russians built about 35. But only 5 of the U.S. combatants are greater than 4100 tons while about 25 of the Russian ships are greater than 4100 tons. Most of these Russian ships have anti-submarine, anti-aircraft and anti-ship capability. All have missiles. Of the 50 U.S. ships less than 4100 tons, 46 were the FF 1052 Knox Class which is designed solely as an anti-submarine ship and is a marginal combatant. Approximately 9 of the Russian ships that are less than 4100 tons are all of the Krivak Class which is probably the most heavily armed and most capable warship of its size ever built.

The greater armament and speed of the Krivak Class frigate compared to the FF 1052 Class is shown in the following table:

	KNOX (U.S.)	KRIVAK (U.S.S.R)
Displacement	4100	3800
Propulsion	single screw steam	twin screw gas turbine
Speed	27	Over 30
Guns	1-5"	4-3"
ASW	1-ASROC	2-ASW rocket launchers
	4-Torpedo tubes	8-Torpedo tubes
	1-Helicopter	1-Helicopter pad
Anti-Air	Point Defense Missile*	1-Twin launcher
Anti-Surface	NONE	1-Quadruple launcher

The five U.S. ships larger than the FF 1052 Class built in the years 1968 through 1975 were the conventional aircraft carrier JOHN F. KENNEDY, the nuclear carrier NIMITZ, the nuclear-powered guided-missile cruisers CALIFORNIA and SOUTH CAROLINA, and the gas turbine powered SPRUANCE, DD963, ASW destroyer. The approximately 25 major surface combatants built by the Soviets in this period larger than the U.S. FF 1052 Class include the KIEV Carrier, a MOSKVA Class helicopter ASW carrier. The rest were guided missile cruisers and guided missile destroyers larger than the KRIVAK Class.

The first of a class of large new Soviet ships, designated the KIEV Class aircraft carrier, is operational, another has been launched, and one more is under construction. They are larger than the Soviet MOSKVA Class helicopter carrier and on the order of the size of our EEESEX Class carrier.

*Installed on 30 of 46 units

Overall, I believe that our surface Navy is still more powerful because of our aircraft carriers. However, even this is not reassuring since, as a land power, they do not have to depend on sea lines of communication to conduct military operations. As a maritime power, we are dependent upon being able to control sea lines of communication in order to conduct military operations overseas. The mission assigned to our Navy is a far more difficult task than the Soviet Navy mission of preventing our Navy from maintaining such control. In light of the developments I have just described, it should be apparent that the threat we face from Soviet naval expansion is real and ominous.

TRIDENT

There is general acceptance that our nuclear powered ballistic missile submarines are a vital element of our Nation's deterrent to all-out nuclear war. The TRIDENT Program proposed by the Department of Defense for Fiscal Year 1977 includes construction funds for only one ship - the fifth submarine of the class. Originally the TRIDENT Program was planned to include construction of three submarines every year after the lead ship. Last year, two submarines were planned for Fiscal Year 1977, but the program was stretched out again, resulting in added costs. The Navy has estimated that the program stretchout proposed this year will add about \$225 million to the cost of the first ten TRIDENT submarines.

As I discussed earlier, the Soviets have deployed DELTA Class ballistic missile submarines capable of firing 4,200 mile missiles. In a sense, the Soviets are already operating their equivalent to our TRIDENT submarines.

In comparison, our first TRIDENT submarine will not deploy until 1979. The existing Soviet missile capabilities increase the threat to our land-based strategic forces and increase the reliance we must place on our sea-based strategic forces.

The TRIDENT submarines will enable the United States to maintain a secure and viable strategic deterrent in the face of the increasing Soviet threat. The longer range of the TRIDENT missiles will permit basing our ballistic missile submarines in the United States--no foreign basing will be required. This will eliminate the vulnerability of our ballistic missile submarine force

to international political action that could deny us the use of foreign bases. This is extremely important because we are always in danger of losing our foreign bases. For example, the treaty recently negotiated with Spain calls for removal of our ballistic missile submarines from the base in Rota, Spain, in three years.

The TRIDENT submarines will have increased survivability because they are being built with all the latest technology. They will be more difficult to detect than our existing POLARIS and POSEIDON submarines because the TRIDENT submarines will be quieter and the longer range missiles will give the submarines 10 to 20 times more ocean area to hide in. Our existing POLARIS and POSEIDON submarines are noisy compared to current standards. They were all built with the technology of the 1950's. Quieter submarines are necessary to decrease the probability of detection and ensure the survivability of our seaborne strategic deterrent.

The POLARIS and POSEIDON submarines are wearing out and we must plan now for an orderly construction program to provide replacements. I believe Congress understands the importance of our ballistic missile submarine force as a deterrent to nuclear war. I recommend that the Committee not allow more delays in this program, which is vital to our national survival.

GENERAL PURPOSE NAVAL FORCES

The bulk of our naval ships, our general purpose forces, are designed to carry out naval missions in conflicts short of all-out nuclear war. About half these are submarine and surface combatants designed to fight in areas of high threat; they are our naval strike force ships. The other half are assigned to non-strike force functions; such as underway replenishment groups, amphibious assault forces, convoy escorts, and support ships, which service the fleet. I have never recommended, and I know of no serious consideration ever having been given to providing nuclear propulsion for ships in the latter categories. Therefore, I will confine my comments to major combatants to be built for naval strike forces.

SSN 688 CLASS ATTACK SUBMARINES

Our nuclear powered attack submarines are the best anti-submarine warfare weapons system we now have. In FY 1975, the building rate for nuclear attack submarines was reduced from five per year to five every two years. Because of fiscal constraints, the planned building rate starting in FY 1978 was recently reduced further to two per year. Considering the rapidly improving quality and expanding number of Soviet nuclear submarines, I consider this to be an inadequate building rate. I have repeatedly recommended that we restore the building rate to a minimum of five ships per year.

If this building rate were approved, the Navy would probably have to increase its submarine building capacity to include yards other than the two currently engaged in submarine construction.

Current SSN construction status at Electric Boat and Newport News indicates that capacity is available to construct the FY 1977 SSNs. Electric Boat is currently in a more favorable position to achieve earlier schedule completion dates for the FY 1977 SSNs in view of other SSNs under construction under prior year contracts. Electric Boat Division has increased their facilities to be able to build two Tridents per year plus three SSN 688 Class submarines per year. Newport News is facing a reduction in their workload after FY 1978 if additional ship construction contracts are not awarded before that time. If for any reason the situation at these two yards deteriorated and their capacity to construct these submarines was not achieved, then the Navy would still have the alternative of moving to a third source for these SSNs.

For example, recently an Ingalls' Shipbuilding Division representative informally advised NAVSEA that their shipyard intended to submit a letter shortly expressing interest in re-entering the nuclear attack submarine construction field. Also, the Deputy Secretary of Defense on 21 April 1976 advised the Navy that "it would seem prudent to consider allocating the three SSNs (688 Class) of the FY 1977 program to a Naval shipyard." The introduction of Ingalls and/or a naval shipyard into the SSN 688 Class building program would probably result in an increase in construction duration and cost for any SSNs built at these shipyards. However, in any case, there is sufficient capacity to build the FY 1977 SSN's. The SSN 688, the first ship of the new class of high speed attack submarines, will be delivered this summer. Twenty-eight ships of this class are under contract. The fifth ship, the MEMPHIS, was launched last month. I am convinced that when these ships join the Fleet, they will be in great

demand to carry out many high priority missions.

ADVANCED DESIGN SUBMARINE NUCLEAR PROPULSION PLANT

The proposed Defense Department Fiscal Year 1977 budget includes \$12.581 million to continue development of the Advanced Design Submarine Nuclear Propulsion Plant. Development of this plant will enable the Navy to design various improved submarine configurations incorporating new weapon systems, advanced sonars, and other features while increasing the submarine's performance capabilities compared to our existing designs.

SURFACE WARSHIPS

Aircraft carriers and AEGIS fleet air defense ships are the only other major combatants currently planned to be built for naval strike forces. These ships are designed to fight in the areas of highest threat and will form the backbone of our first line naval strike forces. Considering the difficulties of providing logistic support in the areas of highest threat, in my view it is essential that our first line warships be given the mobility and flexibility that only nuclear propulsion can provide. The United States has given up any possibility of matching the Soviet Navy in numbers of ships; therefore, our only hope to be able to carry out our naval mission in the areas of highest threat is superior ships. In my opinion, in the 1980's and beyond, in any area where the Soviets challenge us with their best naval forces, we will need all-nuclear carrier task forces if we are to be able to conduct sustained offensive operations.

The decisions currently under consideration concerning whether or not to proceed with a nuclear carrier building program and to what extent nuclear propulsion will be provided for AEGIS ships are of fundamental importance to the future of the U.S. Navy.

OPPOSITION TO NUCLEAR PROPULSION BY SYSTEMS ANALYSTS FOR 25 YEARS

The issue of whether or not to provide nuclear propulsion for major surface combatants has been debated at length ever since the design of the first nuclear powered aircraft carrier was started in 1950. Over the past 15 years when the Navy recommended new major combatants for strike forces, in most cases the Navy initially recommended that the ships be nuclear powered. Historically, the systems analysts in the Office of the Secretary of Defense and the Office of Management and Budget succeeded in getting various Secretaries of Defense to "persuade" the Navy to change their recommendations so as to drop their request for nuclear propulsion for many of the ships concerned.

For example, the Navy initially recommended that the carriers AMERICA and KENNEDY, which followed the nuclear carrier ENTERPRISE, also be nuclear powered. However, by the time the budget requests reached Congress, the Navy witnesses dutifully testified that these carriers should be built with conventional power. The Navy was "persuaded" to do this by convincing them if they persisted in recommending nuclear propulsion for these ships, they would not get the ships at all. Similar "persuasion" resulted in the Navy changing its request for a nuclear powered strike cruiser, CSGN, in the FY 1977 shipbuilding program to the current "Navy request" for a non-nuclear AEGIS ship, the DDG-47.

The justification for providing nuclear propulsion for major combatants has been documented in detail through analysis, the military judgment of senior naval commanders, and experience in the Fleet. The systems analysts in opposing

nuclear propulsion have relied on the argument that since nuclear propulsion costs more, conventional ships should be built instead. Nowhere in their arguments do the analysts address the difficulty the Navy can expect to encounter in providing and delivering oil to its major combatants in high threat areas. They base their analyses on the assumption that propulsion fuel can be delivered readily whenever and wherever needed.

The cognizant Congressional Committees have studied this matter in great detail over a period of many years. It was the Congress, of course, that overrode the cost analysts arguments to get the nuclear submarine program established in the first place. In fact, the Joint Committee on Atomic Energy arranged to buy the nuclear propulsion plants for the first two nuclear submarines, the NAUTILUS and the SEAWOLF, with Atomic Energy Commission funds, since the Department of Defense refused to initiate the nuclear submarine program. Congress has had to step in many times since to keep the nuclear submarine program going. For example, in 1968 the analysts had persuaded the Secretary of Defense not to build any more nuclear submarines after FY 1970. The Congress overrode this Department of Defense position and established the SSN 688 nuclear attack submarine building program based on the investigations conducted by the Senate Armed Services Committee and the Joint Committee on Atomic Energy.

The NIMITZ Class nuclear carriers and the TRUXTUN, CALIFORNIA, and VIRGINIA Classes of nuclear cruisers evolved from similar arguments between Congress and the Department of Defense. This argument culminated in enactment by Congress two years ago of Title VIII of the Department of Defense Appropriation Authorization Act, 1975, which established as a matter of law

that the policy of the United States is to provide nuclear propulsion for major combatants built for naval strike forces. The systems analysts, of course, do not accept that policy and will continue to do anything they can to circumvent it.

LIFE CYCLE COST COMPARISON OF NUCLEAR AND CONVENTIONAL CARRIER TASK GROUP

It is true that nuclear surface warships cost more than conventional ships. I don't know why anyone would expect to get the tremendous increase in military capabilities provided by nuclear propulsion without having to pay something for it. However, the most recent cost studies performed by the Navy's Systems Analysis Division, OP-96, show that the overall lifetime cost of an all-nuclear carrier task group is about the same as that of an all-conventional task group. This study compared the total life cycle peacetime cost of two carrier task groups as follows:

<u>NUCLEAR</u>	<u>CONVENTIONAL</u>
1 NIMITZ Class carrier	1 KENNEDY Class carrier
1 CSGN	1 CSG
3 CGN 38 Class, which have 2 missile launchers	3 CG 26 Class, modified to have 2 missile launchers
	2 DD 963 Class

The nuclear carrier carries 50 percent more ammunition and almost twice as much aviation fuel as the conventional carrier. The weapons systems in both forces were assumed to be the same, except the conventional force has two DD 963's extra. The undiscounted life cycle cost of the nuclear force was calculated to be 1.3 percent more at today's fuel oil prices, and 1.9 percent less if the price of oil doubled, all other things being constant. Thus, the two task forces are, for all intents and purposes, equal cost forces in total life cycle cost.

The question of the value of the markedly increased capabilities of the all-nuclear task group compared to the conventional task group then depends on the judgment as to whether the increased offensive capability and mobility of the all-nuclear force is worth the cost of two DD 963 Class ASW ships. In making this judgment, it should be recognized that the entire conventional force would be totally dependent at all times on a secure source of propulsion fuel. Further, about 15 percent of the time one of the six conventional escorts would be off station for refueling by the carrier (or an oiler which would accompany the force). The vulnerability of the whole force would be increased during this period due to restrictions on course and speed during refueling. If the carrier has to fuel the escorts, the carrier operations are restricted while an escort is alongside. If an oiler accompanies the force, then the whole force is restricted to the speed capabilities of the oiler, and the carrier escorts must also protect the oiler.

If it is necessary to retire from the high threat area for replenishment, the nuclear force would not have to replenish until its larger capacity of aviation fuel and ordnance had been expended; whereas, the conventional force would have to retire for replenishment of ship propulsion fuel even if it had not expended its smaller amount of aircraft fuel and ordnance. In this regard, of the total fuel expended by a conventional carrier task force, one-third is used by the carrier, one-third by the escorts, and one-third by the aircraft during intense operations. The carrier and the escorts, of course, continue to use up their fuel and require replenishment even when aircraft are not being used at a high tempo.

A few days before he retired as Chairman of the Joint Chiefs of Staff, Admiral Thomas H. Moorer, who probably has had more experience in command of carrier task groups than any living naval officer, commented on Title VIII in a memorandum to the Secretary of Defense. He said:

"As you may know, I have long advocated that we provide nuclear propulsion for any new aircraft carriers and escorts we build for those carriers. My experience and responsibilities over the past decade as Commander in Chief, Pacific Fleet; Commander in Chief, Atlantic and Supreme Allied Commander, Atlantic; Chief of Naval Operations and as Chairman of the Joint Chiefs of Staff have reenforced my conviction that we should provide nuclear propulsion for naval strike force ships....

"I am quite familiar with, and have personally participated in many of the studies and discussions over the years concerning this important issue. As I leave this Office, I want you to know that it is my judgment that this policy, recommended by the House of Representatives is a sound policy. I urge that the Department of Defense adopt it and get on with the task of building nuclear powered naval strike forces which I sincerely believe will be essential in the years ahead. The experience of our Navy during the 1973 October War is providential warning--which appears already to have been forgotten--that the Navy strike forces must not continue to be dependent on oil for propulsion in an actual war situation."

AIRCRAFT CARRIERS

For the foreseeable future, the aircraft carrier will be the principal offensive striking arm of the Navy in a non-nuclear war. No other weapon system under development can replace the long range sustained, concentrated firepower of the carrier air wing. Torpedo firing nuclear submarines, cruise missile firing nuclear submarines, nuclear cruisers with anti-air, anti-surface, and anti-submarine capabilities--all are needed to supplement and augment the capabilities of the nuclear carrier. But without the tactical air power provided by carriers all of our other surface forces would have greatly increased vulnerability. If an opponent is successful in developing weapons that can sink large numbers of our carriers, and we are not successful in developing adequate counter weapons--or if we simply do not build a

sufficient modern carrier force to protect our sea lanes--the United States will have to change its national objectives to be consistent with our inability to conduct overseas military operations.

How many carriers the Navy must have I am, of course, not qualified to determine. However, I note that the number of overseas air bases available to us continues to decline. Since there is no known alternative to carriers for providing significant tactical air power beyond the range of provisioned and protected land bases, and the capabilities of the Soviets to attack us at sea continue to increase, our need for carriers appears to me to be increasing rather than decreasing. I have observed over the past 25 years that the carrier force level projected by the Secretary of Defense for future years often showed a decline to around 12, but that each year as defense officials faced current realities they decided on a force level for that year of at least 14. But since only four new carriers have been authorized for construction since 1963, a lower force level will soon be dictated by the necessity to retire over-age ships that are rapidly wearing out. Further, we no longer have the flexibility of rapidly increasing the carrier force level by reactivating Reserve Fleet carriers, as we did in the Korean War when we reactivated relatively new ESSEX Class ships which were mothballed after World War II.

LONG LEAD FUNDS FOR THE FOURTH NIMITZ CLASS CARRIER, CVN 71

The Navy originally proposed that a fourth NIMITZ Class carrier, the CVN 71, be built for delivery in October 1984--four years after the contract delivery date of the nuclear aircraft carrier CARL VINSON, CVN 70. To achieve this delivery, the carrier must be authorized in FY 1978 or 1979 with a minimum of \$350 million in FY 1977 for procurement of long leadtime items. The

President's FY 1977 budget authorization request submitted to Congress in January 1975 requested these funds. However, the President's amended FY 1977 budget authorization request submitted to Congress in January 1976 deferred the advance procurement funds to FY 1978.

Deferral of advance procurement funds from FY 1977 to FY 1978 would delay delivery of the carrier to at least October 1985. The projected October 1985 delivery is predicated on the assumption that the shipbuilder would be able and would agree to provide the skilled manpower necessary to build the carrier in this time period, even though most of the manpower used to build the CARL VINSON could be expected by that time to have been reassigned to other work, or laid off.

In the past 25 years, the Newport News Shipbuilding and Dry Dock Company has been awarded contracts for the construction of eight aircraft carriers; the largest gap between these carriers has been four years. Therefore, the minimum five-year gap between the CVN 70 and the CVN 71, caused by deferral of long lead funds to FY 1978, would create greater disruption in the carrier building program at Newport News than has been experienced at any time during the last quarter century.

The long lead nuclear propulsion plant components for the NIMITZ Class carriers are the largest components produced for the naval nuclear propulsion program and, in many cases, required development of special production lines and facilities to produce them. The components for the NIMITZ, DWIGHT D. EISENHOWER, CARL VINSON, and a ship's set of shore based spares, were ordered

between FY 1967 and FY 1973. An average of one ship's set of components was ordered every 21 months, with the longest gap between any two orders being three years.

The last of these components was ordered in calendar year 1972. Deferral of long lead funds from FY 1977 to FY 1978 would put at least a five-year gap between the ordering of nuclear propulsion plant components for the CVN 70 and the CVN 71.

The October 1985 delivery for the CVN 71 is predicated on the assumption that the five-year gap after ordering the CVN 70 nuclear propulsion components will not increase new component lead time. This assumes that the component manufacturers involved will make their production facilities and manpower available at the time needed, even though these facilities can be expected to be shut down or diverted to other work due to the five-year gap between orders.

The Navy estimates that the minimum increase in the cost of the CVN 71 due to deferral of long lead funding to FY 1978 will be \$178 million. Insofar as the next nuclear carrier, the CVN 71, is concerned if we are ever going to build it, I don't see how there can be any question but that we should go ahead with the procurement of long lead items in FY 1977.

It should be borne in mind that a NIMITZ Class carrier is the largest and most complex device ever constructed. To manufacture the components and systems and to build and test the whole ship with its multitudinous equipments requires the skills of many thousands of highly trained people. Therefore,

when the program is stretched out and special production facilities are disrupted--as is happening on the CVN 71--large additional costs are unavoidable. The cost of delaying start of the CVN 71 is much higher than the inflation cost added to the much simpler ships that might have to be deferred to make funds available for the CVN 71.

AIRCRAFT CARRIER SIZE

There are many who would push the Navy in the direction of constructing carriers much smaller than the NIMITZ, with the fighting capability selected based on a predetermined ship size or cost. Unfortunately, as H. L. Menchken has said, "For every difficult and complex problem, there is an obvious solution that is simple, easy, and wrong."

Frankly, it does not make sense to me to set an arbitrary limit on the acquisition cost or displacement of an aircraft carrier, nuclear or conventional. The fighting capability of the air wing the carrier can support determines the offensive capability of the entire carrier task group. For the relatively small amount "saved" in carrier acquisition cost by forcing it to be smaller, major reductions in combat capability of the air wing would result. Such reductions do nothing to cut carrier task group support costs such as escort force costs. In fact, they increase logistic support costs because of the more frequent replenishment required by the reduced capacity of smaller carriers for combat consumables. Further, the Navy has well documented experience that smaller carriers have higher aircraft accident rates. As the unit cost of aircraft continues to increase, this could become a significant cost factor.

It should be borne in mind that the design of the NIMITZ Class carriers evolved from 50 years of experience with the design, construction and operation of aircraft carriers. The present trend toward fewer carriers increases the number of types of aircraft the remaining carriers must be able to handle. This increases the number and variety of shops, maintenance facilities, spare parts, and personnel that must be accommodated. Further, the reduction in the total number of carriers requires each to be large in order to accommodate as many aircraft as possible, so that the minimum number of carriers need be used for any given assignment. Also, the increasing sophistication of the projected Soviet air threat argues against a decrease in the capabilities of the carrier air wing which would be forced by a significant reduction in carrier size.

The CVNX Characteristics Study Group Report recently published by the Navy concludes:

"Overall, it is more cost effective to procure modified design NIMITZ Class carriers. The principal reasons are:

"Projected funding levels will support a force level of not more than 13 or 14 fully capable carriers.

"At force levels of 13 or 14 carriers, high individual carrier capability is required to meet tactical requirements.

"Carriers significantly smaller than the NIMITZ Class cannot support the practical minimum number and types of aircraft required to perform missions alone in the presence of an air threat. NIMITZ size carriers provide more than twice the combat capability of the smallest practical nuclear powered alternative.

"NIMITZ size carriers have more flexibility to incorporate changes in characteristics that may be required during the life of the ship due to changes in the threat and new technological developments.

"For a three-carrier procurement program, the cost of three Modified NIMITZ size carriers is about the same as the cost of three of the smallest sized carrier concepts developed."

I concur in the conclusion of the carrier study that we should continue building NIMITZ carriers.

A substantial portion of the higher investment cost of a nuclear carrier is directly offset by the elimination of the cost of buying and delivering propulsion fuel oil; also, by the reduced cost of the logistic support forces needed due to less frequent replenishment of combat consumables because of the larger capacity of the CVN for aviation fuel and ammunition. Navy studies have shown that it takes the equivalent of an extra fleet oiler just to provide the peacetime propulsion fuel support for an oil-fired aircraft carrier. Of course, in wartime the oil-fired carrier's vulnerability is largely determined by its requirement for a continuous supply of propulsion fuel and the extreme vulnerability of oilers.

ADVANTAGES OF NUCLEAR PROPULSION IN SURFACE WARSHIPS

Just as I recommend that new aircraft carriers be nuclear powered, so do I recommend that new guided-missile major combatants built for strike forces be nuclear powered. Previous studies have shown that each time a nuclear ship is substituted for a non-nuclear ship in a carrier task group, the capability of the task force as a whole will improve, with the greatest gain being made when the all-nuclear task group is achieved. The all-nuclear carrier task group has greater capability to penetrate and counter the projected Soviet naval threat than any other naval surface force we know how to build.

Nuclear propulsion allows a submarine to operate completely independent of the earth's atmosphere; thus nuclear power provided a true submersible for the first time. Prior to the advent of nuclear propulsion the most modern

submarines could only remain submerged below snorkel depth for a day or so, and could only run at full power submerged on their batteries for an hour. Nuclear propulsion gives submarines essentially unlimited high speed endurance, surfaced or submerged. The advantages of nuclear propulsion for surface warships may not appear to be as dramatic, but nevertheless they are very important from a military standpoint.

With existing designs of naval nuclear propulsion plants it is possible to provide enough energy for ten to 13 years of warship operation without the need to refuel. And new reactor designs now under development will last 15 years. In contrast, oil fired naval warships must be refueled every few days. The initial nuclear fuel for a NIMITZ Class aircraft carrier contains the energy equivalent of 11 million barrels of fuel oil, or enough oil to fill a train of railway tank cars stretching from Washington to Boston.

It was the concern for fuel for naval ships in time of war that led to establishment of the Naval Oil Reserves, which are now being considered as a quick source of additional oil during the present shortage. But even if part of this reserve is still available during a future war, it will also be necessary to have the oil at hand where it is needed, before it can be used. Of what value is an oil-fired warship if it is unable to get oil? It is the need for a reliable worldwide fuel distribution system that is the Achilles' heel of our oil-fired Navy. The difficulty in obtaining foreign oil supplies to support operations in the Mediterranean and the Indian Ocean during crises in recent years amply shows this vulnerability.

If we are concerned that the improving Soviet naval capability will increase the vulnerability of our first line strike forces then we must recognize it is no longer reasonable to assume that our underway replenishment groups can be operated with impunity. The all-nuclear carrier task group, having essentially unlimited high speed endurance, carrying more combat consumables which permits longer periods between replenishment, and with the capability to retire at high speed for replenishment in low threat areas, has far greater capability to conduct sustained combat operations than any other surface naval force we know how to build. Against a sophisticated naval threat, it could quickly turn out that our ability to conduct sustained combat operations would be controlled by the logistic support available. Under such circumstances the all-nuclear carrier task group has far greater striking capability than a conventional group.

When logistic supply lines are attacked during a real war, the decrease in the requirement for ships' fuel for the strike forces will have a compounding beneficial effect. The surviving fuel transportation and storage facilities can then all be concentrated on getting fuel for aircraft and other military vehicles to the forward areas. The escorts that would otherwise be required for the tankers which carry ships' fuel could then be assigned to assuring the safety of other supplies.

A major lesson of World War I, the first war in which fuel oil played a pre-dominant role, was pithily expressed: "The Allies floated to victory on a sea of oil." In World War II, also, the supply of oil was a controlling factor in most military operations. These events appear now to have been forgotten. Unfortunately, history has a way of taking revenge for forgetfulness.

For instance, lack of oil was instrumental in the defeat of Japan. The Strategic Bombing Survey conducted after the war in a report entitled "Oil in Japan's War," concluded:

"In every phase of the war, oil determined Japan's strategy and governed the tactical operations of its Navy and Air Forces. The collapse of the Japanese war effort was the consequence of their inability to maintain their supply routes to the Southern Zone.

"The effect of oil shortage on Japanese Naval strategy became devastatingly apparent in the campaign for the Marianas and the Philippines. Japanese fleet units had to be dispersed between the Japanese Inland Sea and Singapore, owing to limited fueling facilities, and failure to achieve satisfactory coordination between the fleets contributed substantially to the Japanese defeat. Fuel shortage in the Home Islands deprived the Japanese naval forces fighting off the Philippines of the services of at least three battleships, which, together with several aircraft carriers, were taken out of service and assigned to duties as port and anti-aircraft vessels because they consumed too much oil."

When a nuclear carrier is substituted for a conventional carrier, the range of a carrier task group, with four conventional escorts, is doubled. When two of the four escorts with the nuclear carrier are nuclear, the range of the carrier task group is doubled again. When all the escorts are nuclear, the range of the carrier task group is essentially unlimited.

