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COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-FIRST CONGRESS

SECOND SESSION

SUBCOMMITTEE ON DEPARTMENT OF DEFENSE

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RALPH PRESTON, JOHN GARRITY, PETER MURPHY, ROBERT FOSTER,
and GARY MICHALAK, *Staff Assistants*

¹ Assigned to subcommittee Feb. 20, 1970.

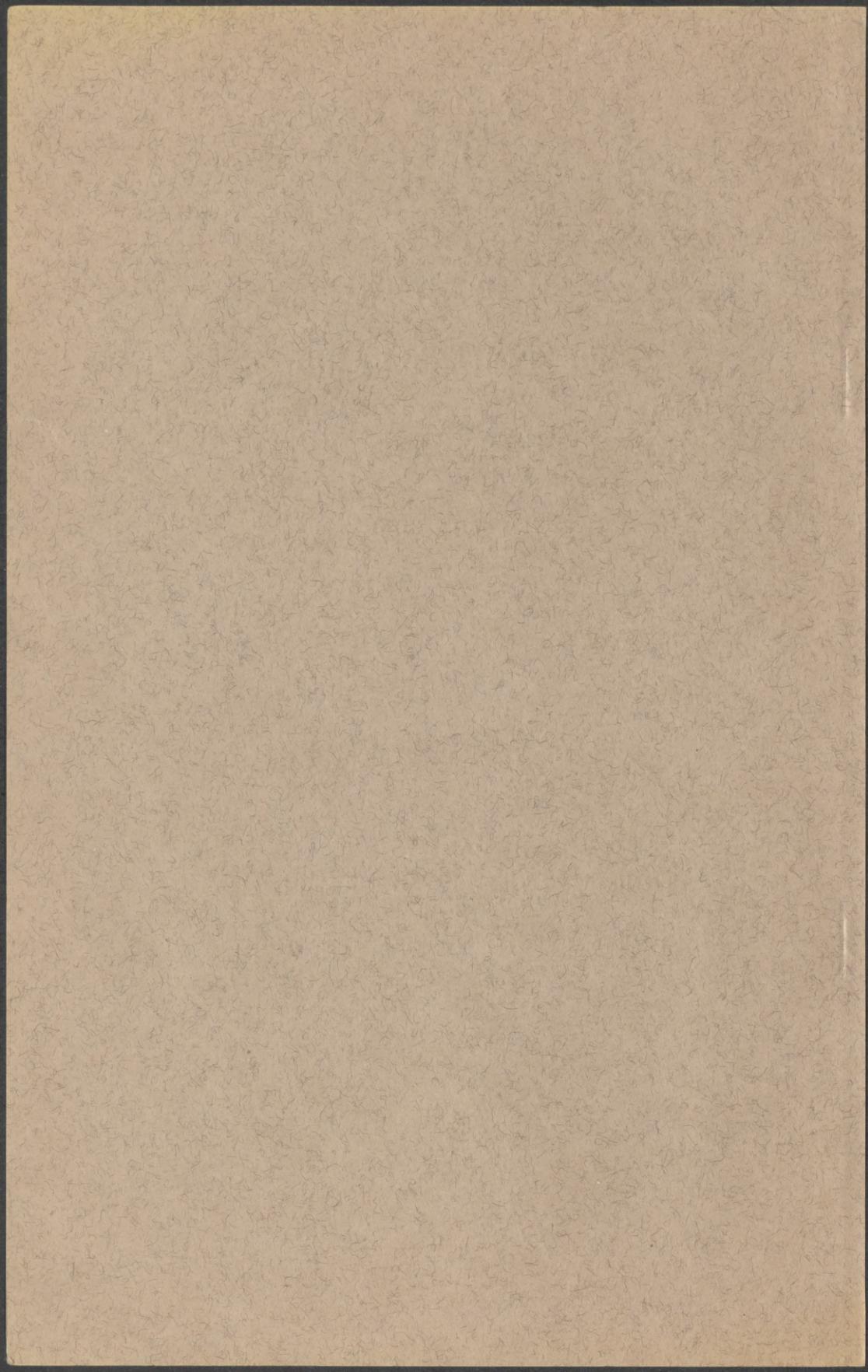
PART 7

Testimony of Vice Adm. Hyman G. Rickover

Printed for the use of the Committee on Appropriations

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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1971