For these reasons, a nuclear task force is at least 50 percent more effective than a conventional task force; this is probably actually much greater than 50 percent. Each nuclear ship added to the fleet also makes an additional unit available to the Fleet commander for assignment to independent operations where logistic support may be nonexistent or difficult to provide. Examples are quarantines, shows-of-force, rescues, protection of minesweeping operations, prevention of aerial minelaying, and submarine trailing and hold-down operations.

Each nuclear escort substituted for a conventional escort also increases

task force flexibility and mobility through advantages which are difficult to describe in numerical form. For example, none of the numerical comparisons of the relative effectiveness and cost of nuclear and conventional escorts cited in Navy cost studies take into consideration losses due to enemy action. One Navy study on "Nuclear Power for Surface Warships" showed that:

Losses of underway replenishment ships can be expected to be greater when supporting conventional than when supporting nuclear warships;

Under several of the threat conditions studied, the number of replenishment ships lost supporting conventional warships was more than twice the number lost supporting nuclear warships;

and that,

The greater the threat to the underway replenishment ships, the larger is the loss differential to be expected--owing to the larger replenishment force required for the conventional warships.

I am sure you know the maxim learned through the bitter lesson of war that:

"The art of war is the art of the logistically feasible."

It is the elimination of the requirement for a continuous supply of propulsion fuel that makes nuclear powered warships so valuable.

The areas I have just mentioned represent a tremendous increase in military effectiveness. In my opinion, this effectiveness far outweighs the small increase in lifetime cost for the all-nuclear carrier task force.

There are many examples where the value of nuclear propulsion for surface warships has been demonstrated in real terms, in every day operational missions of the Fleet. I frequently receive letters from the Commanding Officers of our nuclear warships telling me of some of these advantages. As one of many examples, for 13 days during July, 1971, the TRUXTUN--the cruiser that Congress changed to nuclear propulsion in the 1962 program--provided an

excellent demonstration of the capability of a nuclear powered ship to perform truly independent missions, free of the fuel oil umbilical cord.

While on a special mission, the TRUXTUN steamed 8,600 miles at an average speed of advance of 28 knots, traveling from Subic Bay in the Philippines to Perth, Australia and crossing the Indian Ocean twice en route. This is the longest period of such high speed operation ever sustained by any ship. This high speed could have been continued for an essentially indefinite period, had there been a need. At the conclusion of her mission, the TRUXTUN was fully ready to undertake protracted combat operations.

In contrast, our most modern oil-fired cruiser would have had to refuel at least three times during such a transit, and would have arrived at her destination with close to minimum fuel reserves, unable to conduct extended combat operations. And, of course, there are no tankers normally available in the middle of the Indian Ocean from which to refuel. From a practical standpoint, no non-nuclear ship could have performed the TRUXTUN's mission--in peace or in war--because of the fuel support needed.

Last year the TRUXTUN completed her first overhaul and refueling since she was commissioned in 1967. Her new reactor cores will provide for at least ten years of operations. A few weeks ago, I received a letter from her Commanding Officer, Captain B. F. Tally, reporting on a recent fleet exercise in which the TRUXTUN along with conventional ships operated with the nuclear carrier ENTERPRISE in task force operations. He said:

"TRUXTUN operated in a multi-threat environment and on occasion simultaneously engaged surface, submarine, and air threats. I was pleased with the results.

"The Fleet Exercise once again pointed out the advantages of nuclear power. Frequently, ENTERPRISE went to a high speed to avoid a threat, etc. On several occasions, TRUXTUN was the only member of the Task Group which could maintain station and keep up with ENTERPRISE particularly at speeds of 30 knots or greater. The mutual compatibility of nuclear powered warships appears to be well recognized today since TRUXTUN is scheduled to operate with ENTERPRISE in all exercises in the next several months and deploy with her."

Also to be considered in comparing nuclear powered to conventionally powered ships is the availability of fuel reserves during war. I mentioned that the Naval Oil Reserves are now being considered as an emergency source of fuel. These reserves are, therefore, no longer guaranteed. The situation is different when we have nuclear fuel as a reserve. What limited our industrial output, and therefore our fighting capacity in World War II, was the labor supply. But we can employ labor now--in peacetime--to manufacture nuclear fuel for our nuclear navy, and we can store the fuel in a small area. We would then be assured of having a nuclear fuel reserve for a long war, and we would not need labor during the war to manufacture nuclear fuel.

There are events in the nation's history that, to use Thomas Jefferson's phrase, are like "a fire bell in the night." The recent conflict in the Mid-East was such an event. For the first time, we were in a situation where the Soviet Fleet in the Mediterranean outnumbered the United States Sixth Fleet.

Had the Soviet Mediterranean Fleet been ordered to challenge the Sixth Fleet who would have won? From the limited information available to me, I do not think the answer is entirely clear. Would such a question have been seriously asked ten years ago? Perhaps this thought will give you an inkling of the change that has taken place in the balance of naval power over the past decade.

This change underscores the urgent need we, as an island nation, have to build a Navy strong enough to protect our national interest and our economic and political survival. To me, it is clear that the strike force ships we build for such a Navy must have nuclear power.

Four years ago I furnished the Joint Committee on Atomic Energy a chronological summary of the history of nuclear surface warships over the past quarter century. This chronology was subsequently published on pages 123 to 277 of the record of the "Hearing and Subsequent Inquiry of the Subcommittee on Military Applications of the Joint Committee on Atomic Energy on Nuclear Propulsion for Naval Warships, May 5, 1971 - September 30, 1972." References to the major studies of nuclear propulsion for surface warships are noted in the appropriate places in that chronology.

Lengthy though it is, the chronological summary merely scratches the surface of the tremendous amount of effort that has gone into documenting and analyzing the advantages, value, and cost of nuclear propulsion in surface warships. In the chronology, I barely touched on the extensive analyses of cost and effectiveness and the voluminous documentation of actual examples reported by Fleet Commanders, where nuclear powered surface warships have been able to perform important missions in the Atlantic, Pacific, Mediterranean, and Indian Oceans which conventionally powered ships either could't do at all or would have had great difficulty doing under war conditions.

The studies that have been made of the issue of nuclear propulsion for surface warships have cost millions of dollars and countless man-years of effort, including that of many high level people. Every aspect of the

advantages and cost of nuclear surface warships has been exhaustively studied in minute detail over a period of many years by numerous analysts, civilian and military. These studies have brought out time and again that a nuclear surface warship has a higher initial investment cost than its conventional counterpart; but that when overall costs are taken into consideration, the nuclear ships are not much more expensive, but provide greatly increased military capabilities. I do not believe that further studies can produce any more facts.

TITLE VIII - NUCLEAR NAVY

I mentioned earlier that two years ago Congress established a policy espoused in Title VIII of the Defense Department Appropriation Authorization Act, 1975, that the United States will provide nuclear propulsion for major combatants built for naval strike forces. In my opinion, passage of Title VIII was one of the most significant steps taken by Congress since World War II to help Congress carry out its responsibilities under Section 8 of Article I of the United States Constitution--"To provide and maintain a Navy."

I think Title VIII is misunderstood by many who have not taken the time to read it carefully and to read the legislative history. Many questions are asked about the impact of building an "all nuclear Navy" as required by Title VIII. Title VIII does not require an "all nuclear Navy." Section 801 makes it the policy of the United States to modernize the Navy by building major combatant vessels for the strike forces with nuclear power.

Section 802 defines "major combatant vessels for the strike forces..."as including combatant submarines; combatant vessels for aircraft carrier task

groups which include aircraft carriers and the cruisers, frigates, and destroyers which accompany them; and combatant vessels of these types designed for independent missions where essentially unlimited high speed endurance will be of significant military value.

The legislative history clearly shows that Title VIII does not preclude the Navy from building oil-fired sea control ships, patrol frigates, surface effect ships, or other such ships, because these ships are not included in the definition of "major combatant vessels for the strike forces." Further, it is clear that auxiliary craft, support force ships such as oilers and replenishment ships, amphibious ships and convoy escorts do not fall under the definition of Section 802. Thus, Title VIII does not require an "all nuclear Navy;" it applies solely to major combatants to be built for the strike forces.

Since the Department of Defense is recommending nuclear powered submarines and aircraft carriers in their shipbuilding program, the only ships currently at issue under Title VIII between Congress and the Department of Defense are the ships to carry the AEGIS fleet air defense system--the nuclear strike cruisers, CSGNs; and the DDG-47 Class gas turbine powered AEGIS ships.

Section 803 requires the Secretary of Defense to submit to Congress a written report each year which presents the Department of Defense Five-Year Defense Program for construction of nuclear powered warships.

Section 804 defines the conditions under which it is legal for the Department of Defense to request authorization or appropriations from Congress for

major combatant vessels for the strike forces which are not nuclear powered.

Section 804 states:

"All requests for authorizations or appropriations from Congress for major combatant vessels for the strike forces of the United States Navy shall be for construction of nuclear powered major combatant vessels for such forces unless and until the President has fully advised the Congress that construction of nuclear powered vessels for such purpose is not in the national interest. Such report of the President to the Congress shall include for consideration by Congress an alternative program of nuclear powered ships with appropriate design, cost, and schedule information."

This section provides Congress the necessary information to decide for itself whether or not any specific combatant vessel for the strike forces of the Navy shall or shall not be nuclear powered.

AEGIS SHIPS

This year marks the first real test of the effectiveness of Title VIII. The issue is whether or not ships to be equipped with the AEGIS fleet air defense system will be nuclear powered. AEGIS is the latest and best fire control system the Navy has devised to launch missiles to protect surface ships against enemy air attack. The decision this year on the issue of whether the AEGIS ships to be built for naval strike forces will be nuclear powered will have a profound effect on the future of the Navy, and will determine the rate of application of nuclear propulsion for surface ships.

The AEGIS fleet air defense system has been under development for several years. The development has now reached the stage where the Navy is asking for authorization to construct AEGIS ships. The Congress will make the decision this year whether all AEGIS strike force ships are to be provided nuclear propulsion, or whether the mix of conventional and nuclear ships proposed by the Department of Defense will be built.

Up to April 1971, Navy programs were based on all AEGIS ships being nuclear powered. It was planned to modify future VIRGINIA Class nuclear cruisers to accommodate AEGIS. In April 1971, the Secretary of Defense cancelled the third NIMITZ Class carrier, the CVN 70, and the two nuclear cruisers, CGN 41 and 42; he also cancelled the Navy's future plans for building AEGIS equipped nuclear cruisers. During the next two years, the Defense Department restored the CVN 70 and the CGN 41 and 42. Last year, Congress cancelled the CGN 42.

In 1973, Admiral Zumwalt, who was then the Chief of Naval Operations, recommended starting a class of gas turbine powered AEGIS destroyers in FY 1977 and a class of nuclear cruisers with AEGIS in FY 1978.

Secretary of the Navy Warner requested that the CNO investigate "the feasibility of building a single new class of aircraft carrier escort, nuclear powered, vice the two now planned . . ." In a meeting I attended on 12 October 1973, Admiral Zumwalt chose a program of 16 gas turbine powered AEGIS ships and 8 nuclear AEGIS ships to provide two AEGIS ships per carrier for a projected force level of 12 carriers of which four are already authorized to be nuclear. This decision became the basis for the presently planned mix of conventional and nuclear AEGIS ships.

At this meeting, he said that the talk of an energy crisis was just so much talk, that we are sitting on a 400-year supply of coal and that we will soon have the capability of putting this in a form we can use in our ships. He said that if he had his way, he would never build another nuclear powered surface ship. He said that his decision on the number of conventional AEGIS ships was based on the assumption that all new carriers will be non-nuclear. Therefore, he approved eight nuclear AEGIS ships to provide two each for the four nuclear carriers and 16 non-nuclear ships to provide two each for 8 conventional carriers he assumed would later be replaced by conventional carriers.

Admiral Holloway became Chief of Naval Operations in July 1974, a

month before Title VIII became law. Based on his review of future shipbuilding plans, he recommended that future carriers be nuclear powered. He also recommended, and the Navy adopted his position, that the Navy build 18 nuclear powered strike cruisers, CSGNs, in lieu of the prior proposed mix of 16 non-nuclear and 8 nuclear ships with AEGIS.

In a letter of December 6, 1974, to the Chairman of the Seapower Subcommittee of the House Armed Services Committee, Admiral Holloway proposed a four-year program for building AEGIS ships. This program called for six nuclear powered strike cruisers, CSGNs, to be authorized in the four-year period from fiscal 1977 through fiscal 1980, and no conventional AEGIS ships.

The Navy subsequently recommended to the Secretary of Defense that, in addition to all new construction AEGIS ships being CSGNs, AEGIS should be introduced into the fleet by converting the nuclear cruiser LONG BEACH to AEGIS as soon as possible. The Defense Department disapproved the 18 CSGN program proposed by the Navy. The Navy continued to recommend that the first new AEGIS ship be a CSGN in FY 1977 with advance procurement funds in FY 1976. The Defense Department cut the Navy's FY 1977 budget and persuaded the Navy to recommend in the FY 1977 program a DD-963 type ship with AEGIS; this was named the DDG-47 Class.

In June 1975, the President disapproved this DOD/Navy recommendation and requested Congress to provide advance procurement funds in the

FY 1976 budget for the first CSGN to be authorized in the FY 1977 program. The Congress did not authorize the long lead funds. A few months ago the Navy program had been changed to four nuclear strike cruisers to be built over the next five years, along with seven conventional ships.

In the program now proposed, there are only two nuclear strike cruisers and eight conventional AEGIS ships to be built in this five-year period. The second CSGN would be delivered in 1986, about the same time as the sixth nuclear powered carrier, the CVN 72, if the two nuclear carriers now in the Five Year Defense Plan are approved. Thus, when all of the ships planned for the FY 1977-81 five-year program are delivered, we will have six nuclear carriers and only two nuclear AEGIS ships. There will also be six to eight aging conventional carriers and eight new non-nuclear AEGIS ships.

I am firmly convinced that if the AEGIS ship program presently proposed by the Department of Defense is approved, by next year the analysts in the Office of Management and Budget and in the Defense Department will attempt to eliminate completely the nuclear strike cruiser program. It would not surprise me if they then again recommended building conventional aircraft carriers in lieu of nuclear carriers. That has been the pattern for over 25 years, starting with nuclear submarines. And I see no indication that the analysts have changed one iota in their position that, since nuclear surface ships cost more, we should build conventional ships.

AEGIS is planned as our most capable AAW weapons system. Because AEGIS ships will be expensive, regardless of their means of propulsion, there will never be a large number. In a naval war against an enemy employing sophisticated weapons systems, all strike force AEGIS ships will be needed in the areas of highest threat. It is under just such circumstances that the advantages of nuclear propulsion are most urgently needed to maximize mobility and minimize logistic support. It is into such high threat areas where the nuclear carrier task forces will be sent in time of war, and they will need nuclear powered AEGIS ships to accompany them. The AEGIS ships should be nuclear for the same reasons that carriers should be nuclear.

In areas where the threat is great enough to require nuclear carriers and AEGIS ships--our first line naval strike forces--it is highly unlikely that oilers can survive. When a non-nuclear AEGIS ship runs low on fuel, it will be necessary to remove the AEGIS ship to an area of lower threat to meet the oiler, losing the AEGIS protection just when it is most needed.

The CSGN also has unique capability for independent operation in areas where carriers are not available and its cruise missiles and 8 inch gun can provide sufficient offensive power.

Another consideration is that to have a credible nuclear powered guided-missile ship capability in both the Atlantic and Pacific Fleets, it is

necessary to build a reasonable number of nuclear ships so that some ships are available for immediate deployment at all times. Even if all ten AEGIS ships presently planned to be authorized over the next five years are given nuclear propulsion, the Navy would still have a total of only 19 nuclear-powered guided-missile ships in both oceans in the 1980's. It is my opinion that the Fleet Commanders of that period will consider this to be the minimum needed, considering the problems we can foresee today.

CONVERSION OF NUCLEAR CRUISER LONG BEACH TO AEGIS

The quickest and cheapest way to get the first AEGIS production unit into the Fleet is to convert the nuclear cruiser LONG BEACH. If \$371 million of initial funds are provided in FY 1977, the ship can be at sea with AEGIS late in 1981 or early 1982 at a total cost of \$785 million. This would increase by 6 years that portion of the LONG BEACH life during which it would have the AEGIS system compared to present Navy plans, and would provide another nuclear powered AEGIS ship much sooner. The LONG BEACH is not expected to require refueling before 1988. If the ship is converted to AEGIS with three years in the yard, refueling will not be required before 1990. If the ship is ever to be converted to AEGIS, I recommend it be done as soon as possible.

COMPARISON OF CSGN AND DDG-47

In addition to nuclear propulsion, the nuclear strike cruiser proposed by the Navy has significantly greater military features than the DDG-47 gas turbine powered AEGIS ship included in the President's FY 1977 budget request:

The anti-air warfare missile magazines in the CSGN carry 45 percent more missiles and there are twice as many HARPOON anti-surface missile canister launchers, sixteen in lieu of eight.

The CSGN is designed to carry eight TOMAHAWK ship-launched cruise missiles; whereas, the DDG-47 does not have space to carry this system. Each of these missiles have five times the range of the HARPOON missile and twice the explosive power. Thus, the CSGN will be able to bring within anti-surface missile range, targets in an area 25 times that covered by the DDG-47.

The CSGN will carry an 8" gun in lieu of two 5" guns in the DDG-47. The range of the projectiles that will be available for the 8" gun is expected to be greater than the range of the 5" gun projectiles; the CSGN will be able to bring within gun range an area about nine times larger than the area covered by the DDG-47.

Either ship can carry helicopters; but the aircraft handling facilities in the CSGN will be larger; so that it will be able to carry two VTOL aircraft; this will greatly increase its targeting capabilities at long ranges.

The CSGN will have several other features not included in the DDG-47. It will have a task force coordination center, as well as accommodations and facilities for a Unit Commander and his

staff. It will also have the SSES-electronic intelligence and analysis system; this is not included in the DDG-47.

The displacement of the CSGN has been increased over a thousand tons to provide fragmentation armor not in the DDG-47. It is also being designed to provide systems to isolate ship internals from chemical and biological attack. The CSGN also has greater space and greater electrical power capacity for future weapons systems modifications.

I thoroughly agree with the Chief of Naval Operations' decision to include the additional military features in the nuclear strike cruiser. These, combined with nuclear propulsion give the strike cruiser far greater capabilities than any other surface warship in the world, except the aircraft carrier.

Nevertheless, there is no question that the DDG-47, which is being called a destroyer, is a major combatant. It has greater displacement and has more armament than any of the eighteen non-nuclear cruisers built since World War II. It is even heavier and has more armament than the nuclear cruisers BAINBRIDGE and TRUXTON. I do not know why it is called a destroyer, DDG, rather than a cruiser, CG. It will have a cruiser weapons systems installed in a cruiser size hull.

The nuclear strike cruiser with its HARPOON and TOMAHAWK missiles and

8" gun; with its capability to handle future VTOL aircraft; and its AEGIS fire control system and large capacity for AAW missiles; will have far greater capability to attack air and surface targets than any surface ship other than the aircraft carrier. It will also have the best ASW systems available for surface ships.

These capabilities combined with nuclear propulsion will give the ship the flexibility and mobility needed for assignment to any mission which can be handled by a surface ship that does not require the capabilities of an aircraft carrier. Such missions, may, however, supplement carrier operations in adjoining areas or be in direct support of carrier task force operations.

The strike cruiser will be able to operate independently or in conjunction with nuclear submarines, carriers, and/or other surface ships and land based ASW aircraft, the composition of the force depending on the objectives to be achieved and the opposition to be expected under the particular circumstances involved. The mobility provided by nuclear propulsion will give the Force Commander the flexibility to assign the strike cruiser to changing roles as circumstances develop. It can be assigned to investigate and pursue individual targets and later rejoin the force at high speed. Or it can be assigned to an area distant from the main force to provide early warning of attack and coordination of offensive action, and without concern for the problems of fuel replenishment. Fuel problems prohibit assignment of non-nuclear ships to such tasks while maintaining a high speed of advance.

COMPARISON OF COST OF CSGN AND DDG-47

The increase in estimated acquisition cost of buying the first AEGIS ship as a CSGN, in lieu of DDG-47, is about \$490 million in FY 1978 program dollars. Of this amount, about half is due to the difference in military characteristics other than propulsion. The remainder is due to the higher acquisition cost of nuclear propulsion, including the initial nuclear fuel which will provide for 15 years of ship operations. The cost of buying and delivering oil is not included in the acquisition cost of a conventional ship. At today's prices, it would cost about \$90 million to buy and deliver an amount of oil for the conventional ship which would provide the amount of energy equivalent to the energy in the nuclear cores of the CSGN.

A comparison which would bring out the added procurement cost of having all nuclear AEGIS ships would be to compare the cost of the 7 nuclear strike cruisers included in the President's alternative all-nuclear program cited in his letter of February 13, 1976, to the Congress to the cost of a mixed program of 2 nuclear strike cruisers and 6 conventional ships with the same military features other than propulsion. This is two less conventional ships than in the currently approved mixed program of 8 DDG-47 Class ships and 2 nuclear strike cruisers. The cost of buying and delivering an equivalent amount of fuel oil for each conventional ship should also be included in the cost of the mixed program, since the nuclear fuel cost is included in the procurement cost of the nuclear ships.

The cost of the 7 nuclear strike cruisers is estimated to be \$8.530 billion. The cost of 2 nuclear strike cruisers and 6 conventional DDG-47 Class ships is estimated to be about \$6.298 billion. To this should be added \$1.5 billion to give the 6 conventional ships the same military characteristics as the nuclear strike cruisers, and \$.540 billion at today's prices for the cost of buying and delivering 3 million barrels of oil to each conventional ship. This gives a total for the mixed program of \$8.338 billion. This is only \$0.192 billion less than the cost of the 7 nuclear strike cruisers.

Thus, when the all-nuclear program of 7 strike cruisers is compared to a mixed program of 2 nuclear strike cruisers and 6 conventional ships having the same military characteristics, the extra cost of the all-nuclear program is seen to be about \$0.2 billion for one less conventional ship.

Navy studies and actual experience at sea have shown that even with the same weapons in nuclear and conventional ships, it takes fewer nuclear ships to do the same job as a greater number of conventional ships. In this regard, I have compiled data on the underway steaming of the LONG BEACH, BAINBRIDGE, and TRUXTUN since 1968 during which time these ships were assigned to the Pacific Fleet. I have also compiled data on the underway steaming

for eight non-nuclear cruisers also assigned to the Pacific Fleet. The three nuclear ships, exclusive of overhaul periods, have averaged 3,480 hours underway per year since 1968 with a maximum for any one ship in a year of 5,648 hours underway. The eight non-nuclear cruisers, exclusive of overhaul periods, averaged 2,730 hours underway per year with a maximum for any one ship in a year of 3,667 hours from FY 1974 to present. I was unable to obtain data for the non-nuclear ships prior to FY 1974.

Thus, the nuclear ships have been averaging about 27 percent more time underway than their conventional counterparts in the Pacific Fleet. I anticipate this ratio will increase as a result of recent instructions to the Fleet to reduce the operating tempo of non-nuclear ships further due to the high cost of oil and budget constraints. In this regard, it should be borne in mind that as annual underway time is reduced due to budget constraints, opportunities for crew training are reduced and therefore operational readiness for combat may be affected.

Further, Navy studies over many years have shown that when all costs of a carrier task group over its life are considered, substitution of nuclear powered escort ships for conventional ships with the same weapons increases the overall peacetime cost of a carrier task group only about one percent for each escort changed to nuclear propulsion. This would also be true for a nuclear strike cruiser compared to a conventional strike cruiser having the same military features other than propulsion.

Taking into consideration the declining number of overseas bases and the difficulties that will, in future, be encountered in delivering propulsion fuel in areas of highest threat, and when all costs of nuclear and conventional ships

are taken into consideration, I believe that the added military benefits of nuclear propulsion for AEGIS ships are well worth the additional cost involved.

COST ISSUES CITED BY OPPONENTS OF NUCLEAR PROPULSION

For many years opponents of nuclear propulsion have advocated that the acquisition money be used instead to buy a larger number of cheaper conventional warships. The desire for small, light, cheap weapons systems has been endemic for a long time. Experience in wartime, however, indicates that the essential ingredients of a successful seaborne weapons system -- reliability and redundancy, speed and endurance, versatility, firepower -- are often lacking in such developments. These lessons have been lost on generation after generation of our leaders and must be periodically relearned at potentially enormous cost and loss of life when we are faced with actual wartime situations.

The number of AAW missile batteries, the number of sonars and ASW weapons systems, and the number of escorts needed to protect the great investment in a carrier task force cannot properly or logically be traded off for nuclear propulsion. No matter how many tradeoffs we study of other ways to spend the money we need to pay for nuclear propulsion, we will always be faced with comparing unlike things; none of the tradeoffs accord freedom from logistic support for propulsion fuel which is provided by nuclear propulsion. The other tradeoffs provide additional defensive protection for the task group, but none of them increase the offensive capability of the CVN, as does nuclear propulsion in the escorts. To compare a larger number of conventional escorts with a smaller number

of nuclear escorts at equal cost is not to compare alternate ways of achieving the same capability; it is merely to compare two different capabilities that can be achieved with the same amount of money.

Even life cycle cost comparisons made of nuclear and conventional warships are based on the assumption that carrier task forces could be safely replenished in the strike area. I believe that if a realistic wartime assumption concerning the ability of carrier task forces to conduct replenishment operations in areas subject to the projected Soviet naval threat of the 1980's were used, the relative cost of nuclear powered surface warships would be shown to decrease. In a real combat situation a sophisticated enemy would make a determined effort with nuclear submarines and other forces to interrupt our supply lines and sink our replenishment ships. Under such circumstances, the ability of nuclear warships to retire at high speed from the areas of highest threat in order to replenish combat consumables in areas of lower threat and then return to the strike area at high speed could mean the difference between victory and defeat in the strike area.

SHIPBUILDING CAPACITY

Some also argue that we should not increase the nuclear warship building program because we do not have enough shipbuilding capacity. But the question of building capacity is a chicken and egg proposition. The problem is that we do not have a firm nuclear shipbuilding program. If we can get a firm long-range program, we can get the additional capacity we may need to produce it. But we cannot expect shipbuilders and component suppliers to gear up to do considerable work when they are not reasonably sure of the extent of future work.

In the past, we have had as many as seven shipyards--two naval and five private--build nuclear warships. All seven built nuclear submarines; three built nuclear cruisers; and one, Newport News, has and continues to build nuclear carriers. At the peak of the nuclear warship building program in the early 1960's, 14 nuclear ships were authorized per year.

However, the decline in the number of nuclear ships authorized each year--an average of about six per year for the last five years--and the desire to build each one for as little cost as possible, has caused us to concentrate our present nuclear warship construction in two yards, the Electric Boat Division of General Dynamics in Groton, Connecticut and the Newport News Shipbuilding and Dry Dock Company in Newport News, Virginia; this yard was bought by Tenneco Incorporated, of Houston, Texas, in 1968. However, two yards that used to build nuclear ships, the Quincy yard of General Dynamics, and the Ingalls yard of Litton Industries have expressed interest in bidding on the nuclear strike cruiser program.

Today the annual investment by electric utilities in nuclear power equipment for central station power plants is far greater than the Navy's annual investment in naval nuclear propulsion plants. Further, twelve years ago, annual naval shipbuilding contracts exceeded U. S. commercial shipbuilding contracts by a factor of three. Today the dollar value of annual commercial shipbuilding approximates the dollar value of naval shipbuilding contracts. Both of these factors add to the urgency of establishing a firm long-range nuclear warship building program, so that we are in a good position to compete for the necessary industrial capacity.

NEED FOR HIGH CAPABILITY SHIPS

The Soviets recognize the importance of becoming the world's strongest sea power. We have now chosen not to challenge them with numbers of ships.

It is, therefore, essential that the ships we do build are the most powerful and effective weapons we know how to build. This means nuclear propulsion, and the best anti-air, anti-submarine, and surface-to-surface weapons we have for major warships. The penalty for any other approach is the steady erosion of our conventional military forces; a consequent reduction in our influence and in our "options" in world affairs; and the reliance of our security on nuclear weapons which, if used, would be an unmitigated disaster.

Historically, the United States has relied on the quality of its weapons and the ability to manufacture them in large quantities to win its battles, rather than on large numbers of men. The American people do not appear to be willing to support large numbers of men under arms. Further, the complexity of modern weapons and the rapidity with which major wars can now be started preclude relying on wartime production capacity to furnish our weapons; we must plan to fight a major war with the weapons we have at its outbreak. I believe we would be following a shortsighted path if we do not provide our first line striking forces with the best weapons our technology can provide.

If the problem is that the Nation's financial managers are not willing to provide enough money to insure our present defense, and at the same time invest sufficient funds to insure our future defense, then our people must be informed of the stark reality they face. We must not do what we have done so often in the past; namely, fail to provide adequate defenses using

the sugarcoated philosophy that they are not needed, only to soon find ourselves in a war which costs many times the funds "saved." In World War II, we got away with it because our Allies took the brunt of fighting while we re-armed. In Korea, we got away with it because we were able to reactivate quickly large numbers of World War II ships, as well as equipment which had just been put in reserve. In the Vietnam war, we managed to sustain ourselves by using up a great deal of material, drawing down our reserve stocks, wearing out much equipment, and because our real opponents did not fight with their first team.

Most people do not realize how badly our naval forces were allowed to deteriorate by the hiatus in naval shipbuilding in the 1960's and the reduction in fleet readiness accepted to make funds, material, resources, and personnel available for the Vietnam war.

All wars and all military development should have taught us that a war, small or large, does not follow a prescribed "scenario" laid out in advance. If we could predict the sequence of events accurately, we could probably have avoided the war in the first place. As a war progresses, we can count on constantly facing new conditions and surprises as the enemy seeks new means to probe our weaknesses; that is what we repeatedly experienced in Vietnam.

When a war starts, we must fight with what we have. You will recall that all the aircraft the U. S. used in World War II had been designed prior to that war. Further, it takes five years or more to build a large warship. This often means using our weapons for an entirely

different mission than that for which they were designed. For example, consider the use of B-52's in Vietnam.

Therefore, every major weapon should be designed with the maximum possible inherent flexibility. It is the need for the flexibility in warships built to operate for 30 years or longer that makes it so obvious and so important that we use nuclear propulsion in every major surface warship we build; especially since the ships we are building today are expected to last through part of the 21st century.

Despite the fact that Congress has repeatedly taken the position that we need to build more nuclear-powered surface warships, after 25 years of studying the issue we have only seven nuclear surface ships in operation and six more under construction. This is a very slow rate of transition to nuclear power for the greatest maritime power in the world--an island nation dependent on the strength of its Navy for its security.

Decisions made today concerning nuclear propulsion will not have their effect in the Fleet until a decade from now. We delude ourselves if we do not recognize that in the intervening years the Soviets will introduce major improvements in their naval weapons systems. As they continue to try out new technological advances in their fleet, we can expect them to incorporate the lessons learned into their new design ships. They have demonstrated time and again that they are willing to invest large amounts in new concepts.

No one can tell what problems our future leaders will face. However, the defense capabilities available to them will have been decided by the decisions

we make today. The issue before the Congress should be decided on the capabilities our ships must have to meet the challenge. No cost analyses; no political expediencies; no other factors should be permitted to obscure this fundamental fact. You cannot measure military capability by cost alone. To do so can be fatal to this country, especially since our likely adversary is engaged in the greatest expansion of military forces in history and continues to out-spend us. I know that with today's fiscal problems facing the Congress, it is extremely difficult to make investments for the future. However, if such investments had not been made in the past, we might not have survived as long as we have.

Our defense budget has been decreased each year in real dollars. It, therefore, becomes increasingly imperative that we have the best weapons our technology can provide. As for myself, I would rather fight a war with fewer, but better soldiers; with fewer but better guns, or tanks, or planes; with fewer but better ships. That is the road for a nation that excels in technology, and is reluctant to expend lives in war; yet, nevertheless, desires to win.

The systems analysts always tell us that we don't need the best ships, but they don't tell us how to counter the threat with inferior ships. For example, in the issue of nuclear powered surface warships, nowhere do they address how we should ensure that tankers can survive in areas of high threat. And without tankers, the conventional ships cannot survive.

NEED FOR A FIRM PROGRAM FOR NUCLEAR WARSHIPS

What must be done? We need a firm long-range program to build nuclear powered ships--a program that will not be drastically changed every year or two

as has happened in the past. Admiral Moorer, when he was Chairman of the Joint Chiefs of Staff, and for many years an eloquent proponent of nuclear power for our striking forces, agreed with me that we must build these first-line ships during peace.

The excuse for not building better ships is always that they are "more expensive". But all weapons of war are expensive. Cheap weapons will not win a war. And if we cannot win a war, there is no sense in spending money on weapons at all.

Secretary of Defense Rumsfeld has said: "People keep wistfully looking for a way to provide for our national security that doesn't cost much. I'm afraid that life isn't like that."

Rarely in naval history have the leaders looked far enough ahead. They generally build ships they consider to be adequate for the present. That is why, frequently, naval leadership has been replaced once war broke out.

We should be planning now for war that may erupt 15 or more years from now. Therefore, I agree with the policy recommended by the House Armed Services Committee that now is the time to establish a firm program for making all new major combatant ships for our striking forces nuclear powered. I consider this should be a matter of national priority.

For the reasons I have presented, I consider it urgent that we proceed now with the next nuclear carrier, the nuclear strike cruiser program, and conversion of the cruiser LONG BEACH to AEGIS.

Admiral RICKOVER. My statement presents my views as to why the Navy and the country need more nuclear powered ballistic missile submarines, attack submarines, aircraft carriers and strike cruisers. I have attempted to set forth a clear rationale for the recommendations I make.

There is not time here to read my entire statement. And I am abbreviating this, too, so as not to repeat anything.

In some of my remarks I may express views contrary to those of my superiors in the Navy and those in the Department of Defense. You are aware that there have always been differences between my opinions and those of my superiors.

I must make it clear that I claim no superior wisdom. Furthermore, my superiors have more responsibilities and problems different and more onerous than mine. And these responsibilities and problems may require different solutions than I propose. I make no claim that my views are right and theirs are wrong. I can only say what I think and what I believe.

I had a discussion with a Defense Department official this morning. And I repeated what Luther said. He said, "Here I stand, I cannot do any other." And I think as far as my attitude is concerned that is where I stand. So anyone that is a Protestant in this room will appreciate my statement.

MISSION OF U.S. NAVY

Today, the Western world depends on the strength of the United States. Short of all out nuclear war, this strength depends on the ability of the U.S. Navy to maintain the sea lines of communication to our allies. If the Soviets could prevent our Navy from assuring the flow of men and material across the seas, none of our armed services could conduct overseas military operations in any area where the Soviets choose to challenge us.

In this regard, it must be borne in mind that the mission of the U.S. Navy to insure free use of the seas so as to defend us and our maritime allies is much more difficult than the mission of the Soviet Navy which is to deny us the free use of the seas. It is much more difficult to forge a chain than it is to cut a link.

The Soviets have made rapid progress in the design and construction of nuclear submarines in particular, as well as the rapid expansion and improvement in the capabilities of their surface combatant fleet. As a student of naval history, I am concerned that there has never in peacetime been anything comparable to the current growth of Russian naval power. We need to view these efforts critically because such actions appear to be inconsistent with, if not a repudiation of, efforts to reduce tensions between the superpowers.

On pages 4 through 9 of my prepared statement I have summarized the submarine and major surface combatants of the Soviet and United States Navies: Please note that on page 9 I conclude that:

Overall, I believe that our surface Navy is still more powerful because of our aircraft carriers. However, even this is not reassuring since, as a land power, the Soviets do not have to depend on sea lines of communication to conduct military operations. As a maritime power, we are dependent upon being able to control sea lines of communication in order to conduct military operations overseas. The mission assigned to our Navy is a far more difficult task than the Soviet Navy mission of preventing our Navy from maintaining such control. In light of the developments I have just described, it should be apparent that the threat we face from Soviet expansion is real and ominous.

The next subject is the Trident. On pages 10 through 12 I address the need of the Trident submarines.

There is general acceptance that our nuclear powered ballistic missile submarines are a vital element of our Nation's deterrent to all-out nuclear war. The Trident program proposed by the Department of Defense for fiscal year 1977 includes construction funds for only one ship—the fifth submarine of the class. Originally the Trident program was planned to include construction of three submarines every year after the lead ship. Last year, two submarines were planned for fiscal year 1977, but the program was stretched out again, resulting in added costs. The Navy has estimated that the program stretchout proposed this year will add about \$225 million to the cost of the first 10 Trident submarines.

The Polaris and Poseidon submarines are wearing out and we must plan now for an orderly construction program to provide replacements. I believe Congress understands the importance of our ballistic missile submarine force as a deterrent to nuclear war. I recommend that the committee not allow more delays in this program, which is vital to our national survival.

SSN-688 CLASS SUBMARINE

The next subject is the high-speed SSN-688 class submarine. And here before I start I must thank the chairman and this committee, because several years ago, without your going into very extensive hearings there would not have been these submarines today.

Our nuclear powered attack submarines are the best antisubmarine warfare weapons system we now have. In fiscal year 1975, the building rate for nuclear attack submarines was reduced from five per year to five every 2 years. Because of fiscal constraints, the planned building rate starting in fiscal year 1978 was recently reduced further to two per year. Considering the rapidly improving quality and expanding number of Soviet nuclear submarines, I consider this to be an inadequate building rate. I have repeatedly recommended that we restore the building rate to a minimum of five ships per year.

SUBMARINE BUILDING CAPACITY

If this building rate were approved, the Navy would probably have to increase its submarine building capacity to include yards other than the two currently engaged in submarine construction.

Current SSN construction status at Electric Boat and Newport News indicates that capacity is available to construct the fiscal year 1977 SSN's. Electric Boat is currently in a more favorable position to achieve earlier schedule completion dates for the fiscal year 1977 SSN's in view of other SSN's under construction under prior year contracts. Electric Boat Division has increased their facilities to be able to build two Tridents per year plus three SSN-688 class submarines per year. Newport News is facing a reduction in their workload after fiscal year 1978 if additional ship construction contracts are not awarded before that time. If for any reason the situation at these two yards deteriorated and their capacity to construct these submarines was not achieved, then the Navy would still have the alternative of moving to a third source for these SSN's.

For example, recently Ingalls' Shipbuilding Division representatives informally advised NAVSEA that their shipyard intended to submit a letter shortly, expressing interest in reentering the nuclear attack submarine construction field. Also, the Deputy Secretary of Defense on April 21, 1976, advised the Navy that "it would seem prudent to consider allocating the three SSN's (688 class) of the fiscal year 1977 program to a naval shipyard." The introduction of Ingalls and/or a naval shipyard into the SSN-688 class building program would probably result in an increase in construction duration and cost for any SSN's built at these shipyards. However, in any case, there is sufficient capacity to build the fiscal year 1977 SSN's. The SSN-688, the first ship of the new class of high-speed attack submarines, will be delivered this summer. Twenty-eight ships of this class are under contract. The fifth ship, the *Memphis*, was launched last month. I am convinced that when these ships join the fleet, they will be in great demand to carry out many high priority missions.

I might pause here and tell you what my concept was at the very beginning. I always envisioned this submarine as being fast enough to accompany surface task forces, and even get out ahead of the task forces and act in the same capacity as surface escorts do. I believe you will find, for reasons which I can't discuss in this open meeting, that this will probably be the case.

I would now like to address the subject of nuclear propulsion in surface warships which is covered in my statement starting on page 14.

ALL-NUCLEAR CARRIER TASK FORCES

Aircraft carriers and AEGIS fleet air defense ships are the only other major combatants currently planned to be built for naval strike forces. These ships are designed to fight in the areas of highest threat and will form the backbone of our first line naval strike forces. Considering the difficulties of providing logistic support in the areas of highest threat, in my view it is essential that our first line warships be given the mobility and flexibility that only nuclear propulsion can provide. The United States has given up any possibility of matching the Soviet Navy in numbers of ships; therefore, our only hope to be able to carry out our naval mission in the areas of highest threat is superior ships. In my opinion, in the 1980's and beyond, in any area where the Soviets challenge us with their best naval forces, we will need all nuclear carrier task forces if we are going to be able to conduct sustained offensive operations.

The decisions currently under consideration concerning whether or not to proceed with a nuclear carrier building program and to what extent nuclear propulsion will be provided for AEGIS ships are of fundamental importance to the future of the U.S. Navy.

NUCLEAR PROPULSION FOR MAJOR COMBATANTS

The justification for providing nuclear propulsion for major combatants has been documented in detail through analysis, the military judgment of senior naval commanders, and experience in the fleet. The systems analysts in opposing nuclear propulsion have relied on the argument that since nuclear propulsion costs more, conventional ships should be built instead. Nowhere in their arguments do the analysts

address the difficulty the Navy can expect to encounter in providing and delivering oil to its major combatants in high threat areas. They base their analyses on the assumption that propulsion fuel can be delivered readily whenever and wherever needed.

If you turn to page 17 of my statement you will see the results of the Navy's latest comparison of life cycle costs of a nuclear and conventional carrier task group. I will summarize that here.

It is true that nuclear surface warships cost more than conventional ships. I don't know why anyone would expect to get the tremendous increase in military capabilities provided by nuclear propulsion without having to pay something for it. However, the most recent cost studies performed by the Navy's Systems Analysis Division, OP-96, show that the overall lifetime cost of an all-nuclear carrier task group is about the same as an all-conventional task group. This study compared the total life cycle peacetime cost of two carrier task groups as follows:

The first one is nuclear, and consisted of a *Nimitz* class carrier, a strike cruiser, and three cruisers of what we call the *Virginia* class—the CGN-38 class—each of which has two missile launchers.

The conventional group consisted of a *Kennedy* class carrier, a non-nuclear strike cruiser, and three CG-26 class modified to have two missile launchers each, and two DD-963 class destroyers.

The nuclear carrier carries 50 percent more ammunition and almost twice as much aviation fuel as the conventional carrier. The weapons systems in both forces were assumed to be the same, except the conventional force has two DD-963s extra. The undiscounted life cycle cost of the nuclear force was calculated to be 1.3 percent more at today's fuel oil prices, and 1.9 percent less if the price of oil doubled, all other things being constant. Thus, the two task forces are, for all intents and purposes, equal cost forces in total life cycle cost.

INCREASED CAPABILITIES OF ALL-NUCLEAR TASK GROUP

The question of the value of the markedly increased capabilities of the all-nuclear task group compared to the conventional task group then depends on the judgment as to whether the increased offensive capability and mobility of the all-nuclear force is worth the cost of two DD-963 class ASW ships. In making this judgment, it should be recognized that the entire conventional force would be totally dependent at all times on a secure source of propulsion fuel. Further, about 15 percent of the time one of the six conventional escorts would be off station for refueling by the carrier or an oiler which would accompany the force. The vulnerability of the whole force would be increased during this period due to restrictions on course and speed during refueling. If the carrier has to fuel the escorts, the carrier operations are restricted while an escort is alongside. If an oiler accompanies the force, then the whole force is restricted to the speed capabilities of the oiler, and the carrier escorts must also protect the oiler.

If it is necessary to retire from the high threat area for replenishment, the nuclear force would not have to replenish until its larger capacity of aviation fuel and ordnance had been expended; whereas, the conventional force would have to retire for replenishment of ship

propulsion fuel even if it had not expended its smaller amount of aircraft fuel and ordnance. In this regard, of the total fuel expended by a conventional carrier task force, one-third is used by the carrier, one-third by the escorts, and one-third by the aircraft during intense operations. The carrier and the escorts, of course, continue to use up their fuel and require replenishment even when aircraft are not being used at a high tempo.

The next page I have is on aircraft carriers. My views on that are discussed on pages 19 through 25 of my prepared statement. I request your permission not to discuss that, because I believe you heard from the Secretary of Defense yesterday that in a meeting with the President it was agreed that the administration would recommend to your committee to follow the House line of effort to include long-lead funds in fiscal year 1977 for the next nuclear carrier. Is that satisfactory, to save time?

The CHAIRMAN. For the time being. Some may want to come back to it.

Admiral RICKOVER. Now, on pages 25 to 32, I address the specific advantages of nuclear propulsion for surface ships. Just as I recommend that new aircraft carriers be nuclear powered, so do I recommend that new guided missile major combatants built for strike forces be nuclear powered.

Strike forces are all I am talking about, I am not talking about the entire Navy. The strike forces only represent a relatively small number of ships.

Previous studies have shown that each time a nuclear ship is substituted for a nonnuclear ship in a carrier task group, the capability of the task force as a whole will improve, with the greatest gain being made when the all-nuclear task group is achieved. The all-nuclear carrier task group has greater capability to penetrate and counter the projected Soviet naval threat than any other naval surface force we know how to build.

CONVENTIONAL WARSHIPS VULNERABLE TO OBTAINING OIL SUPPLIES

It was the concern for fuel for naval ships in time of war that led to establishment of the naval oil reserves, which are now being considered as a quick source of additional oil during the present shortage. But even if part of this reserve is still available during a future war, it will also be necessary to have the oil at hand where it is needed, before it can be used. Of what value is an oil-fired warship if it is unable to get oil? It is the need for a reliable worldwide fuel distribution system that is the Achilles heel of our oil-fired Navy. The difficulty in obtaining foreign oil supplies to support operations in the Mediterranean and the Indian Ocean during crises in recent years amply shows this vulnerability.

I will now talk away from this statement. You can see what is going to happen in wartime with the large number of Soviet submarines available with these 200,000, 300,000 and 400,000 ton tankers. We lost 130 tankers in World War II in the Atlantic. The largest one of those was about 25,000 tons. This didn't disrupt the fuel supply in our country at that time, because we had so much reserve oil in the ground we could just speed up the pumps and take care of all we needed. We can't do that anymore, because we are now importing 40 percent of

the oil we use. And it isn't that the military uses so much. The military uses about 7 percent of the oil produced in this country. Of course we would have to lower the amount of oil for our industrial system; we could get away with some of that. The question is, can you get the oil to where you need it. We had pretty good evidence of problems with that during the 1973 Mideast war when we had to stop some of our naval operations for lack of fuel.

This is the main point I wanted to make about nuclear power for surface ships; that the conventional surface ships can only steam for a few days without refueling, while the fuel in nuclear ships can provide 13 years normal operation and we are now building up to 15 years. Once you build them you don't have to worry about refueling them for 15 years. That means the chances are that you will have practically all of them in service and not be refueling them. You can figure on fighting any modern war, even if it lasts several years, without depending on delivery of oil for your nuclear powered ships. That is the real issue.

MAKING AND STORING NUCLEAR FUEL IN PEACETIME FOR USE IN WAR

Another thing we do with nuclear power, we can make nuclear cores during peacetime and store them in a very small space, just a couple of acres of ground. And we can thereby take care of the equivalent of all the oil we might need for all our major ships during the war.

Another thing that I know full well from my experience during the mobilization and during World War II is the fact that manpower ultimately limits you in a long war. Therefore you have an opportunity with nuclear fuel to make your fuel during peacetime and store it. I think these are valid points if you look ahead for the future. And that is the main rationale for having nuclear power in surface ships.

For submarines it is another story. There is no argument.

If we are concerned that the improving Soviet naval capability will increase the vulnerability of our first line strike forces then we must recognize it is no longer reasonable to assume that our underway replenishment groups can be operated with impunity. The all nuclear carrier task group, having essentially unlimited high speed endurance, carrying more combat consumables which permits longer periods between replenishment, and with the capability to retire at high speed for replenishment in low threat areas, has far greater capability to conduct sustained combat operations than any other surface naval force we know how to build. Against a sophisticated naval threat, it could quickly turn out that our ability to conduct sustained combat operations would be controlled by the logistic support available. Under such circumstances the all nuclear carrier task group has far greater striking capability than a conventional group.

When logistic supply lines are attacked during a real war, the decrease in the requirement for ships' fuel for the strike forces will have a compounding beneficial effect. The surviving fuel transportation and storage facilities can then all be concentrated on getting fuel for aircraft and other military vehicles to the forward areas. The escorts that would otherwise be required for the tankers which carry ships' fuel could then be assigned to assuring the safety of other supplies.

AEGIS SHIPS

Next is the question of AEGIS ships. Probably the most controversial decision the Congress is faced with this year concerning the shipbuilding program is whether all the AEGIS ships to be built for naval strike forces will be nuclear powered, or whether the 5-year program proposed by the Department of Defense to build two nuclear ships and eight conventional ships will be approved. This decision will have a profound effect on the future of the U.S. Navy. Therefore, I have discussed the AEGIS issue in detail in my statement on pages 36 to 48.

Admiral Holloway became Chief of Naval Operations in July 1974, a month before title VIII became law. This title, as you know, requires all major surface warships for the strike forces to be nuclear powered. Based on his review of future shipbuilding plans, Admiral Holloway recommended that future carriers be nuclear powered. He also recommended that future cruisers be nuclear powered. He also recommended, and the Navy adopted his position, that the Navy build 18 nuclear powered strike cruisers, CSGN's, in lieu of the prior proposed mix of 16 nonnuclear and 8 nuclear ships with AEGIS.

This number of 16 conventional and 8 nuclear was decided by Admiral Zumwalt, the previous Chief of Naval Operations.

In a letter of December 6, 1974, to the chairman of the Seapower Subcommittee of the House Armed Services Committee, Admiral Holloway proposed a 4-year program for building AEGIS ships. This program called for six nuclear powered strike cruisers, CSGN's, to be authorized in the 4-year period from fiscal 1977 through fiscal 1980, and no conventional AEGIS ships.

The Navy subsequently recommended to the Secretary of Defense that, in addition to all new construction AEGIS ships being CSGN's, AEGIS should be introduced into the fleet by converting the nuclear cruiser *Long Beach* to AEGIS as soon as possible. The Defense Department disapproved the 18 CSGN program proposed by the Navy. The Navy continued to recommend that the first new AEGIS ship be a CSGN in fiscal year 1977 with advance procurement funds in fiscal year 1976. The Defense Department cut the Navy's fiscal year 1977 budget and persuaded the Navy to recommend in the fiscal year 1977 program a DD-963 type ship with AEGIS; this was named the DDG-47 class.

You know what persuaded means in the Defense Department. You are told, if you don't go along with what we want to do we are going to hurt you somewhere else in your organization. It is like a jailer with a man and his two children. The jailer says, if you don't do what I want I am going to take one of your children out and execute him. That is what the various departments in the Defense Department are faced with—as you well know, Senator Symington, from your own experience serving under this system.

NAVY PROGRAM FOR NUCLEAR STRIKE CRUISERS

In June 1975, the President disapproved this DOD/Navy recommendation and requested Congress to provide advance procurement funds in the fiscal year 1976 budget for the first CSGN to be authorized in the fiscal year 1977 program. The Congress did not authorize the long lead funds. A few months ago the Navy program had been changed to four nuclear strike cruisers to be built over the next 5 years, along with seven conventional ships.

In the program now proposed, there are only two nuclear strike cruisers and eight conventional AEGIS ships to be built in this 5-year period. The second CSGN would be delivered in 1986, about the same time as the sixth nuclear powered carrier, the CVN-72, if the two nuclear carriers now in the 5-year Defense plan are approved. Thus, when all of the ships planned for the fiscal years 1977-81 5-year program are delivered, we will have six nuclear carriers and only two nuclear AEGIS ships. There will also be six to eight aging conventional carriers and eight new nonnuclear AEGIS ships. This is the imbalance we would get, where the important nuclear carriers would not have AEGIS ships, and the less important oil-fired ones would.

AEGIS is planned as our most capable AAW weapons system. Because AEGIS ships will be expensive, regardless of their means of propulsion, there will never be a large number. In a naval war against an enemy employing sophisticated weapons systems, all strike force AEGIS ships will be needed in the areas of highest threat. It is under just such circumstances that the advantages of nuclear propulsion are most urgently needed to maximize mobility and minimize logistic support. It is into such high threat areas where the nuclear carrier task forces will be sent in time of war and they will need nuclear powered AEGIS ships to accompany them. The AEGIS ships should be nuclear for the same reasons that carriers should be nuclear.

In areas where the threat is great enough to require nuclear carriers and AEGIS ships—our first line naval strike forces—it is highly unlikely that oilers could survive. When a nonnuclear AEGIS ship runs low on fuel, it will be necessary to remove the AEGIS ship to an area of lower threat to meet the oiler, losing the AEGIS protection just when it is most needed.

The CSGN also has unique capability for independent operation in areas where carriers are not available and its cruise missiles and 8-inch gun can provide sufficient offensive power.

NUCLEAR-POWERED GUIDED MISSILE SHIP CAPABILITY BOTH FOR ATLANTIC AND PACIFIC FLEETS

Another consideration is that to have a credible nuclear powered guided missile ship capability in both the Atlantic and Pacific Fleets, it is necessary to build a reasonable number of nuclear ships so that some ships are available for immediate deployment at all times. Even if all 10 AEGIS ships presently planned to be authorized over the next 5 years are given nuclear propulsion, the Navy would still have a total of only 19 nuclear powered guided missile ships in both oceans in the 1980's. It is my opinion that the fleet commanders of that period will consider this to be the minimum needed, considering the problems we can foresee today.

CONVERSION OF NUCLEAR CRUISER "LONG BEACH"

The next item I will address is the conversion of the nuclear cruiser *Long Beach* to AEGIS. This has been a subject of considerable discussion. And I believe that this time you will probably get the first definitive statement on that subject, because there have been a lot of different arguments presented to this and other committees.

The quickest and cheapest way to get the first AEGIS production unit into the fleet is to convert the nuclear cruiser *Long Beach*. If \$371

million of initial funds are provided in fiscal year 1977, the ship can be at sea with AEGIS late in 1981 or early 1982 at a total cost of \$785 million. This would increase by 6 years that portion of the *Long Beach* life during which it would have the AEGIS system compared to present Navy plans, and would provide another nuclear powered AEGIS ship much sooner. The *Long Beach* is not expected to require refueling before 1988. If the ship is converted to AEGIS with 3 years in the yard, refueling will not be required before 1990. If the ship is ever to be converted to AEGIS, I recommend it be done as soon as possible.

I think, Mr. Chairman, that you have had quite a number of conflicting statements on this. But if AEGIS ships are important you want to get one to sea as quickly as possible and as cheaply as possible. And this is the way to do it.

The CHAIRMAN. When would the next one come after this *Long Beach*?

Admiral RICKOVER. I recommend the *Long Beach* conversion be done regardless of what else you do on new construction. The plan now is to build both new nuclear and conventional AEGIS ships. You have got to have AEGIS anyway. But you would probably get the *Long Beach* finished about the same time as the very first one of the DDG-47 class as now planned.