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U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1970

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CONTENTS

	Page
Opening remarks.....	1
Congress—the Nation's most complex profession.....	2
Desire for peace.....	3
Abolitionists' budget cuts cause loss of <i>Merrimac</i>	3
Peace requires commitment by all parties.....	4
Nuclear-powered ships.....	5
Soviet submarine threat.....	7
New Soviet submarine designs.....	8
Delay in U.S. high-speed submarine.....	8
United States and Soviet submarine forces compared.....	9
Loss of U.S. numerical lead in nuclear submarines.....	10
Soviets possess global mobility.....	11
Soviet submarines have high-speed capability.....	12
U.S. submarine program.....	12
Navy emphasis on carriers.....	14
Need for Deputy Chief of Naval Operations for Submarines.....	14
Loss of U.S. leadership in submarines.....	15
U.S. Navy has no design capability.....	16
Administrative difficulties.....	17
Defense Department has more checkers than doers.....	18
Modern technology requires higher standards.....	19
Reduction of technical proficiency.....	20
Industry not responsible for successful defense product.....	21
Technical experts reduced in status.....	22
Unnecessary delays.....	22
Delays cost money.....	23
Reduction of administrative personnel.....	24
Naval Materiel Command.....	24
Reduction in headquarters personnel.....	26
Assignment changes too frequent.....	28
Officer career management.....	29
U.S. submarine program.....	30
Priority of submarine program.....	31
Program management.....	33
Legislative oversight.....	34
Quiet submarine program.....	34
Submarine-launched ballistic missiles.....	35
Nuclear aircraft carriers.....	36
Overseas land airbases.....	36
Loss of overseas land air bases.....	38
The strategic situation.....	38
Bare base kit.....	38
Why we need carriers.....	39
Advantages of nuclear propulsion.....	39
Lessons from World War II.....	39
Joint Chiefs of Staff position on CVAN70.....	40
Why CVAN70 funds are needed in fiscal year 1971.....	43
Effect of deferring funds for CVAN70.....	44
The Russians don't have attack carriers.....	46
Lessons from history.....	46
Free use of seas necessary.....	47
Russians are more self-sufficient than United States.....	47
Weapon systems vulnerability.....	48
Washington Naval Conference of 1921.....	49
Naval treaty allowed U.S. 18 battleships plus carriers.....	51
Carrier force levels after World War II.....	52

IV

	Page
Contributions of the systems analysts.....	53
Nuclear surface ships.....	54
Nuclear frigates.....	55
Nuclear frigate building rate.....	56
Hon. Glenard P. Lipscomb.....	58
Nuclear escorts.....	58
Vulnerability of Polaris submarines.....	61
Publication of technical information.....	62
Measures to stop release through advertising.....	63
Security at shipyards.....	64
Agitation in colleges.....	65
Views of Admiral Rickover on campus unrest.....	66
Campuses are not sanctuaries.....	73
Schools do not teach.....	74
Life's calling is to work.....	75
Universities should concentrate on academics.....	76
Service academies.....	77
Inadequate technical education at Naval Academy.....	77
Poor performance by Naval Academy graduates.....	79
Navy postgraduate education.....	79
Postgraduate education career requirement.....	80
Defense procurement practices.....	81
Needed improvements in contracting.....	84
Renegotiation Act should be strengthened.....	85
Uniform cost accounting standards.....	86
Lobbyists attempt to weaken standards.....	87
Defense Department reluctant to act.....	88
Lack of competition.....	88
"Competitive Negotiated" contracts.....	89
Shipbuilding contracts and cost controls.....	90
No forgiveness in bureaucracy.....	97
Pentagon must change philosophy.....	97
Truth-in-Negotiations Act.....	98
Industries refuse to comply with law.....	99
Ways to circumvent the law.....	100
Shipyards fail to implement law.....	101
Problems raised with Defense officials.....	102
Personnel interchange between Government and contractors.....	103
The Industry Advisory Council.....	104
Renegotiation Act deficiencies.....	105
Changes in contractual relationships.....	106
Claims against the Government.....	107
Operations of corporate conglomerates.....	108
Resentment is felt by youth.....	109
Defense business not efficient.....	110
Need for uniform accounting standards.....	111
Need for mutual considerations.....	112
Independent research and development.....	112
Priority of recommendations.....	113
Submarine construction program.....	114
In-house technical capability.....	115
Shipyards certification for nuclear propulsion work.....	116
Shipyards costs.....	117
Shipyards performance.....	118
Progress on SSN688 class.....	120
Reduction in shore establishments.....	121
Speech to Navy League in Charleston, W. Va.....	122
Conclusion.....	127
Appendix: Reports on procurement and cost control at private shipyards.....	129
Index.....	171

WEDNESDAY, MAY 13, 1970.