Mr. LEIGHTON. Mr. Chairman, the first nuclear strike cruiser new construction is planned for delivery at the end of 1983, which is about 2 years after you would finish the conversion of the *Long Beach*.

The CHAIRMAN. All right. Pardon me for interrupting you.

Admiral RICKOVER. I hope you will continue to do so, sir.

Next is the comparison of the nuclear strike cruiser and the conventional ship.

I have a table here which compares CSGN and DDG-47.

[The table follows:]

[Extract From House Report 94-967, March 26, 1976]
COMPARISON OF CSGN AND DDG-47 MILITARY CHARACTERISTICS

Feature	CSGN	DDG-47	Difference/comments
Missile launchers	2-MK26 Mod 2	2-MK26 Mod 1	45 percent more missiles in CSGN.
Antiship missiles	16 Harpoon	8 Harpoon	Twice as many in CSGN.
Cruise missile	8 Tomahawk	None	CSGN has 5 times Harpoon range and can cover about 25 times the area.
Guns	1 8-in.	2 5-in.	CSGN can cover about 9 times the area with gunfire as DDG-47.
Aircraft	VTOL or Helo	Helo only	VTOL increases long-range targeting sensor projection.
Task Force Coordination Center and unit commander facilities.	Yes	No	
Toxological protection	Yes	No	Provides isolation from chemical and biological attack.
SSES	Yes	No	Electronic intelligence and analysis system.
Air-blast resistance	Twice DDG-47		Increased protection against air-blast.
Propulsion	Nuclear	Gas turbine	Nuclear cores expected to last 15 yr, equivalent to 3,000,000 barrels of oil.
Fragmentation armor	Yes	No	Over 1,000 tons added to CSGN displacement.
Length	660 ft.	529 ft.	
Beam	77 ft.	55 ft.	
Displacement	17,210 tons	9,055 tons	
Manning	563	312	CSGN includes 73 embarked for air, SSES, unit commander. DDG-47 includes 21 embarked for air, 1 flag officer.
Sonar	SQS 53	SQS 53	
Radars:			
2 dimensional	SPS 49	SPS 49	
3 dimensional	SPY 1	SPY 1	

The committee is not convinced that the DDG-47 is a suitable AEGIS platform. Nor does it believe that the costly AEGIS system and associated weapons should be placed on a ship which is as vulnerable as the DDG-47. Considering the vast differences in military characteristics between the DDG-47 and the CSGN, we believe that, over the lifetime of the ship, the CSGN is the most cost-effective AEGIS platform.

MILITARY FEATURES OF CSGN

Admiral RICKOVER. In addition to nuclear propulsion, the nuclear strike cruiser proposed by the Navy has significantly greater military features than the DDG-47 gas turbine powered AEGIS ship included in the President's fiscal year 1977 budget request:

The anti-air warfare missile magazines in the CSGN carry 45 percent more missiles and there are twice as many Harpoon anti-surface missile canister launchers, 16 in lieu of 8.

The strike cruiser is designed to carry eight Tomahawk ship-launched cruise missiles, whereas, the DDG-47 does not have space to carry this system. Each of these missiles has five times the range of the Harpoon missile and twice the explosive power. Thus, the strike cruiser will be able to bring within anti-surface missile range, targets in an area 25 times that covered by the DDG-47.

The strike cruiser will carry an 8-inch gun in lieu of two 5-inch guns in the DDG-47. The range of the projectiles that will be available for the 8-inch gun is expected to be greater than the range of the 5-inch gun projectiles; the strike cruiser will thus be able to bring within gun range an area about nine times larger than the area covered by the DDG-47.

Either ship can carry helicopters; but the aircraft handling facilities in the strike cruiser will be larger; so that it will be able to carry two VTOL aircraft; this will greatly increase its targeting capabilities at long ranges.

The strike cruiser will have several other features not included in the DDG-47. It will have a task force coordination center, as well as accommodations and facilities for a unit commander and his staff. It will also have the SSES electronic intelligence and analysis system; this is not included in the DDG-47.

The displacement of the strike cruiser has been increased over 1,000 tons to provide fragmentation armor not in the DDG-47. It is also being designed to provide systems to isolate ship internals from chemical and biological attack. The strike cruiser also has greater space and greater electrical power capacity for future weapons systems modifications.

I thoroughly agree with the Chief of Naval Operations' decision to include the additional military features in the nuclear strike cruiser. These, combined with nuclear propulsion, give the strike cruiser far greater capabilities than any other surface warship in the world, except the aircraft carrier.

COST ACQUISITION COMPARISON OF DDG-47 WITH CSGN

Now I will compare the strike cruiser with the DDG-47 cost. The increase in estimated acquisition cost of buying the first AEGIS ship as a CSGN, in lieu of DDG-47, is about \$490 million in fiscal year 1978 program dollars. Of this amount, about half is due to the difference in military characteristics other than propulsion. The remainder is due to the higher acquisition cost of nuclear propulsion, including the initial nuclear fuel which will provide 15 years of ship operations. The cost of buying and delivering oil is not included in the acquisition cost

of a conventional ship. At today's prices, it would cost about \$90 million to buy and deliver an amount of oil for the conventional ship which would provide the amount of energy equivalent to the energy in the nuclear cores of the strike cruiser.

FEWER NUCLEAR SHIPS DO SAME JOB AS GREATER NUMBER CONVENTIONAL SHIPS

Navy studies and actual experience at sea have shown that even with the same weapons in nuclear and conventional ships, it takes fewer nuclear ships to do the same job as a greater number of conventional ships. In this regard, I have compiled data on the underway steaming of the *Long Beach*, *Bainbridge*, and *Truxtun* since 1968 during which time these ships were assigned to the Pacific Fleet. I have also compiled data on the underway steaming for eight non-nuclear cruisers also assigned to the Pacific Fleet. The three nuclear ships, exclusive of overhaul periods, have averaged 3,480 hours underway per year since 1968 with a maximum for any one ship in a year of 5,648 hours underway. The eight non-nuclear cruisers, exclusive of overhaul periods, averaged 2,730 hours underway per year with a maximum for any one ship in a year of 3,667 hours from fiscal year 1974 to the present time. I was unable to obtain data for the non-nuclear ships prior to fiscal year 1974.

Thus, the nuclear ships have been averaging about 27 percent more time underway than their conventional counterparts in the Pacific Fleet. I anticipate this ratio will increase as a result of recent instructions to the fleet to reduce the operating tempo of nonnuclear ships further due to the high cost of oil and budget constraints. In this regard, it should be borne in mind that as annual underway time is reduced due to budget constraints, opportunities for crew training are reduced and therefore operational readiness for combat may be affected.

Further, Navy studies over many years have shown that when all costs of a carrier task group over its life are considered, substitution of nuclear powered escort ships for conventional ships with the same weapons increases the overall peacetime cost of a carrier task group only about 1 percent for each escort changed to nuclear propulsion. This would also be true for a nuclear strike cruiser compared to a conventional strike cruiser having the same military features other than propulsion.

ADDED MILITARY BENEFITS OF NUCLEAR PROPULSION FOR AEGIS SHIPS

Taking into consideration the declining number of overseas bases and the difficulties that will, in future, be encountered in delivering propulsion fuel in areas of highest threat, and when all costs of nuclear and conventional ships are taken into consideration, I believe that the added military benefits of nuclear propulsion for AEGIS ships are well worth the additional cost involved.

Historically, the United States has relied on the quality of its weapons and the ability to manufacture them in large quantities to win its battles, rather than on large numbers of men. The American people do not appear to be willing to support large numbers of men

under arms. Further, the complexity of modern weapons and the rapidity with which major wars can now be started preclude relying on wartime production capacity to furnish our weapons; we must plan to fight a major war with the weapons we have at its outbreak. I believe we would be following a shortsighted path if we do not provide our first line striking forces with the best weapons our technology can provide.

That ends the prepared part of the summary of my statement, sir. And I would appreciate very much if you or any of the members would ask questions. I can do much better that way.

The CHAIRMAN. The Admiral has agreed that he will take the responsibility of making a judgment on whether or not a question should be asked and answered in open session. For the time being I will pass and call on Senator Thurmond.

Senator THURMOND. Admiral, first let me make it clear that your invitation to testify on our nuclear ship program was a bipartisan one, as Senator Symington joined me in urging your appearance. I feel sure that the other members of this committee welcome your testimony, and respect the farsighted and courageous guidance you have given our nuclear shipbuilding program.

Now, there are three nuclear ship issues which appear to be receiving special study by this committee. First, long-lead funds for a new aircraft carrier. Second, the nuclear attack submarine program. And third, the cruiser program.

Yesterday Secretary Rumsfeld stated the administration favored long-lead funds for a new carrier, and the Navy supported this request. This long-lead money should have been provided last year as we already have a longer than usual gap in carrier construction. And that is going to drive up the cost of this ship.

No. 2, even those who voted against engineering development in the strategic cruise missile argued that our Nation did not have enough attack submarines. I believe Senator Taft favors adding long lead for a fourth sub. So I would yield to him on that proposal.

That leaves the cruisers, which was discussed somewhat yesterday by the Secretary of Defense and the Chief of Naval Operations, Admiral Holloway, who appeared as acting chairman of the Joint Chiefs since General Brown is out of the country.

Admiral Rickover, I was interested in some of the testimony on the cruisers. For instance, it was stated that a big difference in the cost between the nuclear and conventional cruisers was due to the fact that the nuclear cruiser carries much better weapons capability.

I think you have answered that, probably, in your statement already.

Admiral RICKOVER. The detailed numbers are contained in my full statement, sir.

Senator THURMOND. I notice in your statement on page 15 you note that the Navy has traditionally asked for nuclear power for these major ships, but was persuaded otherwise by systems analysts in the Defense Department. You indicate that the original Navy request for the cruisers with AEGIS in the fiscal year 1977 budget to be nuclear ships rather than the conventional mix finally presented to Congress. Would you care to comment any further on that?

Admiral RICKOVER. Yes sir, I will comment on that.

This is along the line where I reminisced with Senator Symington about the time he was Secretary of the Air Force. He knows the systems that are used by the Department of Defense to get people in each service to "volunteer" for certain programs. A gun is held at your head, if you don't "volunteer" you won't get anything. The DOD persuaded the Navy to recommend the present mix—I use that word persuaded advisedly—and that is what it is. In this testimony of mine I have a complete official record of what happened. The Navy kept on requesting nuclear ships. The systems analysts, who essentially run the Defense Department, kept on saying that we shouldn't have them, and that is that. I am sure, sitting here in this room all the time, you are aware of the facts of life, too, sir.

Senator THURMOND. Thank you.

Admiral, there was some discussion yesterday of a reference to a mix for Navy ships due to fiscal restraints. I see nothing wrong with a mix. But my point is that our country should not downgrade major combatants with conventional power and then put on them the AEGIS defense system designed for the high threat area. That is no mix. It is a bad mistake. A mix is powerful ships for high-threat areas, and less powerful ships for low-threat areas, is that correct?

Admiral RICKOVER. Yes sir.

FIVE-YEAR CRUISER BUILDING PROGRAM

Senator THURMOND. Frankly, I am afraid we are embarking this year on a cruiser building program which will give us inferior ships in the 1990's and beyond. The oil situation then could be critical. This 5-year cruiser plan, two nuclear and eight conventional, amounts to a move to a second rate Navy. The House has recognized this and changed this program.

Yesterday Admiral Holloway testified, we need at least two AEGIS ships for each nuclear carrier. In a few years we will have four nuclear carriers. But this 5-year plan provides only two nuclear strike cruisers for the escort force. It seems to me the shipbuilding budget proposal contradicts Admiral Holloway's testimony. Would you comment on that?

Admiral RICKOVER. Yes sir, it does contradict it. And I pointed out in this condensed statement that Admiral Holloway consistently asked for nuclear strike cruisers for the nuclear aircraft carriers, but he was "persuaded" by the Defense Department to ask for the others.

Senator THURMOND. Also I am not convinced at all that when all factors are considered that the nuclear cruisers are more costly than the conventional cruisers. The House report is very convincing that when we weigh the additional capability of the nuclear ships to include more weapons and no oil requirements, the nuclear ships give us much greater power for minimal higher cost. Secretary Rumsfeld made that point. But again his testimony does not interface with the budget request. What are your views on this contradiction?

I realize you have covered some of it, but would you care to say anything further?

Admiral RICKOVER. The cost difference is not that much, sir. On a philosophical basis I could make this observation. A rifle costs about five or six times as much today as it did in World War II, so we should

only have about one-fifth the rifles. I think a B-1 bomber costs quite a few times as much as a bomber did in World War II. Should we only buy one or two bombers now?

The whole thing is ridiculous. What you get all the time in making these comparisons on a cost basis entirely is simply that we shouldn't buy the better weapons because they cost more. The systems analysts whole stock in trade is to point out that a new weapon is more expensive than an older weapon. The reason they find favor in the Department of Defense is because when they have budgetary problems here is a group of people that will tell them how to solve the problem. The analysts produce lots of calculated equations, and so on, and come up with a very simple answer that any housewife knows. If you want to spend less money you don't buy the expensive things. It is very simple.

Now, in the case of a grocery store it may not make too much difference. But in the case of national defense it can make a terrific difference. When the Navy wanted more carriers but was against nuclear power for carriers, I said: Why don't you get carriers with sails? You have more of them. Or why don't you get bows and arrows instead of guns? You could do that, too. That is about all the systems analysts come up with, they prove some things are cheaper. But when you have a determined enemy that has devoted a major part of his national income to military affairs and appears to be engaged in an attempt to be the dominant nation on Earth, the United States cannot afford to act that way.

Now, if the Russians came out and said, they will sink their entire Navy if the United States would do that with ours, I would be willing to do that. I would not object to that. Or if the Russians wanted to sink all their nuclear submarines if we would sink ours, I would go along with that. On the other hand, our systems analysts a few years ago suggested unilaterally sinking 10 of our Polaris submarines and not building any more submarines after 2 more years. That is the kind of stupidity I very much object to.

Senator THURMOND. Also I would like to have placed in the record some quotes on the oil shortages we will face during the lifetime of these large conventional oil fired cruisers.

The CHAIRMAN. Without objection, it will be agreed to.

[The above referred document follows:]

OAK RIDGE NATIONAL LABORATORY

"If domestic oil production were to continue at the 1974 rate, known and undiscovered recoverable resources would be exhausted shortly after the year 2000."

HOUSE ARMED SERVICES COMMITTEE REPORT

"The major ships which the Congress authorizes this year will not enter the fleet until 1984 or 1985. If these ships were to be oil fired, they would only be at their mid-lives in the year 2000. If they were to operate at all in that time period they would do so in an oil-short world."

JOINT COMMITTEE ON ATOMIC ENERGY

"World-wide petroleum and natural gas supplies may be deemed reliable for perhaps only another 30-50 years."

DR. M. KING HUBBERT, RESEARCH GEOPHYSICIST, U.S. GEOLOGICAL SURVEY QUOTED
IN JOINT COMMITTEE ON ATOMIC ENERGY REPORT

"A child born in 1930 will have lived through the period during which 85-90 percent of all the petroleum and natural gas underlying the 50 American states will have been consumed; a child born in 1960 will probably live through the period when a similar fraction of all of the petroleum and natural gas on the planet will be consumed."

Senator THURMOND. Admiral, I was struck by a paragraph that I read in a paper on AEGIS ships. I would like to read it to the committee and ask you to comment on it:

According to present plans, by 1986 we will have six nuclear carriers in the fleet. There will be eight aging Forrestal oil-fired carriers. The current 5-year cruiser building program provides only two nuclear AEGIS ships for the six nuclear carriers, and there will be eight new conventional AEGIS ships at the time when the Forrestal carriers will be approaching retirement.

Is that assessment correct?

Admiral RICKOVER. The statement is correct, sir. That is essentially in accordance with what the Department of Defense is recommending to this committee. At the time when these aging conventional carriers are about to go out of service we will have eight brand new conventional AEGIS ships. When you have six nuclear carriers you will only have two nuclear powered AEGIS ships.

Senator THURMOND. Your statement clearly shows that the cost of nuclear cruisers over conventional cruisers is minimal when all factors are considered. Would you track the cost comparisons briefly for the committee.

Admiral RICKOVER. Yes, sir. It is on page 45.

ESTIMATED ACQUISITION COST OF AEGIS SHIP AS A CSGN

The increase in estimated acquisition cost of buying the first AEGIS ship as a CSGN, in lieu of DDG-47, is about \$490 million in fiscal year 1978 program dollars. Of this amount, about half is due to the difference in military characteristics other than propulsion. The remainder is due to the higher acquisition cost of nuclear propulsion, including the initial nuclear fuel which will provide for 15 years of ship operations. The cost of buying and delivering oil is not included in the acquisition cost of a conventional ship. At today's prices, it would cost about \$90 million to buy and deliver an amount of oil for the conventional ship which would provide the amount of energy equivalent to the energy in the nuclear cores of the CSGN.

A comparison which would bring about the added procurement cost of having all nuclear AEGIS ships would be to compare the cost of the seven nuclear strike cruisers included in the President's alternative all-nuclear program cited in his letter of February 13, 1976, to the Congress to the cost of a mixed program of two nuclear strike cruisers and six conventional ships with the same military features other than propulsion. This is two less conventional ships than in the currently approved mixed program of eight DDG-47 class ships and two nuclear strike cruisers. The cost of buying and delivering an equivalent amount of fuel oil for each conventional ship should also be included in the cost of the mixed program, since the nuclear fuel cost is included in the procurement cost of the nuclear ships.

The cost of the seven nuclear strike cruisers is estimated to be \$8.530 billion. The cost of two nuclear strike cruisers and six conventional DDG-47 class ships is estimated to be about \$6.298 billion. To this should be added \$1.5 billion to give the six conventional ships the same military characteristics as the nuclear strike cruisers, and \$.540 billion at today's prices for the cost of buying and delivering 3 million barrels of oil to each conventional ship. This gives a total for the mixed program of \$8.338 billion. This is only \$0.192 billion less than the cost of the seven nuclear strike cruisers.

By going through the whole exercise you save two-tenths of a billion dollars and get one extra conventional ship.

Thus, when the all-nuclear program of seven strike cruisers is compared to a mixed program of two nuclear strike cruisers and six conventional ships having the same military characteristics, the extra cost of the all-nuclear program is seen to be about two-tenths of a billion for one less ship.

Senator THURMOND. Thank you very much, Mr. Chairman.

The CHAIRMAN. All right. Senator Symington.

Senator SYMINGTON. Admiral, it is always good to see you. I congratulate you on the fine work that you have done for your country over many, many years. We don't agree on everything, but that is America.

I have three questions I would like to ask you this morning. As you know, there has been nobody more supportive of submarines than I have over the years. And there is a story around that you could get the same range out of the Poseidon, 6,000 miles, as you can out of the Trident if you reduce the number of warheads. Is that true?

Admiral RICKOVER. That may be true, but I cannot answer that question. This issue has been raised a number of times. And the question comes up: "Why have Trident?" That is really the question you are getting to.

Senator SYMINGTON. From a cost effective standpoint that is exactly what I am asking.

Admiral RICKOVER. To get back to cost effectiveness, it is more cost effective to have a 24-missile ship, and considerable studies have been made about that, than to have one with 16, such as the latest Delta class the Russians have.

Senator SYMINGTON. Is it fair to say that in the basic theory of the submarine it would be better to have more submarines and less missiles on each submarine instead of more missiles and less submarines?

Admiral RICKOVER. Yes, sir, from a military standpoint. The original decision was to evaluate having a ship carry the Trident missile that would rest on the Continental Shelf, make 4 knots, and carry 24 or perhaps more missiles. I objected very strenuously to that, I recommended normal submarine speeds and 16 missiles, so as not to put too many eggs in one basket.

Finally the Navy and the Defense Department agreed to 20, which was a compromise, and then the Secretary of Defense said, if he took it up again with the White House there was a chance of losing the Trident altogether. So we dropped the issue. This is why we have 24. There have been several studies made since that time about what would be desirable, and each one of them obviously comes out that the more missiles you have in the submarine, the more cost effective it is.

COST EFFECTIVENESS OF TRIDENT SUBMARINES

Now, to take up the Poseidon proposition, the Trident submarines are new, they are cost effective, as I just explained. They can operate in an ocean area about 10 to 15 times as large as the present Poseidon submarines. They can even fire from a continental land base, so that they can be underway for a short distance and fire their missiles. They can cover any part of the Earth you are interested in.

NEED TO REPLACE OBSOLETE SUBMARINES

Furthermore, they are new, and our submarines are wearing out. All of our existing submarines that have missiles were designed with the technology of the 1950's. So we do need new submarines, regardless. In fact, one of the things that troubles me very much about the present submarines building rate is, even though the Russians are outbuilding us 4 to 1 in nuclear submarines and their submarines are nearly all newer than ours, our submarine plans do not have any concept of replacing our obsolete submarines. The latest plan from the Defense Department is to only build an average of one and a half Trident submarines a year and two attack submarines a year.

Senator SYMINGTON. I wouldn't object if you built 10 or 15 more of attack submarines. I would be for it. But on the other hand, you do have the problem of limited Treasury. And I notice in your statement that you are very strong for carriers. There was a time when we had an argument about carriers and long-range aircraft. So I have always tried to back carriers until the cost got very high. And that was quite recently. But on the other hand, now, you are seeing a development in missilery which is starting to affect everything, high cost bombers, air and sea warfare. You put so much stress on it. After all, a carrier can't have too much armament, it has got to carry a lot of oil and it has got to carry a lot of planes.

INCREASING VULNERABILITY OF CARRIERS IN THE MEDITERRANEAN

As I understand it, the Navy has about 40 percent of all its carriers functioning in the Mediterranean. And you have distances as short as 500 miles when the north littoral of Africa, which is almost entirely controlled by anti-U.S. governments, 500 miles from there to Southern Europe. The first impact of the cruise missile, to the best of my knowledge, was something like the impact of the British when the *Bismark* sunk the *Hood*. And there was the *Elaith* in the Mediterranean, that Israeli destroyer. And that was only the beginning. That was many years ago. It seems to me that a carrier today is increasingly vulnerable for nuclear attack. It would be worth a nuclear attack to get the guts of the carrier task force. It is increasingly vulnerable from the air and the sea, especially when you consider the Mediterranean and the land. Because of my respect for your thinking and your independent thinking, I wish you would comment on that. Nothing has come up recently that changes my opinion. It worries me when you talk about a new carrier, whether it is to be conventional or nuclear.

You see my point?

Admiral RICKOVER. I will say this, Senator Symington. Whenever an attempt is made by the Defense Department to reduce the number of carriers in the Mediterranean, the State Department screams. That is a political fact of life.

Another fact is this. It is obvious that no surface ship will last in a real nuclear war. You don't have to consider any Navy or Army or anything if it is a nuclear war. We hope that by having strong naval forces we will be able—we hope to prevent the nuclear war. But I get back to more philosophy, if we have a Navy which is weaker than the Soviets, then they do not have to have recourse to a nuclear war. They will be able to have large numbers of Angolas without ever going to any kind of war. Therefore, keeping on with this line of thought, the one who may ultimately use nuclear weapons would be the United States, because we would come to the point we wouldn't have any other way to protect our interests. Don't forget, we were the first ones to use nuclear weapons, sir.

Senator SYMINGTON. In the Korean war, there was some kind of stalemate of agreement that they would never hit a carrier. They never attacked a carrier in the Korean war. To the best of my knowledge they never attacked a carrier in the Vietnam war. And certainly if we had a conventional war with the Soviet Union they would hit the carrier, there would be no reason why they shouldn't. What worries me, are we paying for these carriers in order to show our police capacity around the world or are we paying for them because they increase the security of the United States?

CARRIERS PROJECT U.S. STRENGTH

Admiral RICKOVER. You can't completely separate the police capacity, because a powerful weapon is just like a policeman who is armed with a machine gun as opposed to one who is armed with a pistol. We know that carriers are all vulnerable, there is no question about it, they can be sunk. But we incorporate into them as much protection as possible with side protection systems, armor, and extra tankage space, to take the damage from torpedos, protection of decks, and so on. But they are vulnerable as are all ships and land targets. On the other hand, it is the only way, short of having overseas air bases—and you know that our foreign air bases are diminishing all the time—short of having provisioned and protected overseas air bases, the carriers are the only way we know how to project our might right now.

Now, I am not the chief advocate of the carrier. That is something that the Defense Department has to decide. My major point is, if we are to have these large carriers, they should be nuclear powered. I don't think you disagree with me on that point. That is the main thing I am saying.

I remember one time 2 or 3 years ago when we had hearings that were chaired by you, Senator Stennis, about the aircraft carriers, and Senator Jackson made quite a pertinent point. He said, but before they can be sunk, will they be able to launch their weapons, and the answer is yes. I don't know whether you remember that.

Senator JACKSON. I think that is the whole thesis in a general war of having carriers. Otherwise they have no validity.

Admiral RICKOVER. You see, right now, whenever a national crisis occurs they always want the carriers to go. Without the carriers the rest of our surface ships would be much more vulnerable.

Senator SYMINGTON. If there is any limitation advisable from the standpoint of fiscal monetary limitations to the Treasury of the United States, we will now give a billion dollars to the Greeks because they don't like the Turks, we give a billion dollars to the Turks because they don't like the Greeks, and we give a billion dollars to Spain because they are going to allow us to put some bases there. They should pay us, in my opinion, because nobody would hit Spain with our bases there. And so on. And now we are going to give a billion dollars to Africa. And again I say, the only source of attack is on our way of life and income, including profit.

I bought the submarine picture from you a long time ago. I don't see how we are going to have all these things. When I was with the Air Force I said, and I say it again, I think the number one weapon in the world today is the nuclear powered submarine, which is primarily your creation. But I don't think we can have all of this stuff without affecting our economy. Would you comment on that?

Admiral RICKOVER. Yes. Senator Symington, the method I would urge you to use is the one I use. An outfit recently wanted to give me an award. I said, I won't accept your award until you give \$2,500 to donate to charity. Why not try that with the Greeks and the Turks?

Senator SYMINGTON. I am only interested in submarines, not in the Greeks and Turks.

Admiral RICKOVER. Any part of the executive branch can tell you what you need. The decision has to be made by this committee and the Congress. My attitude is a simple one. If you do what I ask you I am very grateful, if not, you are doing your duty.

Senator SYMINGTON. You have explained your presentation on the carriers. And I appreciate that.

The CHAIRMAN. Thank you, Senator.

Senator GOLDWATER. Admiral, I wish the Pentagon were filled with people like you.

Admiral RICKOVER. You couldn't have more than one like me, sir.

Senator GOLDWATER. I have a hunch we could, if we would reward honesty.

I am glad you brought up this question of inflation, which many people forget. I remember in World War I all the aircraft we brought cost \$400 million. In World War II the most expensive bomber we had was \$224,000. Now the modern bomber is over \$80 million. But we might look at it another way. If we applied the waste, just the waste we have experienced in social security crookedness, we could have bought all the airplanes in World War I. So there are other areas that we can explore.

Now, are you willing to accept a lesser number of major ships provided they are nuclear powered?

EXPLANATION OF TITLE VIII

Admiral RICKOVER. Yes sir. But I must qualify that. There is a great misconception about what title VIII states. Title VIII covers submarines, and there is no argument about that. It covers aircraft carriers, and carrier escorts. That is all. It does not cover all the other

ships. Everybody runs around saying that I want a complete nuclear Navy. I don't. I say we can't afford it. But I do say, for these very important ships for our naval strike forces, I would like to have those nuclear powered and if necessary, have fewer other ships.

Senator GOLDWATER. That is what I meant. When I say major ships, I would assume that they would be ships of the line.

Admiral RICKOVER. Yes, sir.

Senator GOLDWATER. And not backup ships.

Admiral RICKOVER. Yes, sir. These are ships for the strike forces, very important ships, and that is all. I do not advocate the others be nuclear powered. We cannot afford them.

Senator GOLDWATER. Assuming the ship construction dollar account remains about as now planned over the next 5 years, are there adequate funds within that planned account to support the nuclear program that you advocate?

CONCEPT OF NUCLEAR POWERED SHIPS FOR STRIKE FORCES

Admiral RICKOVER. There are not at the present time, no sir. The number of carriers we should have is not within my judgment to say. I think the Navy is now reconciled to about 12 carriers. For each of the 12 carriers there should be a minimum of 2 Aegis escorts which should be nuclear powered. There should be perhaps a few other nuclear powered strike cruisers for independent duty where they are needed in an emergency. After that we have submarines, both Trident and attack submarines. This is all I favor. There is not enough money for more. The Defense Department particularly has been cutting money for submarines, which I think is dead wrong. That is due entirely to the systems analysts. I don't know whether they are friends of yours or not.

Senator GOLDWATER. Who is that?

Admiral RICKOVER. The systems analysts.

Senator GOLDWATER. I wish they would throw them all out of the Pentagon.

Admiral RICKOVER. Let's shake hands on that, sir.

Senator GOLDWATER. I have never met one yet that could satisfy me that he knew anything about weapons. And I am not a great believer in cost comparability, or whatever you call it.

Admiral RICKOVER. But that is not in the job description. The job description is, you must know economics and mathematics, not weaponry.

Senator GOLDWATER. It would be a shame, if they knew more about weapons we might be worse off.

There have been discussions about the FFG-7 ships on their utility and whether they are worth the price. The House cut the request to four and said no more. Rather they added DD-963 destroyers to the bill. On the other hand, the revised administration request asked for 12 FFG frigates. What is your opinion about this program?

Admiral RICKOVER. Senator, that is not within my area of competence. I cannot comment on that. Anything nuclear I will talk forever on. I am not an expert on that. You are an expert aviator, and I wouldn't get into your area. You are also an expert politician, and I wouldn't get into that area either, sir.

Senator GOLDWATER. I am not so good at the last.

Thank you very much, Admiral. It is always a pleasure to have you here. And I will repeat what I said before, if we had more like you we would have less trouble.

The CHAIRMAN. Admiral, you said, when you outlined the nuclear Navy as you see it, you would need two or three extra strike cruisers. Was that what you said?

Admiral RICKOVER. For 5 nuclear carriers we would need a total of 10.

The CHAIRMAN. And then you said in addition you would need—

Admiral RICKOVER. I don't think there is any use worrying about the exact number now. Three or four for independent duty might suffice. The important thing in the next few years is to get strike cruisers for the nuclear carriers.

The CHAIRMAN. All right, Senator Jackson.

Senator JACKSON. Mr. Chairman, I think it would be useful if we could get a balance sheet that we can have available to us in terms of amortizing out the cost in relation to the role of the cruiser, nuclear and nonnuclear. I think some very important data has come out here, as I understand it. When we look at the nuclear strike cruiser, the full costs for the life of the ship are included in the cost.

The CHAIRMAN. I have that very thing here as part of the cost comparison. It should go further. I don't know what is available.

Senator JACKSON. I think we ought to know what we are buying. We are all aware of what has happened in the last 3 years in terms of oil costs. Overseas oil has gone from \$1.75 a barrel to \$12 a barrel.

Admiral RICKOVER. A barrel of oil delivered to a Navy ship now costs about \$30. That includes the delivery cost at sea. You don't need that for nuclear powered ships.

Senator JACKSON. I think there is a whole new dimension, Mr. Chairman, that I would like to ask Admiral Rickover to get his people on it.

Admiral RICKOVER. I will get that.

[The following information was furnished for the record:]

COMPARISON OF FUEL COST OF NUCLEAR AND CONVENTIONAL SURFACE WARSHIPS (JULY 1975)

AIRCRAFT CARRIER COMPARISON

The estimated cost for the nuclear fuel which will be initially installed in the next carrier, the CVN 71, if Congress approves the advance procurement funds requested by the President in the fiscal year 1977 budget, including the costs of uranium and other core materials, core fabrication, core installation, core removal, and fuel processing is about \$175 million in fiscal year 1977 dollars. This initial nuclear fuel is expected to provide for at least 13 years of normal operation of the CVN 71.

Of the \$175 million total cost of buying, installing, removing, and reprocessing the initial nuclear cores for the CVN 71, about \$133 million is included in the estimated acquisition cost (Shipbuilding and Conversion, Navy Budget) of \$1.85 billion. The cost of fuel and fuel oil delivery is not included in the acquisition cost of conventional ships.

To carry out the same missions, a conventional aircraft carrier would consume about 11 million barrels of fuel oil. The Navy, as of 8 July 1975, is paying \$16.38 per barrel for fuel oil of the type used by conventional aircraft carriers and cruisers. In addition, the Navy estimates it costs about \$0.25 per barrel for storage costs. Thus, the estimated current average peacetime cost to buy and store a barrel of fuel for a conventional aircraft carrier or conventional cruiser is

\$16.63 per barrel. This estimated cost does not include an amount for delivering the fuel oil to the ships operating on the high seas. The average peacetime costs for delivery is estimated to be \$14.40 per barrel. Based on the above estimated costs:

(a) The cost to buy and store 11 million barrels of fuel for a conventional aircraft carrier would approximate \$183 million.

(b) The cost to deliver 11 million barrels of fuel oil for a conventional aircraft carrier would approximate \$158 million.

Thus the cost to buy, store and deliver 11 million barrels of fuel oil for a conventional aircraft carrier would approximate \$340 million.

STRIKE CRUISER COMPARISON

The estimated cost for the nuclear fuel which will be installed in a nuclear strike cruiser, including the costs of uranium and other core materials, core fabrication, core installation, core removal, and fuel processing is about \$56 million in fiscal year 1977 dollars.

This initial nuclear fuel is expected to provide at least 15 years of normal operation for a nuclear strike cruiser.

Of the \$56 million total cost of buying, installing, removing, and reprocessing the initial nuclear cores for a nuclear cruiser, about \$41 million is included in the acquisition cost (Shipbuilding and Conversion, Navy Budget).

The cost of fuel oil and fuel oil delivery is not included in the acquisition cost of conventional ships.

To carry out the same missions, a conventional cruiser would consume about 3 million barrels of fuel oil. Based on the above:

(a) The cost to buy and store 3 million barrels of fuel oil for a conventional cruiser would approximate \$50 million.

(b) The cost to deliver 3 million barrels of fuel oil for a conventional cruiser would approximate \$43 million.

Thus, the cost to buy, store, and deliver 3 million barrels of fuel oil for a conventional cruiser would approximate \$93 million.

The figures above compare the cost of the nuclear fuel initially installed in nuclear carriers and cruisers to the cost of buying, storing, and delivering equivalent amounts of fuel oil to conventional carriers and cruisers. The cost of delivering fuel oil is calculated based on the procurement and operating cost of the current inventory of Navy oilers. During wartime oilers are vulnerable to enemy attack and might not be able to deliver fuel oil to a carrier task force in a war zone. The value of nuclear propulsion under these circumstances is immeasurable.

Senator JACKSON. We need to know what we are buying, because the operating costs take a significant jump, if I read you correctly. That is No. 1. And it seems to me that we ought to get that data when you buy a nonnuclear powered ship. What is the difference in operating costs over, say, the core of the last 12 years, and what will be the operating costs approximately, utilizing the same number of operating hours?

The CHAIRMAN. If you will yield right there, before you leave that. In other words, the cost comparisons to you are not complete until there is something on this amortization of it.

Senator JACKSON. That is right.

The CHAIRMAN. We need to know, then, the source of where those figures came from and who put them together.

Senator JACKSON. The price of the nuclear strike cruiser or whatever the nuclear vessel is, as I understand it, includes the core, or the fuel.

Admiral RICKOVER. Yes, sir. I gave one figure, Senator Jackson, that the nuclear cruisers have been operating about 27 percent more than the conventional ships in the Pacific.

Senator JACKSON. That is the second point you want to make. To use the Navy expression, I think you call it underway time.

Admiral RICKOVER. Yes, sir.

Senator JACKSON. And as I read the admiral's testimony on page 47:

The eight nonnuclear cruisers, exclusive of overhaul periods, averaged 2,730 hours underway per year, with a maximum for any one ship in a year to 3,667 hours from fiscal year 1974 to present. I was unable to obtain data prior to fiscal year 1974.

Admiral RICKOVER. But that doesn't tell the whole story, because there are certain types of operations which are carried out in the fleet that the nuclear ships can do much better. And I can give you an example.

The *Truxtun* made the longest nonstop, high-speed run in all history of any ship in the world. She steamed 8,600 miles at an average speed in advance of 28 knots. A conventional ship could not have done it. A conventional ship would have had to have three pre-positioned oilers to do it. It was a special mission; she had to go into the Indian Ocean and then to Australia. At all times she was ready to fight. Oil-fired ships could not have kept on going.

Regardless of this 27 percent, you cannot do certain things with conventional ships that you can with nuclear ships. It has this extra potential. But, of course, the potential seldom shows up in peacetime, in wartime it would, particularly if you didn't have oil.

Senator JACKSON. That was going to be my third point.

Admiral RICKOVER. But that is a matter of judgment. That is where military judgment comes in. But Department of Defense decisions are based on systems analysts' judgment.

Senator JACKSON. They are a substitute for judgment.

As I understand it, the three nuclear ships, exclusive of overhaul periods that you mentioned in your statement on page 47 the underway time was considerably higher with a maximum for any one ship in the year of 5,648 hours.

Mr. Chairman, that is a part of the balance sheet that I think we need to have, plus the third point. And that is the characteristics of the ship in connection with their flexibility of performance, which obviously a conventional ship cannot go at high speed for as long a period of time as a nuclear-powered ship as a part of the nuclear fleet. It would be helpful because we go around and around on this every year. The initial cost figures are always much higher in connection with a nuclear-powered ship.

The trouble is that you have built in the fuel costs which you don't include in the conventional ships.

I raise that especially in the light of the fact that you have the whole new dimension now of energy costs for conventional ships. Could we have that compared with what it was 3 years ago?

NAVY STUDY OF LIFETIME COSTS BETWEEN NUCLEAR AND CONVENTIONAL TASK FORCE

Admiral RICKOVER. I can give you one figure right now, sir. You probably were not in here when I mentioned it. The latest study by the Navy shows that there is essentially no difference in lifetime cost between a nuclear task force and a conventional one. But that does not count the advantages of the nuclear-powered force. My estimate is that a nuclear task force is worth 1½ conventional forces at least.

Senator JACKSON. In terms of military flexibility.

Admiral RICKOVER. Military effectiveness. That lifetime cost is only a straight financial cost, it does not address the military comparison between the two forces. There is absolutely no question about it.

For submarines you can't argue. And as I mentioned before, even there the system analysts—

Senator JACKSON. We didn't have a true submarine until we had a nuclear-powered one?

Admiral RICKOVER. That is right, sir.

The CHAIRMAN. Senator Jackson, would you restate that now about this comparative cost, including the amortization, that you mentioned, so that we can get it from someone who has these figures available and get them back to us.

Senator JACKSON. Mr. Chairman, just off the top of my head I would suggest that we get a balance sheet of the total costs in terms of a given operating life period of a conventionally powered ship versus its counterpart.

Admiral RICKOVER. We already have such a study. This is what I mentioned in my statement. A study has just been made on that very subject, comparing an equal task force of conventional ships versus nuclear ones.

Senator JACKSON. Boil it down so that we will have them side by side, and cover the three things.

Admiral RICKOVER. It is on page 17.

Senator JACKSON. I think we could put on one column the nonnuclear ship and cover the fuel costs over a period of time. Mr. Chairman, I think this is the significant point—you know what the fuel costs will be for the nuclear-powered ship, because you buy, what is it now, a 15-year supply?

Admiral RICKOVER. Fifteen years; yes, sir.

Senator JACKSON. You buy a 15-year supply of fuel. And the past is prologue; you don't get the true picture.

Senator CULVER. Can we also include personnel costs, procurement, operating personnel?

Admiral RICKOVER. That study included everything, personnel costs, lifetime cost. The figures you have here are essentially the answer.

Mr. LEIGHTON. Senator, the Navy has a study—we have given a one-paragraph summary of it on page 17 here—there is a classified study that the Navy has done to compare the life cycle cost, including all costs that the Navy encountered in preparing these two task forces. It should be available to the committee. If you ask the Navy for it, I am sure they would be glad to supply it. And it spells out in detail for individual ships fuel costs, replenishment costs, manpower costs, the whole thing.

Senator JACKSON. And military capability?

Mr. LEIGHTON. This is a cost study.

Admiral RICKOVER. That is what it does—

Senator JACKSON. Could you boil that down. I would like to have it supplied to the committee, say on a 15-year basis.

Mr. LEIGHTON. This goes on a 30-year basis.

Senator JACKSON. I mean your core is 15 years. Let's take the core that goes into the ship. I think that would be very helpful. And have it condensed, so we will have a ready reference sheet.

Admiral RICKOVER. You also want a statement which is a judgment statement comparing the military effectiveness.

Senator JACKSON. That is right.

The CHAIRMAN. I think we have that complete now. We will get what is available right away and retain it in the files for reference.

Senator Taft, that brings us to you.

Senator TAFT. Thank you very much.

Admiral, I appreciate your testimony here this morning. Following up on that, are personnel costs also figured into those costs?

Admiral RICKOVER. Yes, sir.

Senator TAFT. The only item in the comparison I don't think I quite understand is the antisubmarine-warfare capability of the nuclear task force, without apparently ASW ships involved. Do you follow my question, Admiral?

Admiral RICKOVER. Yes; I follow your question. The nuclear ships are better individually for anti-aircraft warfare than the conventional.

Senator TAFT. I understand that. But what is the antisubmarine-warfare capability of the nuclear task force as made up here? Doesn't it have to have some additional antisubmarine protection?

Admiral RICKOVER. The whole task force is constituted for one nuclear and the other one conventional. In my opinion, the nuclear task force is far better as it is, because you don't have to take the escorts off the line 15 percent of the time for refueling. The whole task force has to slow down for refueling. The nuclear one can just keep on going. Before you came in, it was mentioned that because of the fewer nuclear ships, and because they are better, the attrition rate is much less than it is with conventional ships. So I don't think that is a big factor in this comparison.

Senator TAFT. What system would the nuclear task force use for antisubmarine protection?

Admiral RICKOVER. They are all ASW capable ships. These ships are all equipped for ASW, everyone of them, in both columns. And in the case of the strike cruiser, it will be a far more effective anti-air warfare ship than the others, because it has more weapons, and so on.

[The following information was provided for the record:]

The latest Navy life cycle cost (LCC) comparison of nuclear and conventional surface warships is the study dated January 1976 and supplemented in February 1976 by the Systems Analysis Division of the Office of the Chief of Naval Operations. Implicit in the study were several assumptions, most notably:

1. Peacetime costs were assumed. No wartime attrition of either strike force ships or underway replenishment groups (URG's) was considered. Prior studies have shown that greater attrition of replenishment ships can be expected when supporting oil-fired strike force ships because of the larger number of replenishment ships and the more frequent replenishments required.

2. The cost calculations were based on the assumption that replenishment will be provided in the operations area. Because of this assumption, the number of combatant ships allocated to protect the task group underway replenishment force was assumed to be the same for the nuclear and non-nuclear forces.

3. It was assumed that the current or projected number of oilers is sufficient to replenish the task groups. Consideration of replenishment in wartime was not within the scope of the study.

4. The study was a cost study only and did not account for the military advantages of nuclear propulsion.

Regarding the anti-submarine warfare capability of each task force, the nuclear cruisers, both CSGN and CGN-38 Class, have the same type sonars and ASW missiles as those in the CSG, CG-26 and DD-963 Class ships of the conventional task force. Thus, the postulated nuclear carrier task force has four nuclear ASW ships vice the six non-nuclear ASW ships in the postulated conventional task force. Four of the escorts in each force also have AAW weapons systems.

In comparing the all-nuclear carrier task group with two fewer ASW escorts to the conventional task group, it should be recognized that the all-nuclear task group would not be more vulnerable to submarine attack than the all-conventional carrier task group because the entire conventional force would be dependent on a vulnerable source of propulsion fuel. Further, about 15 percent of the time one of the six conventional escorts would be off station for refueling by the carrier (or an oiler which would accompany the force). The vulnerability of the whole conventional force would be increased during this period due to restrictions on course and speed during refueling. If the carrier has to fuel the escorts, the carrier operations are restricted while an escort is alongside. If an oiler accompanies the force, then the whole force is restricted to the speed capabilities of the oiler, and the carrier escorts must also protect the oiler.

5. The nuclear carrier has 50 percent more aircraft ammunition and almost twice as much aviation fuel as the conventional carrier. Further, the all-nuclear carrier task group is independent of the need to resupply ship propulsion fuel. Therefore, the all-nuclear group has much greater tactical flexibility and mobility, and greater capability for sustained combat without replenishment. When replenishment is required, the all-nuclear group can steam at high speed to meet replenishment forces in low threat areas and then return to the high threat combat area at high speed, without concern for conserving propulsion fuel.

A summary of the cost comparisons derived in the Navy life cycle cost study follows:

LIFE CYCLE COST COMPARISONS

[In millions of fiscal year 1976 dollars]

I. INDIVIDUAL SHIP COMPARISONS (NOT INCLUDING OIL DELIVERY COSTS)

Ship	Initial procurement	Mid-life conversion	Replacement core and refueling	Annual operating	30-yr undiscounted life cycle cost
CSG.....	623	220	-----	20.86	1,469
CSGN.....	818	245	47	27.57	1,937
Assuming that the price of conventional fuel doubles:					
CSG.....	623	220	-----	22.74	1,525
CSGN.....	818	245	47	27.57	1,937

II. CARRIER TASK GROUP COMPARISONS (INCLUDES CARRIER, AIR GROUP, URG's, AEGIS CRUISERS, AND SURFACE COMBATANTS FOR BOTH THE CARRIER TG's AND URG's)

	Conventional	Nuclear	Percent difference
With 6 conventional and 4 nuclear surface combatants.....	23,267	23,581	1.3
At double conventional fuel.....	24,904	24,445	(1.9)

Task Group Composition

Conventional:	Nuclear
1 CV.....	1. CVN.
1 CSG.....	1 CSGN.
3 CG-26.....	3 CGN-38.
2 DD-963.....	

SHIP ANNUAL OPERATING COSTS

	CSGN	CSG	CSG double fuel cost
Manning:			
Officers.....	37	34	
Enlisted.....	476	358	
Millions of fiscal year 1976 dollars:			
Alternate equipment and other operation.....	2.38	2.00	
Alternate equipment installation.....	3.83	3.25	
Overhaul (less recore).....	8.71	4.77	
Restricted and technical availabilities.....	.41	.34	
IMA.....	.04	.16	
Ship operations:			
Fuel:			
Conventional.....	.02	1.38	2.76
Nuclear.....	.25		
Utilities.....	.18	.14	
Repair parts.....	.26	.24	
Fleet TAD.....	.02	.01	
Other O. & M.N.....	.18	.13	
Subtotal.....	16.28	12.42	13.80
Direct: (NARM)			
Officers.....	.75	.69	
Enlisted.....	4.19	3.15	
Indirect costs.....	6.35	4.60	(5.10)
Total annual operating costs.....	27.57	20.86	(22.74)

INDIRECT COSTS

	CSGN	CSG	CSG double fuel cost
Indirect personnel:			
Officers.....	5.2	4.8	
.....	8.2	6.2	
Total officers.....	13.0	11.0	
Enlisted.....	2.8	2.6	
.....	116.2	87.4	
Total enlisted.....	119.0	90.0	
Millions of fiscal year 1976 dollars:			
Indirect MPN:			
Officers.....	.26	.22	
Enlisted.....	1.05	.79	
Indirect MPN (PCS):			
Officers.....	.07	.06	
Enlisted.....	.26	.20	
Indirect O. & M.N.:			
Officers.....	.04	.04	
Enlisted.....	.55	.41	
Ship O. & M.N.....	3.67	2.62	3.12
Maintenance O. & M.N.....	.45	.26	
Total indirect.....	6.35	4.60	5.10

CV/CVN TASK GROUP LIFE CYCLE COST (LCC) COMPARISONS¹

I. UNDISCOUNTED LCC COST COMPARISON

A. CV TASK GROUP LCC (NARM)

	Number	In millions of 1976 dollars	
		Unit life cycle cost	Total life cycle cost
Air group.....	2	4.028	8.056
Task group:			
CV.....	1	4.096	4.096
CSG.....	1	1.469	1.469
DD-963.....	2	664	1.328
CG-26.....	3	1.074	3.222
Support ships:			
FFG-7.....	3	443	1.329
FF-1052.....	3	491	1.473
AE assets.....	(2)	-----	478
AF assets.....	(2)	-----	61
AFS assets.....	(2)	-----	281
AOE assets.....	(2)	-----	322
AOR assets.....	(2)	-----	378
AO assets.....	(2)	-----	774
Total.....			23.267
Fuel difference assuming double fuel prices.....			1.637
Total.....			24.904

B. CVN TASK GROUP LCC (NARM)

Air group.....	2	4.028	3.056
Task group:			
CVN.....	1	4.633	4.633
CSGN.....	1	1.937	1.937
CGN-38.....	3	1.513	4.539
Support ships:			
FFG-7.....	3	443	1.329
FF-1052.....	3	491	1.473
AE assets.....	(2)	-----	478
AF assets.....	(2)	-----	61
AFS assets.....	(2)	-----	281
AOE assets.....	(2)	-----	218
AOR assets.....	(2)	-----	203
AO assets.....	(2)	-----	373
Total.....			23.581

¹ Based on methodology of CV/CVN Task Group Life Cycle Costs (LCC) comparisons study, January 1976 (confidential).² Life cycle costs of support ships were derived in the January 1976 study (confidential). The life cycle costs shown for the support ships were derived by allocating the total life cycle cost of fleet support ship assets among the projected number of carrier task groups. That portion of the cost of fleet support ship assets attributable to fuel delivery was prorated among the nuclear and nonnuclear task groups based on relative total task force fuel usage.

Note: See table below:

	4 nuclear surface combatants
CVN task group life cycle cost.....	23.581
Fuel difference assuming double fuel prices.....	864
Total.....	24,445

Senator TAFT. Admiral, do you think that we need to build attack submarines at a more rapid pace?

Admiral RICKOVER. Yes, sir. We need it for two reasons.

NEED TO REPLACE OBSOLETE SUBMARINES

First, the Russians are building about four times as many nuclear submarines as we are. And second, ours are getting old. We have to start considering replacement, because in a period of 20 years or so, they become obsolete. But on the contrary, the Defense Department is

reducing the number—they want to reduce the number of attack submarines we build to two per year. We started out 3 or 4 years ago with five a year, and now it is getting down to two a year.

Senator TAFT. And the Russians—

Admiral RICKOVER. The Russians are putting out four times as many nuclear submarines as we.

Senator TAFT. About eight?

Admiral RICKOVER. Yes, sir, about eight nuclear submarines per year, including both ballistic missile and attack types.

Senator TAFT. Could you comment on the effectiveness of the proposed FFG-7 against the types of Soviet submarines we expect to face in the 1980's and 1990's?

Admiral RICKOVER. No, sir. I was asked that question by Senator Goldwater, and I replied that I was not an expert in that, and I would appreciate not getting involved on things I don't know much about. You can find many people who will talk to you about things they don't know much about. I would rather not.

Senator TAFT. Why do Soviet submarines have much higher powered plants and significantly higher speed than even our *Spruance* class destroyer?

Admiral RICKOVER. You are now in a classified area. And the agreement was this morning that if I were asked a question which I considered classified by any of the Senators present, I would tell them so and not reply to it. I will be glad to talk to you alone or in executive session on that.

Senator TAFT. Thank you.

Admiral, I agree with you that large aircraft carriers with catapult-dependent aircraft should probably be of the *Nimitz* size. But do you think that it would be useful to supplement these large carriers with smaller carriers, say, of about 25,000 tons, designed for V/STOL aircraft?

Admiral RICKOVER. The latest study made by the Navy at the direction of the Secretary of Defense—when Dr. Schlesinger was Secretary—was to see if the Navy could come up with a smaller carrier. The Navy made a thorough study, and came to the conclusion that it was far more cost effective to build carriers of the *Nimitz* size; that is, three *Nimitz* class carriers would cost no more, considering the design cost, than three smaller ships.

Mr. LEIGHTON. I don't think you understand the Senator's question. He asked you whether it would be worthwhile to supplement the larger carriers with about 25,000-ton V/STOL-type carriers, vertical take-off, landing.

Admiral RICKOVER. Here again I will plead ignorance, not because I don't want to answer your question, but I am not an expert in this area, sir. I cannot testify from any direct knowledge. I can't answer that question.

Senator TAFT. Admiral, the U.S. Navy ship *California* which joined the fleet in 1974 is nuclear powered. It is one of the escorts that you have strongly supported. With a displacement of 10,000 tons it carries no helicopters, no antiship missiles, two SAM launchers, two 5-inch guns, antisubmarine warfare and torpedo tubes, and an ASROC.

In comparison to the Soviet *Kara* class cruiser which is only 8,200 tons, but it carries one helicopter, eight SSM antiship missiles, two

separate SAM systems, each with four launchers, and 76- and 30-millimeter guns, and MBU's for ASW. Could you comment on that comparison?

Admiral RICKOVER. With your permission, I will let Mr. Leighton answer that question. He is more familiar with it.

Mr. LEIGHTON. The *California* has a helicopter landing area on it, Senator. The later ships have hangers as well as helicopter landing pads. I guess we are going to get into the problem of classification if we get into the detailed specific characteristics comparisons between these weapons.

The Soviets use a different philosophy on numbers of launchers than we do. For example, the Soviets have separate launchers for surface-to-surface, and surface-to-air, and for ASW. In our ships—in some of our classes—the *California*, for example, we use the same magazine and launchers to fire different kinds of weapons. The Soviets have a different philosophy on reload as to how many missiles they carry versus how many we carry. And to get into details of that we would have to be in executive session, I think.

Senator TAFT. Admiral, yesterday Admiral Holloway made a statement, I am not sure whether I am giving it undue weight or not. He said that in the Navy's official opinion the AEGIS system could deal successfully with any antiship missile the Soviets will have for the next 5 years. If we go ahead with the program, we will not have a strike cruiser force for about 5 years. In view of this, do you have confidence that the AEGIS system is going to be a viable protective system against antiship missiles?

Admiral RICKOVER. You are again in an area in which I am not competent.

Senator TAFT. Doesn't the backing of the procurement of the strike cruiser and the DDG-47 depend upon that decision? In other words, if we aren't convinced that the AEGIS system is going to be adequate at the end of more than 5 years—

Admiral RICKOVER. They both have the AEGIS system. The strike cruiser has more weapons capacity than the DDG-47. So as far as the major weapons systems are concerned, they are both dependent on the identical AEGIS system. But again, sir, I am not—I will be glad to get you a briefing on that, I can tell the Navy about it. But I would rather stay out of the details of weapons systems. It is not my province.

Senator TAFT. My concern is whether we are putting so much emphasis on this AEGIS matter that we are making a decision—for instance, between submarines and surface ships—that may or may not be a sound decision.

Admiral RICKOVER. What I would like to do, with your permission, is to arrange for the Navy to brief you on that, if that is satisfactory. I am not qualified to answer that question. I will do that, sir and have them call you and arrange for a briefing.

Senator TAFT. Thank you very much.

Admiral. the carrier has an air defense, antiship, antisubmarine war capability of its own. Why, if we must escort carriers at all, why cannot we escort carriers with other carriers instead of cruisers and destroyers. I think it is of dubious futility, and high cost.

Admiral RICKOVER. Obviously high cost. For instance, if you have a \$2-billion aircraft carrier you certainly wouldn't have to have another \$2-billion carrier, one on each side, you can do it much cheaper.

Senator TART. The same cost as two strike carriers?

Mr. LEIGHTON. Senator, when you take the cost of an aircraft carrier as you do with any ship, you must include all of its weapon systems. The aircraft carrier itself is a small portion of the total cost of the carrier. It is a much smaller fraction of the total cost than is the case, say, with a strike cruiser compared to its weapons. Part of the answer to your question is that there are various types of weapons systems needed for various types of defense. You have defense at a distance through your aircraft flying out hundreds of miles and attacking the platforms that are trying to shoot at you. And you also have the close-in defense where you are trying to shoot the missiles that have come through your outer defenses. The purpose of the AEGIS system is of course to provide the best system the Navy has been able to devise to direct the fire of missiles, to have quick-response time, and to be able to direct our missiles to shoot down incoming aircraft and missiles. All of those functions cannot be handled just by carrier aircraft.

Senator TART. Thank you very much.

Thank you, Admiral.

Admiral RICKOVER. Thank you, sir.

The CHAIRMAN. Thank you very much, Senator.

That brings us to you, Senator Nunn.

NUMBERS VERSUS QUALITY OF SHIPS

Senator NUNN. Admiral, I am concerned, as everybody is that is involved in decisionmaking, including the Navy and Congress, about the numbers versus the quality of our vessels. Everybody in the Navy and the Defense Department, no matter what their position is on nuclear versus nonnuclear, expresses the same alarm about the number of Soviet ships versus the number of U.S. ships. In your statement you say that the United States has already conceded that we will never match the Soviets in numbers. Is that your view, or do you think that is a Department of Defense or Navy view?

Admiral RICKOVER. I think that is everybody's view. Certainly it is true of nuclear submarines. I predicted in 1968 that they would surpass us and it came true in 1970. They now have 30 more nuclear submarines than we have. And they are building currently four times as many. So there is certainly no question as to submarines. In surface ships they are also building more now. And further, the surface ships they are building, even for small displacements, carry much more armament than ours do.

Senator NUNN. Are you alarmed by that disparity in numbers?

Admiral RICKOVER. My inclination is to go in more for better ships than for just more ships. That is my personal opinion. I am not talking for the Navy now. There are of course many different functions. But when I talk about more, I confine myself to nuclear ships. And I said previously, nuclear power simply applies for submarines, and aircraft carriers and generally their escorts, and it should not be used to provide power for the others, such as convoy escorts, amphibious ships, or auxiliaries.

But, as I say, as a general proposition, from my experience, and knowledge of history, I would rather have fewer good ships than many inferior ones. I will give you an example of that from another navy.

Lord Fisher became First Sea Lord in the early 1900's in England. The British at the time had large numbers of small ships. The first thing he did was to scrap many of the small ships and devoted his money to building big ships. And that was the reason the British were able to defeat the Germans in major naval warfare in World War I.

Senator NUNN. On that score, in terms of having bigger ships, we are certainly a lot better off vis-a-vis the Soviet Union than most of the people who are expressing so much alarm about the disparity in numbers believe, are we not?

Admiral RICKOVER. But to be absurd about it, if you had one big ship and they had 100 small ones, that gets to be absurd. There is a point where numbers outweigh excellence.

Senator NUNN. Have we reached that point?

Admiral RICKOVER. The expression of the Defense Department is—and I am inclined to agree with it—that today we are at least equal in surface ships. But the disparity is growing.

Senator NUNN. In submarines they are ahead of us? In terms of overall capability?

Admiral RICKOVER. Yes, sir.

Senator NUNN. Not in number but overall capability?

Admiral RICKOVER. I made this statement to the House Appropriations Committee a short time ago: Were I given a choice between command of the Russian submarine fleet or our own, I would take the Russian. Does that answer your question?

Senator NUNN. Yes, sir. That is very direct. If you say basically we are about equal on surface vessels—

Admiral RICKOVER. I am not an expert on that. I am quoting the Department of Defense, but I think they are probably right.

Senator NUNN. If you were rating the overall Soviet Navy versus the overall U.S. Navy—I know this is an oversimplification, but yesterday Admiral Holloway said that he would say we had a thin margin over the Soviet Navy overall in a majority of the important scenarios. Do you agree with that statement?

Admiral RICKOVER. The two navies have a different function. The function of our Navy is to project seapower from a strategic standpoint. The Soviet Navy's mission is to stop our Navy. They have continuous land lines for reinforcement, they are essentially a land power. And they are also trying to be a naval power at the same time.

So, their functions are different. They don't have to build the same kind of ships we do to accomplish this purpose.

Senator NUNN. I understand that. And I think that is a good point. Do you agree with Admiral Holloway's statement that overall in a conflict between our Navy versus their navy, that we do have a thin margin over the Soviet Union?

Admiral RICKOVER. I don't know how to answer that question, sir. First, I think the efficacy of the submarine is still underrated in our Navy, even though we came close to losing two world wars over it. It has always been that way.

For example, our submariners opposed atomic-powered submarines. You know that they were the chief opponents. Do you know why? They were getting one or two diesel submarines every year, and the system analysts computed that an atomic submarine was worth only 1.41 times as much as a conventional sub but would cost twice as much.

Therefore, if the Navy went to atomic power they would only get about half as many submarines, and therefore there wouldn't be as much room for command and all that.

Senator NUNN. I am getting around to this point. And I don't want to get into personalities here, but I really do think this is important, because there is an awful lot of conversation.

Admiral Zumwalt has written a book, and in that book he says—and I quote him:

Rickover has been working successfully toward a subsurface Navy, and so it is partly his doing that for 20 years the Navy has been getting smaller.

Admiral RICKOVER. That is right; the cockroaches always come from the neighbor's apartment.

Senator NUNN. I agree with you on that statement too. Do you have anything specific to say?

Admiral RICKOVER. Have you had that experience, too?

Senator NUNN. I have that same experience. Do you think that is a logical allegation? You are saying here that you prefer quality rather than numbers. And that is what Admiral Zumwalt is saying that you do.

Admiral RICKOVER. I will answer that question in the same manner that I answered it on Good Friday. A female broadcaster called me from one of the leading TV stations. She said she wanted me to comment on what Admiral Zumwalt said. I agreed. She said, "Now, I have got you on the tape." The first question she asked was: Have you read Admiral Zumwalt's book?"

And I said, "No."

And she said, "I can't hear you."

And I said, "I am sorry, I am munching my Easter roll now." So I repeated my answer.

And then she asked me the first question: "What do you think of such and such a statement?"

And I said, "Well, this is a free country and Admiral Zumwalt is entitled to his opinion."

She asked the second question. And I said, "Well this is a free country, and he is entitled to his opinion."

And this went on. And she said, "Is that the only answer you are going to give?"

And I said: "Well, you can ask a thousand questions and that is all the answer you will get."

And she said, "You apparently don't want to answer."

And I said, "That is up to you, I will keep giving that answer as long as you want."

I will not get into any arguments, for a man who can't accomplish what he wants to always finds fault with others rather than himself.

Senator NUNN. I don't want to get into an argument either. But, the essential question we have got to decide is nuclear versus non-nuclear, smaller ships versus the larger ships and numbers versus quality. That is the essential question. Two experts, Admiral Zumwalt on one hand and you on the other hand, are in fundamental disagreement, and a lot of people in the Navy are fundamentally in disagreement and a lot of the people in the administration are in fundamental disagreement, it makes it very difficult for Congress, at least me, to make a rational decision.

Admiral RICKOVER. I think you are just as intelligent as any naval officer, sir.

Mr. LEIGHTON. May I make one comment.

Senator NUNN. Yes, sir.

Mr. LEIGHTON. If you like we would be glad to provide for the record statements made by Admiral Zumwalt when he was Chief of Naval Operations in which he testified to the Congress that he considered an all-nuclear task force would have a greater ability to penetrate and counter the Soviet threat than any other surface force we know how to build, and he stated that CVN 70, the nuclear-powered aircraft carrier *Carl Vinson*, was the first priority item in the general purpose forces budget in fiscal 1974, which was the year in which the ship was authorized, and he stated that we should build at least one nuclear escort a year.

I would be glad to cite those for the record.

Senator NUNN. I think that would be very helpful.

[The information referred to follows:]

EXCERPTS FROM STATEMENTS BY CHIEF OF NAVAL OPERATIONS, ADMIRAL ELMO R. ZUMWALT, JR., PUBLISHED IN THE JOINT COMMITTEE ON ATOMIC ENERGY RECORD OF "HEARING AND SUBSEQUENT INQUIRY OF THE SUBCOMMITTEE ON MILITARY APPLICATIONS ON NUCLEAR PROPULSION FOR NAVAL WARSHIPS" DATED MAY 5, 1971—SEPTEMBER 30, 1972, CHAIRED BY SENATOR HENRY M. JACKSON

(NOTE: In the following statements references are made to nuclear powered frigates, DLGN's. As of 1 July 1975, the Navy reclassified these ships as nuclear powered cruisers, CGN's.)

Admiral ZUMWALT. Mr. Chairman, I will be brief in my opening remarks.

I am appreciative of the opportunity to appear before you this afternoon to discuss the Navy's nuclear ship construction program.

You have asked me to state my personal recommendations regarding the advisability of constructing CVAN-70 as well as nuclear-driven frigates and tactical cruise missile submarines. To properly respond to your request, there are several important considerations which I must place before you.

IMPORTANCE OF NUCLEAR PROPULSION

In my statements before the Armed Services and the Appropriations Committees of both Chambers. I have stated my judgments of the importance of nuclear propulsion in our carriers, our frigates, and our submarines. I would add here that I can foresee the importance of nuclear propulsion in other types of ships yet to make their appearance on the drawing board. The United States is an island nation with economic interest, allies, and potential enemies separated from her by vast ocean distances. Nuclear propulsion enables our warships to traverse these distances at high speeds without pausing to refuel. It enables our warships to remain on station without replenishment until ammunition and/or supplies run low, or until the President makes a political decision to start even using those supplies. The importance of nuclear propulsion as a means toward strategic mobility is obvious to all who pause to consider the matter. It will remain so until a superior form of ocean propulsion for our weapons systems is produced. It will become even more important as the number of ships in our fleet continue to decrease.

* * * * *

RECOMMENDATIONS ON NUCLEAR SHIPS

Returning now, Mr. Chairman, to your question regarding my recommendations as to nuclear propulsion shipbuilding: I believe that the size of the program must be governed by the amount of money available to the Navy and by the relative importance of nuclear propulsion in comparison with other capabilities needed to offset Soviet naval capabilities. In essence, this is an annual assess-

ment. My personal recommendation after 60 days in office, to increase our SSN program from three to [deleted] is reflected in the fiscal year 1972 budget. While recognizing the high importance of nuclear shipbuilding, I would have made no changes in the fiscal year 1972 budget other than the CVAN-70 amendment which we had proposed. As a matter of interest, procurement of five nuclear attack submarines, one nuclear frigate and advance procurement for others, plus six POSEIDON conversions required allocation of about \$1.5 billion out of a total shipbuilding and conversion program of \$3.3 billion in fiscal year 1972. This is about 44 percent.

DSARC REVIEW OF DLGN'S

Senator DOMINICK. Admiral, in your prepared statement you said that the Defense System Acquisition Review Council reviewed the Navy's contractual plans, and on that basis they decided against the CVAN-70 and the nuclear frigates 41 and 42. Were you a member of that Council and did you give your opinion on it?

Admiral ZUMWALT. I attended a meeting on the DLGN at one time, Senator Dominick, but the Navy does not have membership on DSARC; this council is comprised of representatives from the offices of the Secretary of Defense. Service representation is on a nonvoting, interested party basis only.

Senator DOMINICK. Was the Navy's position with regard to support of the CVAN-70 put forth as forcibly as you have put it today?

Admiral ZUMWALT. Yes, sir. Both the Chief of Naval Operations and the Secretary of the Navy have advocated the CVAN-70.

Senator DOMINICK. What about the long leadtime items for the 41 and 42 nuclear frigates?

Admiral ZUMWALT. There, sir, the support runs through the Chief of Naval Operations. The Secretary of the Navy has supported the position which subsequently became a decision.

Senator DOMINICK. Then I was not clear on this issue. You say that you supported the long leadtime items on the nuclear carrier, but in view of the budget limitations you decided that the support ships were better than going ahead with leadtime items for the nuclear frigates?

Admiral ZUMWALT. No, sir; I have strongly supported the continuation of the DLGN and a procurement of a package of five vice three. I feel that the CVAN-70 was the highest priority item for the 1972 budget except for the five SSN's. I feel that right after them is the DLGN in 1972, and that it should be part of a five-ship buy. That is my personal opinion. As you know, I support the official position that has been taken.

Senator DOMINICK. For fiscal 1972, this is what you recommended?

Admiral ZUMWALT. Yes, sir; a DLGN, a CVAN—

Senator DOMINICK. Two?

Admiral ZUMWALT. No, sir; one—

Senator DOMINICK. One DLGN.

Admiral ZUMWALT. The issue there is that all of our studies and analyses demonstrate that you have to have a certain number of escorts. We need nuclear escorts and nuclear carriers very badly, but we need at the same time to have a program, as rapidly as we can get it, for cheaper, less expensive, less sophisticated escorts in order to have enough ASW platforms to do escort of convoys, escort in the way of replenishment groups and things of that sort. We simply cannot at anything like the current budget levels afford all the nuclear escorts we need.

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FISCAL YEAR 1972 RECOMMENDATIONS CONCERNING CVAN-70

Chairman JACKSON. *What specific recommendations have you made concerning the CVAN-70 since becoming the Chief of Naval Operations and what action was taken on your recommendations?*

Admiral ZUMWALT. As you know, funding for long leadtime procurements for CVAN-70 was included in the fiscal year 1971 budget. This was subsequently deleted as a result of House-Senate conference review on September 26, 1970.

The proposed Navy fiscal year 1972 budget was provided to the Secretary of Defense on September 30, 1970. It did not contain funding for CVAN-70 because

the 4-day period between its submission and the House-Senate conference action simply did not permit restructuring the budget to the extent which would have been required.

In November 1970 I submitted a recommendation to the Secretary of the Navy that a request be made for CVAN-70 long leadtime funding in the fiscal year 1972 budget. The Secretary discussed the matter with the Deputy Secretary of Defense.

In January, the Secretary of the Navy submitted a request for CVAN-70 long lead funding to the Secretary of Defense. A decision was made that it was not feasible to change the budget at that time. However, Mr. Laird advised the authorization and appropriation committees of Congress that if the preservation of the industrial base should be at issue, or if significant savings would be realized, that he would seek long lead funding for the CVAN within the total of the overall Defense budget request.

In March 1971, I advised the Secretary of the Navy that a review of the facts disclosed that a disruption of CVAN-70 nuclear component production facilities would result if long lead procurement were postponed to fiscal year 1973 and that an estimated cost increase of \$126 million would occur. I proposed an amendment to the budget which deleted certain new construction ships and substituted long lead funding for the CVAN. Mr. Chafee approved the proposal and recommended it to the Deputy Secretary of Defense in March. Mr. Chafee repeated his recommendation in an associated communication to Mr. Packard later in the same month.

I have recommended a budget amendment to make funds available for CVAN-70 in other discussions with the Deputy Secretary and the Secretary of Defense. After considering this recommendation, Mr. Packard notified Senator Pastore on April 27, 1971 that he did not intend to propose an amendment to the fiscal year 1972 budget, but would consider inclusion of long lead items for CVAN-70 in the formulation of the fiscal year 1973 budget.

As I have stated previously, I intend to recommend that CVAN-70 advance procurement funds be provided in the fiscal year 1973 budget.

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NUCLEAR FRIGATES BADLY NEEDED

Chairman JACKSON. *What nuclear frigates do you plan to recommend for construction in shipbuilding programs beyond fiscal year 1972? Do you agree that we should continue building at least one nuclear frigate per year for the foreseeable future? Do you think we should build more if funds are available?*

Admiral ZUMWALT. The nuclear frigate construction program beyond fiscal year 1972 is currently under careful consideration by the Navy. There is no doubt in my mind that a nuclear frigate construction rate of at least one ship per year for the foreseeable future is necessary. If adequate funds were available, I would also strongly support a building program of at least two nuclear escorts each year. However, as I have previously stated, while we need nuclear escorts and nuclear carriers very badly, we simply cannot afford as many as we would like at anything like the current or anticipated budget levels.

IMPORTANCE OF ALL-NUCLEAR CARRIER TASK FORCES

Chairman JACKSON. *What importance do you place on the role of all-nuclear carrier task forces for the fleet of the 1980's and beyond? What importance do you place on the need for nuclear frigates for assignments other than escorting nuclear carriers?*

Admiral ZUMWALT. I consider the all-nuclear striking force to be vital to the Navy of the 1980's. I would prefer to have a minimum of two such forces available on each coast. With two in the Atlantic and two in the Pacific, the Navy would be assured that at least one would always be available on each coast—and two would be available most of the time—to respond to any crisis. These forces would consist of a nuclear carrier with her modern air wing, and nuclear escorts to provide additional protection against surface, subsurface, and air threats.

The advantages of nuclear power for such striking forces are impressive. They can go where they are needed at top speed without requiring establishment of logistic support before they are sent. Their virtually unlimited range enables them to use their faster speed of advance to arrive at any crisis area much sooner than would be the case with conventional power. And when they

do get there—earlier and in less vulnerable condition because of their ability to proceed at top speed—they have far greater staying power, not only in terms of their ability to steam without worrying about fuel oil but also significantly greater staying power in terms of aviation fuel and aviation ordnance for the air wing. As compared to our newest conventionally powered carrier, for example, the nuclear-powered NIMITZ class will have 50 percent more aviation ordnance and twice as much jet fuel.

I would prefer to have four nuclear frigates as escorts for each nuclear carrier, plus additional DLGN's for independent missions. In this regard, the stated mission of the DLGN is to operate offensively in the presence of air, surface, or subsurface threat, independently or with nuclear or conventional strike forces; and to provide protection to these forces and other naval forces or convoys against air, surface, or subsurface threats.

* * * * *

NEED FOR QUALITY IN WARSHIPS

With the military and nonmilitary demands on the budget, the Nation must spend only where it is necessary and where the returned value is clear. However, the real value of having a Navy capable of countering the Soviet threat cannot be measured; our very survival may depend on it. The Soviets recognize the value of being the world's strongest sea power. We have chosen not to challenge them with numbers of ships. It is therefore particularly important that the ships we do build are the most powerful and effective weapons systems we know how to build. This of course means nuclear propulsion for our major warships.

In a memorandum for the Deputy Secretary of Defense on the subject of the DLGN Building Program dated 25 June 1971, Admiral Zumwalt stated:

From the military standpoint, taking into account national security priorities, I have concluded that we should continue building nuclear frigates at the rate of at least one per year, even taking into consideration the fiscal restrictions placed on the Navy.

7. I recognize that the initial investment cost for the frigates is high. However, overall costs including reduced logistic support requirements must also be taken into consideration as well as the superior military capabilities of the nuclear frigates. These factors are of particular importance in a time when forces are being reduced and the capability of units remaining is of an increasing concern. I am convinced that a structure of four nuclear-powered carrier task groups, for example, would afford a superior means to respond promptly to crises from a Conus base. The all-nuclear carrier task group has greater capability to penetrate and counter the projected Soviet naval threat than any other naval surface force we know how to build. By being far less dependent on logistic support than conventional forces, and by having the capability to retire at high speed for replenishment in low threat areas, the all-nuclear carrier task group has a capability to continue sustained operations in a high threat area which cannot be matched by any other currently foreseeable naval force. These capabilities are well worth the added cost involved.

8. Each time a nuclear ship is substituted for a conventional ship in a task group the military capability of the whole force is increased, with the greatest increase realized when the all-nuclear group is achieved. For example, a nuclear carrier with four conventional escorts has twice the range of a conventional carrier with the same four conventional escorts. If two of the escorts are made nuclear the range of the task group is again doubled. When all of the ships are nuclear the group as a whole has essentially unlimited high speed endurance. Past studies have shown that in terms of overall cost, including reduced logistic support requirements, each time a nuclear escort is substituted for a conventional ship with the same weapons the lifetime cost of a task group is increased only about 1 percent. I consider this tradeoff of high capability for slight relative cost to be essential in the context of reduced forces rather than the opposite. Past studies have also shown that it takes fewer nuclear ships to do the same job as conventional ships.

9. The major single part of the cost of nuclear frigates is their weapons systems, which are planned to be the best currently available. However, the nuclear frigates are the only fleet air defense ships we are currently building to modernize our forces.

In a memorandum for the Secretary of the Navy on the subject of the Nuclear Powered Aircraft Carrier, CVN-70, dated 23 March 1972, Admiral Zumwalt stated:

The CVN-70 will be the third of the three planned NIMITZ-Class nuclear-powered aircraft carriers. The first two ships of the class, the NIMITZ and the DWIGHT D. EISENHOWER, are under construction and are scheduled to be delivered in 1973 and 1975 respectively. The remainder of funding for the CVN-70 is planned for the fiscal year 1974 program, with delivery of the ship scheduled in 1980. The CVN-70 is needed to replace an old World War II carrier and is expected to be a vital element of the fleet well into the 21st century.

More than any other single new general purpose weapon system, CVN-70 will demonstrate our capability and resolve to meet the challenge of the Soviets; it will serve as a visible and credible naval deterrent. I consider CVN-70 the item of highest priority in the general purpose budget.

In addition, subsequent to publication of the hearing record, in a memorandum for the Secretary of the Navy on the subject of the Nuclear Powered Aircraft Carrier, CVN-70, dated 26 April 1973, Admiral Zumwalt stated:

It would be difficult to overstate the importance of CVN-70 to our naval strength of the future. The range of naval missions made possible by the four nuclear-powered aircraft carriers the United States will have when CVN-70 is completed in 1980 will be essential if we are to continue to insure our free access to the vital seas of the world in support of our national interests. I consider CVN-70 to be of unique importance among our general purpose weapon systems.

Senator NUNN. Let me shift to another subject, because I don't have much time. It is a question on personnel. I am not trying to make an expert out of you in personnel. But just from the point of view of our experience, the statistics we have had in the manpower sub-committee indicate that there are a lot of people onshore, in fact the shore establishment is overmanned based on the Navy's own figures, and yet there are not enough people on the ships according to the Navy's own figures.

PERSONNEL MANAGEMENT IN NAVY

I know you have a lot of responsibility in the nuclear area. What is your general view on the efficiency with which naval personnel are being managed, when you talk about the actual managing of ships.

Admiral RICKOVER. Well, I will start in a general way. I believe I have had a discussion with you in which I said I thought we had way too many admirals. I remember I discussed that. I don't see that we have done anything about it. We have about one admiral for every two ships now.

If you want to start on the personnel problem, you have got to start at the top. That is just like the Defense Department, you can't get much done because there are so many echelons there. You just can't, and they keep on growing.

The Defense Department, for example, was set up originally to have a small number of people at headquarters. Now they have thousands, and every one of them has a staff, and every one is in a chain of command. So you can't get anything settled. If you really want to make any improvement in our defense establishment, I sure would cut down on the layers in the Defense Department.

Senator NUNN. To get to the point, do you think we have enough men on our ships that are at sea now? Are we undermanned at sea?

Admiral RICKOVER. I think we are, sir. I think some ships are operating with less than their full complement. I cannot answer that exactly.

Senator NUNN. How about ships that you are familiar with under your command?

Admiral RICKOVER. Our nuclear ships are fully manned, because it is important not to operate a nuclear-powered ship undermanned.

Again, if you are interested in personnel, I would find out about various reserves. We sure don't need any reserves in the nuclear ships. There is no place for them. And yet I wouldn't be surprised if there are some.

Senator NUNN. Are there reserves in the nuclear?

Admiral RICKOVER. I am not sure. There used to be. I think they got it knocked off. But these things all come back.

Mr. Wegner, who is the nuclear personnel expert in the Navy says we do not have any.

Senator NUNN. Thank you, Admiral.

Senator CULVER. Admiral, which do you prefer, the House approved Navy program or the present?

Admiral RICKOVER. The House program, sir.

Senator CULVER. Do you agree with the House cuts in the request for cost growth and escalation claims?

Admiral RICKOVER. That is an issue which is not my responsibility. I cannot answer that question, sir.

Senator CULVER. So you would favor a \$2-billion increase, and possibly \$3 billion in this budget?

Admiral RICKOVER. I favor the House bill. I don't know what the additional cost is. But I definitely favor the House bill, sir.

Senator CULVER. The House bill, of course, includes the cuts. And I think it is perhaps within your purview to know whether it is possible to improve the willingness of the contractors to build Navy ships if we do not fully fund the requests and permit the rapid settlement of claims proposed by Secretary Rumsfeld.

Admiral RICKOVER. That is an issue which is not in my province. When I say I approve the House bill, I approve it from the standpoint of ships, I approve it from the standpoint of the new legislation put in it. It would require contractors to certify their claims.

SOVIET NUCLEAR SURFACE SHIPS

Senator CULVER. It is my understanding that the Soviet Union has only three nuclear surface ships now, and they are all icebreakers, is that correct?

Admiral RICKOVER. Yes; that is correct. They have one aircraft carrier and two more being built, but they are not nuclear. Their carriers are not nuclear.

Senator CULVER. Just three icebreakers?

Admiral RICKOVER. They have three icebreakers which are nuclear.

Senator CULVER. Why do you believe that the Soviet Union has not made their large ships nuclear?

Admiral RICKOVER. As far as I know, they have a different problem. Their carriers are not intended for worldwide operations; they are intended more for local operations. And they apparently do not intend to use them for strategic purposes. That is one of the main reasons.

And their object is not the same as ours. Ours is a long-range strategic objective.

Senator CULVER. Do you think that is one of the reasons the Soviet Union has been able to build numerically is because they have taken that elective not to build these nuclear-powered ships?

Admiral RICKOVER. Take submarines——

Senator CULVER. I am talking about surface ships.

SOVIET SUBMARINE BUILDING CAPABILITY

Admiral RICKOVER. For example, they have over 3 times the submarine building capacity that we have, and they not only aren't using it all, but they are still expanding it. As you know, they are devoting a considerable part of their technology and their economic wealth to building up their military forces far more than we are.

Senator CULVER. When you speak about your equal cost carrier task force group, Admiral, the conventional task carrier group that you described will contain two more conventional ships?

Admiral RICKOVER. Yes, sir.

Senator CULVER. The DD-963?

Admiral RICKOVER. Yes, sir.

Senator CULVER. Now, is it correct that these two ships would give you four 3-inch guns?

Admiral RICKOVER. Two 5-inch guns, sir.

Senator CULVER. Two each?

Admiral RICKOVER. Yes, sir.

Senator CULVER. And two helicopters to each to do ASW operations?

Admiral RICKOVER. I have a sheet——

Senator CULVER. Isn't that added capability important in countering the Soviet lead in attack subs?

Admiral RICKOVER. Not as much as you would get, in my opinion, with a nuclear task force without those two conventional destroyers. The nuclear powered group is a better one, and is more effective.

Senator CULVER. How?

Admiral RICKOVER. Well, you have the extra weapons carried on the nuclear ships—we have a table here——

Mr. LEIGHTON. The comparison that Senator Culver is raising is the one on page 17. But the answer is that conventional ships——

Senator CULVER. Do you want to let him answer it?

Admiral RICKOVER. Let him answer it, sir.

[Senator Culver requested that biographical material concerning Mr. Leighton be included in the record at this point. The information follows:]

BIOGRAPHICAL INFORMATION

Name: David Trent Leighton.

Present position: Associate Director for Surface Warships and Light Water Breeder Reactor, Division of Naval Reactors, United States Energy Research and Development Administration; and Program Manager for Surface Ship Nuclear Propulsion, Nuclear Power Directorate, Naval Sea Systems Command, United States Navy. Civil Service rating GS-18.

Date and place of birth: January 21, 1925, Los Angeles, Calif.

Education: Bachelor of Science Degree, U.S. Naval Academy, 1945; Bachelor of Science Degree in Electrical Engineering, Massachusetts Institute of Technology, 1948; and Master of Science Degree in Nuclear Engineering, Massachusetts Institute of Technology, 1953.

Government service:

1942 to 1945—Midshipman, U.S. Naval Academy.

1945 to 1952—General Line Officer in United States Navy serving in various sea and shore billets. Selected for Naval Nuclear Propulsion Program by then Captain H. G. Rickover in 1951.

1952 to 1953—Student in Advanced Nuclear Engineering course at Massachusetts Institute of Technology.

1953 to 1954—Cognizant engineer in Naval Reactors headquarters responsible for overall design of systems for controlling the sodium cooled nuclear reactor and the steam plant of USS SEA WOLF (SSN 575).

1954 to 1959—Project Officer in Naval Reactors headquarters responsible to then Rear Admiral H. G. Rickover for development of the two-reactor nuclear propulsion plant for the submarine USS TRITON (SSN 586) and its land prototype. Also, Project Officer for development of the propulsion plant of the first nuclear powered frigate, USS BAINBRIDGE, DLGN 25, (redesignated as a cruiser on 1 July 1975) and its land prototype. Laboratory Officer responsible for matters concerning the Knolls Atomic Power Laboratory.

1959 to 1961—Nuclear Power Superintendent, Mare Island Naval Shipyard, Vallejo, California.

1962 to Present—Resigned naval commission in September 1962. Civilian engineer responsible to Admiral H. G. Rickover for: nuclear propulsion in surface warships; the Light Water Breeder Reactor, an ERDA civilian nuclear power program directed toward demonstrating the feasibility of breeding nuclear fuel in a pressurized light water reactor; and advice and assistance on nuclear surface warship, nuclear submarine, and civilian reactor program matters.

Awards: Secretary of the Navy Letter of Commendation with Medal, 1959; Department of Defense Distinguished Civilian Service Award, 1970; and Atomic Energy Commission Distinguished Service Award, 1972.

Marital status: Married Helen A. Milligan of San Diego, Calif. on July 5, 1947; two sons—Frank Thomson Leighton and David Trent Leighton, Jr.

Additional information concerning Mr. Leighton is contained in the record of hearings on March 13, 1968, before the Preparedness Investigating Subcommittee of the Senate Armed Services Committee concerning the "U.S. Submarine Program" pages 91-108.

Mr. LEIGHTON. As contained in the Admiral's statement, 15 percent of the time, one of those conventional escorts will have to be refueled. Whenever that escort is being refueled, you degrade the entire force. You have now to go on a course and speed that is suitable for refueling. You will have it alongside the carrier, in which case carrier operations are restricted, or if you have an oiler with you, you will have to defend the oiler and restrict the speed of the entire task force to the speed the oiler can make.

FREEDOM FROM REFUELING PROVIDED BY NUCLEAR PROPULSION

Senator CULVER. When you speak about this freedom from refueling provided by nuclear propulsion, is it correct, as I have been advised, that when aircraft are operating and flying and expending fuel and ordnance, conventional carriers must replenish supplies every 3 to 5 days, and nuclear carriers something like every 5 to 7 days?

Mr. LEIGHTON. On the exact number of days we get into classification. But it is considerably more because the nuclear carrier carries 50 percent more ammunition, and it carries twice as much aviation fuel.

Senator CULVER. When you are in a combat environment you have obligations to refuel your aircraft, you are expending ordnance, and so forth. What about those?

Admiral RICKOVER. I mentioned in my testimony that for a conventional task force, one-third of the fuel is used to fuel the escorts, one-third for the carrier itself and one-third for its planes.

Now, in a nuclear task force you don't expend any fuel for propulsion of the carrier or escorts—

Senator CULVER. I think it would be important, Mr. Chairman, for the record if we could have those comparisons. You say it is classified?

Mr. LEIGHTON. The fact that there is 50 percent more ammunition—

Senator CULVER. I don't have any problem with that. I am talking about refueling.

The CHAIRMAN. I think you are right. You have got a point there. Just restate it, and we will make it a request and get the information you want.

Senator CULVER. My time has expired. I will just wait until the next round.

The CHAIRMAN. Senator Taft.

Senator TAFT. Thank you very much.

Admiral, what in your opinion is the most effective antisubmarine platform, a surface ship, an aircraft, or another submarine?

Admiral RICKOVER. They are all useful. That is a very difficult question to answer. I can't answer that question. I think if you do want an answer to that you should go to the people who are responsible. And I am not responsible for that. I think they are all useful. As you well know, we are using all of them for ASW warfare.

Senator TAFT. Does a submarine usually detect a surface ship, or vice versa?

Admiral RICKOVER. I would rather not get into that issue in any public session, sir.

Senator TAFT. Admiral, it has been argued that a principal advantage of nuclear propulsion for a surface ship is that it gives them the ability to cruise long distances at top speed.

In the terms of particularly the North Atlantic, one of our most critical areas for sea control, which is most often the limiting factor in ship speed, the fuel supply or the sea state the limiting factor?

Admiral RICKOVER. The fuel supply, sir.

Senator TAFT. The fuel supply?

Admiral RICKOVER. Yes, sir. Of course, any ship, nuclear or conventional, can get damaged by the seas. I know of an example where a carrier in the Pacific in World War II steamed at too high a speed and ripped part of the flight deck off. But that has nothing to do with whether it is nuclear powered. That depends entirely on the size of the ship and the speed it is making. It has nothing to do with its propulsion.

Senator TAFT. I have completed my questions.

The CHAIRMAN. Senator Culver.

Senator CULVER. What I would like to have for the record, Admiral Rickover, are the comparative requirements between the conventional task force and your nuclear task force operating in a combat environment where you are expending fuel and ordnance, and what the comparative replenishment supply days are.

Senator TAFT. You mean in the high intensity combat scenario?

Senator CULVER. In the combat scenario.

Mr. LEIGHTON. We can provide that information in several different scenarios, high intensity, low intensity, both classified and unclassified.

[The following information was provided for the record:]

The all-nuclear carrier task group has the capability to steam essentially unlimited distance at high speed and arrive in the combat zone ready to carry on protracted combat operations without replenishment. Since a *Nimitz* class nuclear carrier can carry 50 percent more aircraft ammunition and about twice as much aircraft fuel as the largest conventional carrier, the nuclear carrier task group can also stay in combat much longer without replenishment of combat consumables. The time on the line before requiring replenishment of combat consumables is a function of the intensity of air operations, since the nuclear task group is not limited in time on the line by the need to replenish propulsion fuel. In the case of high intensity sea control missions and in the case of sustained high tempo strike operations, aircraft fuel, rather than aircraft ammunition, controls the time on the line before replenishment is required. Therefore, the nuclear carrier task group can conduct sustained combat operations without replenishment of any kind for about twice as long as the conventional task group.

If high speed steaming is necessary to reach the strike area, to reposition forces to strike multiple target areas, to rendezvous with replenishment forces in low threat areas, or to reposition forces in response to the location of enemy forces, then the time on the line of the conventional task group before needing replenishment will be reduced due to the additional consumption of fuel by the carrier and its escorts. For example, if the task group has to steam at high speed for 1,000 miles to reach the strike area and reserve fuel to retire at high speed for replenishment, the nuclear task group can remain in the strike area about five times as long before retiring.

Senator CULVER. Admiral, you recommended nuclear cruisers as escorts for high threat areas?

Admiral RICKOVER. Yes, sir.

Senator CULVER. Would you please specify these areas. What areas were you referring to?

Admiral RICKOVER. That is a difficult thing to answer. I would say that when you get into real combat that is a high-threat area.

Senator CULVER. You did characterize the Mediterranean as a high-threat area?

Admiral RICKOVER. Yes, sir.

Senator CULVER. What other areas?

Admiral RICKOVER. That area could develop in the Atlantic Ocean. It could develop anywhere, wherever there is a concentration of ships.

Senator CULVER. If our military planners assumed that a future war will be short, less than 3 months, what is the advantage of nuclear carriers and escorts? You mentioned that we may have to fight a modern war for 2 years. Is that a modern nuclear war for 2 years, is that conceivable?

Admiral RICKOVER. First, let me take up the 3-month war concept. That was the basis on which the Germans went to war in 1914, they figured it would last for 3 months. In fact, they didn't have enough nitrate there to keep on making ammunition. If it hadn't been for the Haber process which was developed at that time they couldn't have continued the war, because they couldn't get any imports. That war lasted 4 years.

And then World War II also was supposed to end fast, and it didn't. I don't know how long wars will last, but we do know if you have any war, if you fight it furiously you are going to need replenishment faster. And that is the big advantage of a nuclear ship, that it doesn't need anywhere near as much replenishment, certainly of propulsion fuel, nor for aviation fuels and ammunition. You need replenishment of various types. But you can take the few replenishment ships and

their escorts that you have and concentrate them on supplying ammunition and aviation fuel.

Senator CULVER. Admiral, you told Senator Goldwater that you would prefer quality ships to quantity.

Admiral RICKOVER. Yes, sir.

Senator CULVER. You similarly responded to Senator Nunn. And although you do not make claims now about smaller carriers, how do you react to the following quantity cost statement: by Navy estimates we can buy nine mini-carriers for the same life cycle cost as two *Nimitz* class carriers?

Admiral RICKOVER. Would you define what a mini-carrier is?

Senator CULVER. I don't have the design characteristics, and so forth. But let me finish the statement and then you can attack it.

Admiral RICKOVER. Yes, sir.

Senator CULVER. They give the comparative life cycle costs as \$1.3 billion per mini versus \$5.7 billion per *Nimitz*. And this would be ship-only cost, it wouldn't include planes. The mini can provide 90 more aircraft at sea than two *Nimitz* class carriers. In addition, they can be in nine different parts of the ocean as opposed to two. And when you talk about the variety of threat situations we have to be prepared to anticipate, that would seem to be a strategic factor of importance. Would you speak to that?

Admiral RICKOVER. Yes, sir, I will try to.

COST COMPARISON STUDY OF SMALLER CARRIERS THAN THE "NIMITZ" CLASS

Shortly before he left office the Secretary of Defense, Mr. Schlesinger, asked the Navy to make a study of building smaller carriers than the *Nimitz* class. You haven't defined what a mini is. This would have been possibly a 50- to 60,000-ton carrier. Even that is pretty large. A considerable study was made, and the conclusion was that from a cost-effectiveness standpoint it was better to build a *Nimitz*-size carrier. The conclusion was that three *Nimitz*-sized carriers would cost about the same including the design and development cost, as three smaller carriers, but would provide over twice the combat capability.

Senator CULVER. I will have to become more familiar with some of those studies. I would be glad to have the study.

Admiral RICKOVER. Here is the study. We will turn that over to you right now.

(The study referred to is the "CVNX Characteristics Study Group Report" dated January 1976 prepared by the Office of the Chief of Naval Operations.)

[Extract from the study referred to follows:]

EXTRACT FROM JANUARY 1976 NAVY "CVNX CHARACTERISTICS STUDY GROUP REPORT"

The *Nimitz* class is an already proven design which embodies the basic characteristics needed by the Navy in future aircraft carriers. It is particularly appropriate at this point in time to reexamine the detailed specifications to achieve design-to-cost trade-offs in modernizing the class. This current study effort has surfaced a number of characteristics that can be deleted or need to be added. There are hosts of specifications, procedures, and practices that should be examined in detail with a view to reducing costs and increasing reliability, maintainability, and operability where practicable, which in turn should lead to more

effective and longer service lives for carriers. This can only be done in the acquisition process where estimates and theory can be tested against realities that attend the building of carriers. Lacking the clear decision to build a fourth *Nimitz*-class carrier and until a contractual relationship with the builder is established, further study or refinement of estimates in this study is not warranted. However, even using the upper end of the range of cost estimates for a modified repeat *Nimitz*, taking advantage of the already sunk costs in the *Nimitz*-class ships is clearly the most cost effective solution to the problem of replacement carriers.

The Navy originally proposed that a fourth *Nimitz*-class carrier be built for delivery in October 1984—4 years after the contract delivery date of *Vinson*. To achieve this delivery, the carrier must be authorized in fiscal year 1979 with a minimum of \$350 million in fiscal year 1977 and \$410 million in fiscal year 1978 for procurement of long lead time items.

Deferral of advance procurement funds from fiscal year 1977 to fiscal year 1978 delays delivery of the carrier to at least October 1985. This will also delay delivery of long lead equipment to the point that the earliest ship keel laying date that can be supported is April 1980. This is 1½ years after the scheduled launch of *Vinson*. The projected October 1985 delivery is predicated on the assumption that the shipbuilder will be able and will agree to provide the skilled manpower necessary to build the carrier in this time period, even though most of the manpower used to build *Vinson* can be expected by that time to have been reassigned to other work or laid off.

In the past 25 years, the Newport News Shipbuilding and Dry Dock Company has been awarded contracts for the construction of eight aircraft carriers; the largest gap between these carriers has been 4 years. Therefore, the minimum 5-year gap caused by deferral of long lead funds to fiscal year 1978 will create greater disruption in the carrier building program at Newport News than has been experienced at any time during the last quarter century.

The long lead nuclear propulsion plant components for the *Nimitz*-class carriers are the largest components produced for the naval nuclear propulsion program and in many cases required development of special production lines and facilities to produce them. The components for *Nimitz*, *Eisenhower*, *Vinson*, and a ship's set of shore based spares, were ordered between fiscal year 1967 and fiscal year 1973. An average of one ship's set of components was ordered every 21 months, with the longest gap between any two orders being 3 years. The last of these components was ordered in calendar year 1972. Deferral of long lead funds from fiscal year 1977 to fiscal year 1978 will put at least a 5-year gap between the ordering of nuclear propulsion plant components for the CVN-70 and a fourth carrier.

The October 1985 delivery for the modified *Nimitz* is predicated on the assumption that the 5-year gap after ordering the CVN-70 nuclear propulsion plant components will not increase new component lead time. This assumes that the component manufacturers involved will make their production facilities and manpower available at the time needed, even though these facilities are expected to have shut down or diverted to other work due to the 5-year gap between orders.

It is estimated that the minimum increase in the cost of a *Nimitz*-class carrier authorized in fiscal year 1979 due to deferral of long lead funding to fiscal year 1978 will be \$178 million, provided component manufacturers and Newport News accommodate the Navy by providing facilities and manpower necessary to support an October 1985 delivery of the CVN-71. Most of the \$178 million is attributable to inflation caused by the postulated delay of 1 year in ordering components and building the ship. The \$178 million includes allowances for disruption and loss-of-learning costs in component manufacturer's plants and at Newport News due to an assumed increase of 1 year in the gap between the CVN-70 and CVN-71. The foregoing cost estimate for a modified *Nimitz* carrier includes this \$178 million cost. Thus, if \$350 million of advanced procurement funds were provided in fiscal 1977, a modified *Nimitz*-class carrier could be delivered in October 1984, and the estimated cost would be reduced by \$178 million.

SECTION IV—CONCLUSIONS

The compounding factors of inflation, lower productivity, increased overhead, and higher profit margins have driven aircraft carrier procurement costs from approximately \$450 million for *Enterprise* (authorized in fiscal year 1958) to over \$2 billion for fiscal year 1979 CVNX. The factors have changed as follows:

As in all heavy construction programs in the U.S., the Navy Shipbuilding Program in the 1970's is suffering under the impact of inflationary trends in labor and material. The average labor rates and material costs are expected to be 360 percent and 400 percent, respectively, greater during construction of CVNX than for the construction of *Enterprise*;

Along with many other industries in the United States, the shipbuilding industry has suffered a decline in experienced labor pools. The projected delivery date of October 1985 will result in a 5-year gap between carrier building programs—a disruptive effect which will make it more difficult and costly to obtain the skilled labor necessary to build the ship and which will affect nuclear component procurement schedules and costs;

Shipyard overhead rates have increased and in some cases nearly doubled since the early 1960's. Part of this increase is due to higher energy costs and part is due to new government initiated requirements such as the Occupational Safety and Health Act, the Environmental Protection Act, the Federal Energy Act for Ocean Air and Water plus Anti-Pollution Controls. Increases can also be attributed to shipbuilder decisions and programs;

Shipbuilding corporate management's search for a higher return on investment and limited shipyard competition for a Navy ship construction is generating higher profit margins.

Nuclear powered carriers using existing nuclear reactor designs and suitable for operation of modern naval aircraft across all Navy mission areas can be designed in sizes that range upward from about 56,000 tons standard displacement. However, when compared to *Nimitz*-size carriers, at feasible force levels, smaller carriers would result in a significant reduction in operational capability (aircraft, aviation support, catapults, elevators, ship speed, reliability, etc.) for a relatively small reduction in investment and operating costs.

To a great extent, unit life-cycle cost reduction options inherent in smaller carriers with smaller air wings can be applied to *Nimitz*-size carriers with the added advantage that full air combat potential can be relatively quickly restored by increasing the aircraft inventory.

Overall, it is more cost effective to procure modified design *Nimitz*-class carriers. The principal reasons are:

Projected funding levels will support a force level of not more than 13 or 14 fully capable carriers;

At force levels of 13 or 14 carriers, high individual carrier capability is required to meet tactical requirements;

Carriers significantly smaller than the *Nimitz*-class cannot support the practical minimum number and types of aircraft required to perform missions alone in the presence of an air threat. *Nimitz*-size carriers provide more than twice the combat capability of the smallest practical nuclear powered alternative;

Nimitz-size carriers have more flexibility to incorporate changes in characteristics that may be required during the life of the ship due to changes in the threat and new technological developments;

For a three-carrier procurement program, the cost of three modified *Nimitz*-size carriers is about the same as the cost of three of the smallest sized carrier concepts developed; and

Practically all design-to-cost, reliability, maintainability, and operability options for a new design carrier can be incorporated in a modified design *Nimitz*-class carrier.

Senator CULVER. Admiral, what do you suggest to ensure adequate numbers of nuclear personnel? According to the Congressional Budget Office, we have never met our nuclear officer access goals. It is my understanding that the reenlistment of nuclear personnel has always been chronically low despite the bonuses. Can we get enough personnel to man a nuclear Navy of the scale that you envision?

NUCLEAR PERSONNEL

Admiral RICKOVER. You asked me the identical question that was asked when we had only three nuclear submarines. That was one of the objections then, that we could not get personnel. We can get personnel with the help of the work that is being done by Senator Nunn.

Our problem is that about 60 percent of the entire nuclear industry in the United States is being manned by ex-nuclear Navy people.

Secretary Schlesinger when he was Chairman of the Atomic Energy Commission estimated that the Navy had contributed between \$2 and \$3 billion to the national economy by furnishing men for the nuclear industry. They spend up to \$145,000 to train a man. Naturally when a man's Navy time is up and he has been at sea a lot and he can get a job that pays him much more than the Navy, he is going to take that job. But from a national standpoint it is good. We can get the people. A bill has been reported out, and it was being considered by Senator Nunn, which will help us. If that bill is passed it will help us a good deal.

May I add one other thing to this. The total nuclear personnel constitutes about 7 percent of all the personnel in the Navy. They certainly contribute far more than 7 percent to our military effectiveness, you should understand that, sir.

Senator CULVER. Admiral, I think one of the most significant and disturbing aspects of your statement today was your introduction, where you make reference to the incredible musical chairs involved in our defense establishment and key positions.

When I was in the South Pacific earlier this year I had occasion to meet with Admiral Gayler, and he has a picture of Admiral Gorschkov in his office. When he came here later to testify he said that he attributed the remarkable improvement in the Soviet Navy program to the fact that for over 18 years he had consistently implemented a plan, and I marveled at the plan and the naval genius of its author.

Now, we had Admiral Moorer going one way and we had Admiral Zumwalt going another, and we have Admiral Holloway coming back and going yet another, and you have a record of consistency, and not always in the same direction with the service chiefs. What is the American taxpayer to expect of our naval services, what kind of Navy do we want, and which direction are we going to go? And above all, how can we get it, so we aren't just falling between the stools all the time and deploring the fact that the Soviet Navy and their admirals and their genius is so disturbingly superior to our own? I see the difficulty of building into the bureaucracy in an insulated way leadership that would be rigid and inflexible to make accommodations in our national interest. I know one idea that has been advanced in certain planning areas is to get young admirals and get them in there and insulate them and protect them in some of those positions and let them fulfill their careers, so that we have some institutional stability and direction and consistency in the formation and implementation of naval policy.

Admiral RICKOVER. I testified earlier this year that the Navy has a built-in system for failure, largely because of this situation. You can't have it two ways, Senator, you can't put the sign up, what the Constitution says, that Congress shall be responsible for the maintenance of the Navy, and so on, and let it go on. You don't do much about it. You have the power. And when I say that——

Senator CULVER. What kind of a thing could you do?

LONGER TOURS OF DUTY

Admiral RICKOVER. To paraphrase Lord Acton's statement, I would have it that the officers exist for the Navy and the Navy doesn't exist for the officers. You know his statement. That is one thing I would do. And that is something that Senator Nunn is working at. I sure would have longer tours of duty. You cannot learn by being a traveling salesman and having a job for a couple of years and looking always to ship over to something else in order to get ahead. You can't have it that way. That is what we have in the Navy today. If you want to have a successful Navy—he mentioned Admiral Gorskoy. I can give you another example, the elder General Moltke in Germany, who was the head of the General Staff for 30 years. He was the one that was responsible for the very fine plan the German Army had for winning World War I, and they would have won it if they had followed it. He had the job for 30 years.

ROLE OF SYSTEMS ANALYSTS

Senator CULVER. I was very disturbed with the references today to the role of systems analysts, because I think given our Constitution, and our system, and civilian control of the services, that it is absolutely unthinkable that in the absence of system analysts' help and the independent view provided to the Secretary of Defense we can get any kind of harmonization and rationalization out of the vicious service rivalry and bureaucracy, and that it is almost impossible for the taxpayer to ever conceivably fund the magnitude of the request for every conceivable kind of weapons system, and so forth, that the services in their own interest very logically wish to see built.

And I don't see how on earth we are ever going to be able to get our hands on it or in fact Congress can do its job in the absence of a very strongly, improved capacity to make those independent assessments and judgments on a cost, given that the priorities between defense and nondefense, as well as the internal priorities of this defense budget, require that very kind of tough-minded calculation.

Admiral RICKOVER. That is the function of the Office of Management and Budget. But certainly the management—I don't know whether I understand you. Are you saying that we must have systems analysts?

Senator CULVER. Absolutely.

Admiral RICKOVER. You can get a housewife to do that, sir. She can tell you where something costs more. It isn't very hard.

Senator CULVER. That is not all they do. I think you are aware of that.

Admiral RICKOVER. Well, I know many housewives that can do a much better job than the systems analysts.

Senator CULVER. As you say, everyone is entitled to their own opinion.

Admiral RICKOVER. Yes, sir. I have been around and around—

Senator CULVER. I have been a Member of Congress for a long time, and I have observed the services and I have had an opportunity to observe you.

The CHAIRMAN. All right, yes, that brings us to Senator Nunn.

PERSONNEL IN SERVICE AT ONE POSITION FOR LONGER PERIODS

Senator NUNN. I want to take up the personnel matter since you have had a lot of experience, and I value that experience. I think that what you are basically describing is that we have got to do something about the up-or-out policy, are you not? Aren't you saying that we are going to have to change that policy and be willing to let people stay in the service for a longer period of time and stay in one position for a longer period of time?

Admiral RICKOVER. I will take up the enlisted personnel first, sir.

I remember many years ago, shortly after World War II, Adm. Louis Strauss, who later was Chairman of the Atomic Energy Commission, headed a group to determine how to retain people in the service. He found that the military were offering a 4-year college education to get out. We have that today, too. I understand Congress has recently voted, even though the war is over, that a person can get 4 years of college education for service in the military. Thus, you are inviting people to get out. I would rather pay them adequately and let them take care of their own education. I can see that when you are drafting people for war, particularly when the sons of rich people are going to college and getting exempted and the sons of poor people have to go to war, that you want to equalize that.

I can see the justice of that. But I cannot see the rationale in peacetime. Now, that is for the enlisted men.

As far as the officers are concerned, the training is improving now, but the system, the schools we have, most of them are fairly useless for the naval service, because they teach them things which are supposed to be good after you get out of the service. I think the service itself is contributing greatly to the situation. Early retirement for officers, after 20 years. You have things like that which work directly against what you are trying to do.

So, that is something that can be taken care of by law.

I suggest that you consider that, sir.

DOPMA LEGISLATION

Senator NUNN. We are considering all of that in this DOPMA legislation. As you know, it is a very long, complex piece of legislation, and we have to get through this defense bill before we can get back to it.

Admiral RICKOVER. These are some basic ideas that I have from my observation over almost 60 years.

Senator NUNN. The Manpower Commission which has recently issued its report has concluded some of the very things you are talking about. I don't know whether you have read that or not yet.

Admiral RICKOVER. No, I haven't, sir.

Senator NUNN. I understand your point on nuclear propulsion. It doesn't require refueling. That is certainly a great advantage. But in a war-time scenario you have got people, and ammunition, and food, and a lot of other things that have to be replenished. I believe toward the end of your statement, if I can find it, on page 49, the last sentence, when you are talking about life cycle cost, and so forth, you say:

Under such circumstances the ability of nuclear warships to retire at high speed in the areas of highest threat in order to replenish combat consumables in areas of lower threat and then return to the strike area at high speed could mean the difference between victory and defeat in the strike area.

Now, you are obviously talking about the difference in this ability between conventional and nuclear.

Admiral RICKOVER. Yes, sir.

Senator NUNN. But if the nuclear ship has to go to a low-threat area to replenish combat consumables, what is the difference in that and having to replenish fuel?

Admiral RICKOVER. The nuclear ship carries more combat consumables than the other does, sir.

Senator NUNN. So it would have to go back less often?

Admiral RICKOVER. It wouldn't have to go back for propulsion fuel. It would ultimately have to go back for aviation fuel and ammunition and ultimately it would have to go back for food. But you can carry lots of extra food in a ship.

Senator NUNN. You are saying that even on these kinds of combat consumables there would be less replenishment?

Admiral RICKOVER. Yes, sir. And you would need a lesser number of vulnerable supply ships, whether tankers or anything else, in the combat area.

Mr. LEIGHTON. May I make a comment? All the peacetime cost comparisons that are made in these studies are calculated on the assumption that all replenishment will take place right in the strike area. They assume that as soon as the ships run out of something, there will be a ship alongside to replenish it.

NUCLEAR TASK FORCE CAN STAY ON STATION LONGER

Now, if the ships have to retire to replenish, then they use up their fuel going in and out. If a conventional task force tries to do it at high speed, it will spend all its fuel getting in and out for replenishment, with a very minimum amount left for on station. If they go slowly to conserve fuel, they are off station longer. The nuclear task force can go at high speed to and from replenishment, and since they carry more combat consumables themselves, they have to do it less frequently even for combat consumables.

So, the nuclear task force can stay on the line much longer, even if it does have to retire to replenish.

Now, if somebody sinks the oiler, then the conventional task force is in deep trouble, because it continues to use its propulsion fuel all the time. And when you are talking about an opposing force of 300 submarines, far more than we have, that is a very important thing to consider. When people start sinking ships it is a different story.

There is a Navy study, and the Admiral references it in his statement, where people allowed in the scenario for ships getting sunk. When they did that they found that the number of ships supporting the nuclear force that were lost was twice as high as the ones supporting the conventional force.

Senator NUNN. It would be the other way around, wouldn't it?

Mr. LEIGHTON. I probably did say it backwards. The replenishment forces supporting the conventional task force lost twice as many ships in the study as did those supporting the nuclear ships. The cost study never took that into account. In any of the studies made on cost it is all on the assumption that nobody ever gets sunk. Even in the study I just mentioned, when you sank a replenishment ship the study as-

sumes that another replenishment ship leaves port right away. The Admiral's point in his statement is that as the Navy gets into a war situation, and starts losing replenishment ships, then with a nuclear force the Navy can concentrate all of their replenishment forces on getting the combat consumables to the force, rather than having to worry about getting propulsion fuel there. And we must recognize that for a conventional task force two-thirds of the fuel requirement is for propulsion fuel.

Senator NUNN. Right.

COMBAT READINESS OF FLEET

One other line of questioning, Admiral. What we basically have to decide within the overall budget framework is priorities. And that is our job. And one of the things that is most disturbing to read is the large number of our present fleet that is not combat ready, C-2. With that large percentage affecting our position next year, or the year after that, and with Admiral Holloway's testimony that everything in this new request by the administration, none of it will take place in terms of actual combat capability before 1985. What, in your opinion, are the priorities? Should we devote most of our resources now at this stage to get our present fleet in a higher state of readiness?

Admiral RICKOVER. I think the two objectives are not incompatible. And I will touch on the condition of the ships first.

As you may know, about 2 years ago I delivered an address in which I stated that the material condition of our Navy was the worst it has been in 50 years. I don't know whether you remember that, sir.

Senator NUNN. I remember reading that.

Admiral RICKOVER. I can send you a copy if you wish.

SPECIAL SCHOOL FOR SENIOR OFFICERS

That had some effect. In fact the immediate effect it had was this, Admiral Holloway asked me to set up a special school for senior officers in the Navy. The first course in that school started this past month. The first class includes 10 admirals and 15 senior captains. They are going to get a 4-month course before they go to their next jobs. We are going to teach them engineering and how to inspect ships. That is one outcome. I hope this can be extended into other areas. Because with the constant rotation of officers and the emphasis put on things like systems analysis and management, and so on, a concept has arisen not only in the Navy, but in all our military forces, that there are certain magic ways to accomplish things through management. A man who learns these principles is told he can manage anything in the world, whether it is a church or a ship.

For example, I had this thought the other day that if the Lord Jesus Christ had read the present rules of the American Management Association, which says there shall only be a span of seven people under one individual, he would not have been a failure, because he made a mistake, he didn't agree with the American Management Association, and he had 12. He was wrong. If he had followed the precepts of our management he would have made out better. That is the sort of thing we have in the Navy.

Seriously, it is being taught at the service academies that there are certain rules of management which apply, and you could run anything from the White House to running for Senator. If you learn these rules of management you are told you can run any job.

This is being taught at the service academies. And of course, as you know, that is not true in real life.

So these naval officers schooled in management theories get command of a ship and try to apply these rules of management to machinery. But the machinery doesn't understand the rules of management.

MAINTENANCE AND READINESS PROBLEMS RELATED TO INTERNAL MANAGEMENT

Senator NUNN. Are you saying that a large part of our maintenance problems and readiness problems don't relate to a lack of money in the budget but relate to internal management?

Admiral RICKOVER. They relate some to money, but they also relate to the fact that the people who are running the ships are not qualified to run them technically. The Navy is the most complex technical organization in the world. But the people are being brought up to neglect the actual running of machinery. This is what Admiral Holloway is trying to address right now. And I am very happy to be helping him do that.

So, with your considerable responsibility for manpower, I would certainly look into the kind of courses that are taught in the service academies, and the kind of postgraduate courses the Navy has, and why they need them. What business would have as many graduate courses—would any business get along if every 5 or 6 years it sent everyone to school for another 2 years? You see what I am getting at.

So, you may be contributing to this sort of thing.

For example, I interviewed some people, enlisted men, who wanted to become officers. I found some who had spent their first 10 to 12 years in the Navy in school, and have never done any work in the Navy. Eight more years and they can retire. Did you know that went on?

Senator NUNN. I didn't.

But, getting back to the practicality of it, no matter how much time we spend in Congress, we are basically people who are not specialists in anything, and we need to be aware of these opinions. The U.S. Navy is supposed to be managed by the Navy and the Department of Defense. And what you are saying is that the Navy is not properly managed.

I am not disagreeing with that. But the point is, nobody in Congress has got any time to spend determining whether the Navy is teaching the right courses. Why can't we get a bunch of people running the U.S. Navy and the Department of Defense to cope with this serious problem?

Admiral RICKOVER. You should give them longer tenures of duty. You are never going to get it in a short period of time, sir.

Senator NUNN. Who do you mean by them?

Admiral RICKOVER. The people in charge. You mentioned before about the Russian commander-in-chief. I mentioned earlier General Von Moltke, people who had tenure—

Senator NUNN. You are speaking of the uniformed services now and the DOD, or both?

Admiral RICKOVER. Well, the civilians are political appointees, and that necessarily has to change with each administration. That is another matter. But the permanent people should have their jobs much longer.

RECOMMENDATION FOR LONGER TOURS OF DUTY FOR SERVICE CHIEFS

Now, I was partly instrumental in having—I testified to Congress in support of having the heads of the services serve 4 years instead of 2 years. This is something that the Senate committee did here several years ago. The term of service chiefs used to be 2 years, and now it is 4. You can always get rid of the man if you don't like him. But if the service chief is doing a good job I would keep him longer, and I wouldn't require him to do what Churchill described as "Buggin's turn," which was his term for describing the system for giving a high position to an officer, just because he was the most senior one on the promotion list. Nor would I make promotion depend on the large number of jobs an officer has held, but on how well he does a given job.

These are some suggestions.

Senator NUNN. I think we have got to start at the top to find how the people at the start are given an opportunity to adequately manage the situation. I don't think you are ever going to have a situation where Congress will get into the details of how it is run.

Admiral RICKOVER. Congress appoints the Board of Visitors to the academies, sir.

Senator NUNN. Right. And you know how many times the Board of Visitors gets to visit. Usually the visit takes place when you are voting in the committee on a new submarine.

Admiral RICKOVER. If you get on that Board of Visitors and you ask for my advice, I would be glad to give it to you, sir.

Senator NUNN. Mr. Chairman, I have used up my time.

The CHAIRMAN. Admiral, you are a great man in many places, and have proven it over and over by your contributions. In your statement here, if you meant it seriously, you said that given a choice between the two fleets that you would take command of the Russian submarine fleet. It is not a question of loyalty, of course. That could be a very disturbing statement to the American people. What did you mean by that? I think you ought to elaborate on that some more.

Admiral RICKOVER. Yes, sir. I will. First, they have more submarines, which in itself is significant. And second, their submarines are faster—some of them are. I have to be careful how I answer. They keep on building many more. Ultimately you get to a point where no matter how excellent each one of your own ships is individually, if the other side has many more than you have, they are going to overwhelm you.

SOVIETS CONSIDER SUBMARINES AS MOST IMPORTANT PART OF THEIR NAVY

The Soviets also are spending a considerable part of their national income on their military, and particularly on the navy. They are devoting about twice as much to their submarines from a comparative standpoint as we are. They have said that they consider their sub-

marines the most important part of their navy, and they are acting that way.

The CHAIRMAN. This is serious business and I know you consider it such. You emphasized yourself that you haven't been given command positions in your naval career. But are you saying here that the Russian fleet is superior in power and could meet a given situation and overcome the American fleet?

Admiral RICKOVER. I am only talking about submarines, sir.

The CHAIRMAN. I understand that.

Admiral RICKOVER. Here is what I said. This is on page 6 of my testimony:

Of even greater concern than total numbers is the fact that since 1968 the Soviets have introduced over nine new designs, or major modifications in design, besides converting older designs to improve their capabilities. They have introduced significantly improved versions of their attack, cruise missile, and ballistic missile nuclear submarine designs.

In the last eight years they have introduced more new submarine designs than have ever been put to sea, during a comparable period, in all of naval history. The U.S. on the other hand, has introduced only two new design submarines in this period.

This comparison should not be surprising since we spend less than 20 percent of our naval budget on submarines while the Soviets spend approximately 40 percent.

This is the basis for my categorization, sir.

The CHAIRMAN. You say they have introduced several new designs within the last few years. Just what does that imply? What does that mean, a design? A new kind of attack?

Admiral RICKOVER. Yes, sir. They introduce new types of submarines to try out new ideas. We don't. We can't get money for new designs.

The CHAIRMAN. You have gotten more money, incidentally, than you have been able to get bidders for, haven't you, unless it restarted here in very recent times? I remember last year when we were in conference we had a bill up there of authorized attack submarines, and had the money appropriated too, but you hadn't been able to get the bids. Are you familiar with all that?

NEED FOR INCREASE IN SHIP BUILDING CAPACITY

Admiral RICKOVER. That is largely due to the feast or famine situation in Navy shipbuilding, where you don't have a plan that extends more than 1 year. If we had a real 5-year plan we could get the needed capacity. But the future program is changing all the time, and it is not worthwhile for any shipbuilder to go ahead and make investments. The Russians, on the other hand, as you well know, have three times as much capacity for submarine shipbuilding, and they are even increasing that.

Let me quote another sentence—

The CHAIRMAN. Let me go back. A year ago I know at the conference we had these matters up about submarines. Congress has always strongly supported submarines, as you know.

Admiral RICKOVER. Yes, sir, I know.

The CHAIRMAN. At that time there was some money on hand authorized and appropriated for that they hadn't been able to get under con-

tract as you wanted to. You say this morning that that situation has been relieved now, and you feel more confident?

Admiral RICKOVER. Yes, sir, I do.

The CHAIRMAN. I remember over the years too that the Congress has authorized and then appropriated money for a good number more submarines than the budget request carried, that is true, isn't it? You are in great part, responsible for that.

Admiral RICKOVER. That is right. I am not blaming Congress for that. It is the Defense Department. You are correct, sir.

The CHAIRMAN. Now, this statement, though, that the submarine fleet, is also superior to what we have, my impression is, if you had been knowing that any time you would have been talking even louder and more often than you have about this submarine matter.

Admiral RICKOVER. I have said this several times, sir.

The CHAIRMAN. Do you want to comment on that?

Admiral RICKOVER. But the place where any responsibility or credibility lies is in the Defense Department, the systems analysts in the Defense Department.

Let me read you one more sentence.

The CHAIRMAN. I know that you have to contend with that. But you are pretty good there.

Admiral RICKOVER. Not with systems analysts, because I don't understand them.

In the areas of attack submarines the Soviets have a total of 190 units compared to our 75. That is attack submarines. Of their total 40 are nuclear powered while 65 of the U.S. units are nuclear.

The CHAIRMAN. Before you go away from that, how modern are theirs compared to ours? You have just said that we have 65 nuclear powered to their 40.

Admiral RICKOVER. As far as diesel submarines are concerned, we only have 10 left. They all date to just about the end of World War II. Their diesel submarines are much more modern than ours. Their nuclear submarines are modern. I would say that their ballistic missile submarines—the Yankee class as you know are more modern than our Polaris, the Delta class is even newer than their Yankee class.

Let me keep on reading: "However, Russia has 65 additional submarines armed with the unique capability of firing cruise missiles. They have 65, and we have zero. Of their 65 units, 40 are nuclear powered." So they have 65 submarines which can fire cruise missiles, which are all the rage right now, and we have zero.

The CHAIRMAN. While you are on that, what about their cruise missiles? How far along is their development, if you can tell that.

Admiral RICKOVER. I can't discuss that subject, sir. If you wish that information, I will get it to you.

The CHAIRMAN. All right. I would like to know, it is so relevant. All right, go ahead.

SOVIET SUBMARINES FIRING CRUISE MISSILES GREATEST THREAT TO U.S. NAVY

Mr. LEIGHTON. I think an unclassified statement would be, the Navy has said that this is the most serious threat to the U.S. Navy today, the Soviet cruise missile fired from submarines.

The CHAIRMAN. All right, thank you.

Go ahead, Admiral.

Admiral RICKOVER. I would like to tell you, in that connection, when the Polaris submarine program was started the Navy did have the first version of a cruise missile submarine. I recommended that it not be retired. But it was cancelled by the Defense Department.

The CHAIRMAN. At the beginning of the Polaris program?

Admiral RICKOVER. At the beginning. The decision was made to cancel the cruise missiles and their submarines.

Another thing that happened was that for several years I have been developing a propulsion plant that could be used for a cruise missile firing submarine which has been almost killed every year. It is still slightly alive. I am the only one that has carried that development on, over the objection of the system analysts in the Defense Department.

The CHAIRMAN. A cruise missile firing submarine?

Admiral RICKOVER. A propulsion plant for a submarine that could fire missiles submerged.

Senator NUNN. Will not our attack submarine also have that capability?

Admiral RICKOVER. I can read you one more sentence: "The U.S. does not have any submarines capable of firing cruise missiles, although our Navy is developing a version of the Harpoon missile which will be capable of being fired from submarine torpedo tubes." I can tell you that much.

Senator NUNN. I would make a brief suggestion. I think it would be extremely helpful if we got Admiral Holloway and Mr. Clements, and perhaps Secretary Rumsfeld, and Admiral Rickover, and whoever else we consider to be experts in this overall naval situation, and perhaps in a closed session get them all lined up right here, and take five or six major points and thrash them out. What we end up doing is hearing from one, and then hearing a rebuttal from another. I have a great deal of personal respect for Admiral Rickover, I inherited that, it comes down through the family line. I am very conscious of what you are saying. And I think it is extremely important.

I would like to see us have some kind of session like that at some point. Because it is very difficult to get in these areas of expertise and then have a complete contradiction from so many different areas, and yet not have the same people here at the same time. I know Admiral Rickover would be glad to participate in that kind of a hearing.

Admiral RICKOVER. You know, I am not acting under instructions, sir.

Senator NUNN. I realize that.

The CHAIRMAN. All right, gentlemen, are there other questions now?

Senator NUNN. I don't have any now.

The CHAIRMAN. Mr. Braswell, do you have anything you want to add?

Mr. BRASWELL. No, sir.

The CHAIRMAN. Senator Thurmond wanted to get here, but he sent word for us not to wait any longer because he has been detained. Without objection his questions will go in the record.

I am going to ask now if there is something else you want to say. Do you have some matters now that you want to give in closed session?

Admiral RICKOVER. No, sir, I have none, except to suggest that I supply the answers to the questions about the cruise missiles for the record, if that is satisfactory.

The CHAIRMAN. You would like to propose an answer for the closed report to the Senator's question?

Admiral RICKOVER. Yes, sir.

The CHAIRMAN. Senator Nunn, do you have anything else?

Senator NUNN. No, sir. This cruise missile situation is very important and the delivery system and the capability that we have I think would be the subject of a good hearing, a closed hearing, probably.

The CHAIRMAN. All right, you will supply for the record, and right away, these answers here. And we will have that before us then.

Is there anything else you want to say?

Admiral RICKOVER. No, sir. I do want to thank you very much for your courtesy.

The CHAIRMAN. We want to thank you.

Senator NUNN. May I ask one further question?

Admiral, getting away from the point of conventional or nuclear, in other words, assuming that the mix of ships was exactly what you wanted in terms of nuclear in this package that is being provided by DOD now, do you agree with the type ships that are being advocated as the priority ships that we should have?

Admiral RICKOVER. For AEGIS ships?

Senator NUNN. In the overall supplemental package, do you agree with the type ships that we need as the priority ships that aren't being built today?

Admiral RICKOVER. I agree with the House recommendations, that is the simplest way of answering it, sir.

Senator NUNN. But not with the administration package?

Admiral RICKOVER. No, sir.

Senator NUNN. Not even on the type ships, I mean assuming that the administration package was nuclear, you still wouldn't agree with that as a priority?

Admiral RICKOVER. I can't speak for the smaller ships, because I am not familiar with them, sir. But as far as the nuclear ships are concerned, which I consider the most important, I would go along with what the House voted. It is the simplest way I can answer it.

Senator NUNN. Thank you. That answers it.

ADDITIONAL QUESTIONS SUBMITTED FOR THE RECORD BY SENATOR THURMOND

Senator THURMOND. *Admiral, why does the conventional cruiser, DDG-47, not carry the cruise missile TOMAHAWK?*

Admiral RICKOVER. I understand from those responsible for the DDG-47 characteristics that since the DDG-47 was constrained to the DD-963 hull, there was a limit to the weapons that could be put on the ship. Therefore, since the mission of the DDG-47 did not include a requirement for independent offensive operations, the cruise missile was not included.

Senator THURMOND. *How does this weapon compare with the HARPOON on the conventional cruiser?*

Admiral RICKOVER. The TOMAHAWK is capable of a 300-mile range vice about 60 miles for the HARPOON with a warhead with twice the explosive power. Further, I understand there will be more sophisticated guidance and homing systems on TOMAHAWK.

Senator THURMOND. *In what way is the difference in the eight inch and five inch guns on the nuclear and conventional carriers respectively?*

Admiral RICKOVER. The nuclear strike cruiser will be able to bring within gun range targets in an area about nine times greater than the area covered within the gun range of the conventional ship.

Senator THURMOND. *How much more does the better weapons on the nuclear cruiser add to the cost?*

Admiral RICKOVER. About half of the difference between the cost of the CSGN and the DDG-47 is due to the differences in military characteristics other than propulsion. If the 8 DDG-47's in the President's program were given the CSGN military characteristics other than nuclear propulsion, their cost would increase an average of \$250 million per ship.

Senator THURMOND. *Of course, the cost of the nuclear ship includes fuel for 15 years. What is the cost of the fuel for the conventional ship for 15 years?*

Admiral RICKOVER. To provide the same steaming as the 15 year cores provide the nuclear strike cruiser, a conventional cruiser would use about 3,000,000 barrels of oil. The cost of buying and delivering this amount of fuel in peacetime at current rates would be about \$90 million.

Senator THURMOND. *How do you figure the cost of oilers and other support ships for the conventional cruiser in the cost comparison?*

Admiral RICKOVER. The cost of support ships, other than those that deliver oil is not included in the \$90 million equivalent cost of buying and delivering oil for an individual CSGN. The cost of delivering oil, based on Navy studies, is about \$15 per barrel or about the same cost as buying that barrel of oil. This cost was computed by dividing the average annual peacetime cost of the Navy's oilers by the total fuel delivered by those oilers. In the Navy's task force life cycle cost studies of February 1976, a similar method was used except that the appropriate cost of stores ships and other supply ships as well as oilers, was allocated to the life cycle cost of the nuclear and conventional task forces.

Senator THURMOND. *Admiral, is there any way to evaluate the worth of the higher endurance you get with a nuclear ship?*

Admiral RICKOVER. I do not know how to do so by a numerical calculation, particularly since the cost studies are all based on peacetime costs and assume that oil can be delivered without opposition whenever and wherever it is needed. I consider that the worth of freeing naval strike forces from the need for propulsion fuel oil must be evaluated on the basis of military judgment. In my view the declining number of overseas bases, the decreasing availability of oil, and the increasing vulnerability of oilers and tankers all emphasize the military worth of nuclear propulsion for naval strike forces.

Senator THURMOND. *I note on pages 41 and 42 of your statement you conclude the cost of seven nuclear cruisers and two nuclear and six conventional ships about equal. Why then is Defense asking for an exception to build conventional cruisers?*

Admiral RICKOVER. The basis for the Department of Defense recommended program to build a mix of two nuclear strike cruisers and eight DDG-47 Class non-nuclear ships in the five-year period from FY 1977 through FY 81 is contained in the President's letter to the Congress of February 13, 1976. The House Armed Services Committee published on pages 531 through 564 of Part 4 of their Report No. 94-33 a Seapower Subcommittee staff report titled: "Critique of the Presidential Determination that it is not in the National Interest to Construct Nuclear Powered Major Combatant Vessels for the Strike Forces of the United States Navy, and Reasons why the Determination Should be Rejected."

Senator THURMOND. *Admiral, when will the last of the conventional cruisers in the five-year plan enter the Fleet? How long do you expect it will be in the force?*

Admiral RICKOVER. The last DDG-47 in the FY 1981 program is scheduled for delivery in 1986. Based on the current practice of keeping ships in service 25 to 35 years, this DDG-47 could be in service as long as the year 2010 to 2020.

Senator THURMOND. *This bothers me. We are buying eight ships over five years of around 9,000 tons in this conventional cruiser. Yet, it will serve when oil may be critically short. Further, it will carry AEGIS—our high-threat area missile defense system—for use in high-threat areas.*

Why are we placing oil-dependent ships in high-threat areas?

Admiral RICKOVER. The Navy will have to fight with whatever ships it has at the time they are needed. The AEGIS ships will be few in numbers regardless of their means of propulsion because of their high cost. Since the AEGIS system

is the only fire control system expected to be able to counter the projected Soviet threat, the AEGIS ships will be needed in the areas of highest threat. Unless the AEGIS ships are provided nuclear propulsion, the Navy will have no choice but to use oil-fired AEGIS ships in high threat areas.

Senator THURMOND. *Did the Navy want nuclear propulsion for "all" its cruisers with AEGIS?*

Admiral RICKOVER. Originally, sir, in 1971, Navy programs were based on all AEGIS ships being nuclear. Admiral Zumwalt in 1973 planned a mix of nuclear and non-nuclear AEGIS ships. After becoming the Chief of Naval Operations in July 1974, Admiral Holloway recommended to the Department of Defense that an all-nuclear AEGIS ship program be adopted in lieu of a mix. Admiral Holloway subsequently testified in support of the mixed program proposed by the Department of Defense which included eight DDG-47 Class non-nuclear AEGIS ships and two nuclear strike cruisers to be built over the next five years. However, in his testimony on March 2, 1976 to the Seapower Subcommittee of the House Armed Services Committee, Admiral Holloway presented his "personal professional views concerning the force structure of the fleet of the U.S. Navy in the future." In that testimony he recommended a five year building program of nine nuclear strike cruisers and seven DDG-47 Class ships be authorized in the period FY 1977-FY 1981 and recommended that the nuclear cruiser LONG BEACH be converted to an AEGIS strike cruiser in FY 1979 with advance procurement funds in FY 1977. He testified that the purpose of the DDG-47 Class ships would be "primarily to operate with the non-nuclear task forces and to provide anti-air warfare protection for amphibious forces, underway replenishment groups, and convoys." He said that the nuclear strike cruisers "could be integrated with the all-nuclear task forces. In addition, they would provide the nucleus of surface combatant task forces for sea control operations in areas where force projection may not be required, and the aircraft threat is not at maximum intensity."

Admiral Holloway has testified to your Committee that the escorts for nuclear carriers should be nuclear powered and that all cruisers should be nuclear powered. For some reason I do not understand, the non-nuclear AEGIS ship is called a destroyer and is designated a DDG. In actuality, it will have greater displacement and more armament than any of the eighteen non-nuclear cruisers and two of the nuclear cruisers built since World War II. It will have cruiser weapon systems in a cruiser size hull.

Senator THURMOND. *I have asked Secretary Rumsfeld for the Navy's expanded ship program now that the President has acted. Admiral, do you know if the mix now before us was changed in the expanded program?*

Admiral RICKOVER. The President's letter to the Congress of February 13, 1976 recommended a mixed program of eight non-nuclear ships and two nuclear ships to be authorized over the next five years, a ratio of four conventional to one nuclear. Secretary Rumsfeld testified to your Committee that the program now proposed by the President included building a mix of AEGIS ships in the ratio of two conventional to one nuclear, but he did not spell out a specific five year building program. As I said in answer to a previous question, Admiral Holloway testified that his "personal professional" recommendation is that nine nuclear cruisers and seven DDG-47 Class ships should be authorized in the next five years.

Senator THURMOND. *Do you favor development of the strategic cruise missile?*

Admiral RICKOVER. I am not in a position to comment on the strategic cruise missile, sir.

Senator THURMOND. *Admiral, do you feel there is sufficient tube and storage space to use strategic cruise missiles on attack submarines?*

Admiral RICKOVER. Again, I am not in a position to comment on the strategic cruise missile, sir.

Senator THURMOND. *I understand there is space because a full torpedo load still leaves space for other specialty weapons. Is that correct?*

Admiral RICKOVER. The number of torpedoes carried by an attack submarine depends on the nature of the mission, the geographical area in which it is to operate, and the readiness condition of the Fleet. Attack submarines presently could carry some types of missiles and anti-submarine rockets in addition to a load of torpedoes which would be adequate for some missions.

Senator THURMOND. *Would you favor a larger sub force to capitalize on the cruise missile potential?*

Admiral RICKOVER. For a number of years, I have advocated building attack submarines capable of firing long-range tactical cruise missiles. The Soviets have 65 cruise missile firing submarines of which 40 are nuclear powered. The United States presently has none. A cruise missile submarine can function as both an anti-submarine and anti-surface ship weapon platform and when nuclear powered is one of the most effective ships that can be built. I certainly believe we should have nuclear powered cruise missile submarines in our fleet.

ADDITIONAL QUESTIONS FOR THE RECORD BY SENATOR BARTLETT

Senator BARTLETT. *Admiral Rickover, I know that your expertise lies in the field of naval nuclear propulsion, however, I would like to get your opinion as a naval combat officer regarding the sea-launched, cruise missile, SLCM.*

Do you believe that the SLCM is a good weapon for the Navy, and do you believe that it should be limited to a tactical use or have a strategic role also?

Admiral RICKOVER. The sea-launched, cruise missile provides an offensive range capability for submarines and surface combatant ships other than aircraft carriers, which is not attainable through other shipboard weapons systems. Surface warships and submarines, operating independently of carriers, as they frequently must, have no offensive strike capability comparable to that of the Soviet Navy with their cruise missiles. As I previously indicated, I have recommended for some time that we should have nuclear powered submarines with a tactical cruise missile capability, particularly in view of the growing strength of the Soviet surface navy. Also, I have strongly supported the nuclear strike cruiser concept which includes the SLCM.

As I indicated earlier, I am not in a position to comment on whether we should have strategic cruise missiles.

The CHAIRMAN. This concludes our hearing.

[Whereupon, at 12:25 p.m., the committee adjourned subject to the call of the Chair.]