NAVAL NUCLEAR PROPULSION PROGRAMS

WITNESSES

VICE ADM. HYMAN G. RICKOVER, DIRECTOR, DIVISION OF NAVAL REACTORS, U.S. ATOMIC ENERGY COMMISSION
W. WEGNER, DEPUTY DIRECTOR, DIVISION OF NAVAL REACTORS, U.S. ATOMIC ENERGY COMMISSION
D. T. LEIGHTON, ASSOCIATE DIRECTOR FOR SURFACE SHIPS AND THE LIGHT WATER BREEDER REACTOR, DIVISION OF NAVAL REACTORS, U.S. ATOMIC ENERGY COMMISSION
M. C. GREER, ASSOCIATE DIRECTOR FOR FISCAL MATTERS, DIVISION OF NAVAL REACTORS, U.S. ATOMIC ENERGY COMMISSION

OPENING REMARKS

Mr. MAHON. The subcommittee will be in order.

Admiral Rickover, we traditionally have asked you to come before the committee in connection with our consideration of the annual Defense appropriation bill. On the day that you appear, we convert this room into a, shall I say, "Think Tank", and try to look at some of our problems perhaps in a little more philosophical way.

We are glad to have you before us this morning, along with members of your staff.

How would you like to proceed with the discussion today?

Admiral RICKOVER. If it is satisfactory to you, sir, I would like to direct my testimony in general toward the subject of our military situation. In particular, I would like to discuss the status of our nuclear submarine, aircraft carrier and frigate programs and give you my thoughts on what should be done in these important areas. I would also like to discuss contracting practices in the Department of Defense particularly as they relate to inefficiency in the conduct of Defense Department business.

Mr. MAHON. Admiral, we have a number of questions we want to ask you. Would you like to proceed now?

Admiral RICKOVER. Yes, sir, if it is satisfactory to you, I would like to proceed with my opening remarks.

First, I would like to express my sense of deep gratitude for permitting me to testify in this very open and friendly manner. It is a courtesy and an honor that I highly value. There are many who have done more than I have, but few who have ever been treated as well as this committee treats me. That is true both in your attitude toward me and the support you have given my work. You don't give me everything I ask, but I am fully aware of the almost impossible task you face in allocating funds for the country's needs. I cannot but be completely grateful for what you have done for the programs for which I am responsible.

In the brief and informal discussion we had before the committee came to order I mentioned what I thought was the difference between the House of Representatives today and as it was in 1789. May I briefly repeat what I said?

CONGRESS—THE NATION'S MOST COMPLEX PROFESSION

Mr. MAHON. Yes.

Admiral RICKOVER. I said the job of a Congressman or a Senator in those early days was relatively simple. The problems the country faced were very simple by today's standards. Our country was small, the population was but four million, and the Federal budget was only a few million dollars. Today we are a very large country, our population is over 200 million, and we are at the apex of a tremendous industrial revolution. And most of our people and our states expect the Federal Government to solve their problems and to pay for their solutions.

You are now faced with many complex issues. To deal with them great wisdom is required, so much so that even members of Congress who have been in these halls for 20 to 30 years do not have the requisite wisdom. They must call on many others for expert advice.

It seems to me almost impossible for anyone in these times to make a contribution in a two-year term of Congress, as was then the case. In the eighteen hundreds it was quite possible to run the country with a rapid turnover in the legislative branch. It is no longer possible to run the country effectively this way. There must be people in Congress who are deeply familiar with the issues. Furthermore, there is now imminent danger to the country far more frequently than ever before. These require great wisdom and expertise in the Congress if they are to be effectively handled.

This is the way I see it. Being a member of Congress has become the most complex profession in the United States. I may become a so-called expert in nuclear power, but those who sit on the other side of the table must be expert in a thousand things. I just don't know where you are to get the wisdom you need. On top of that, you must make many political decisions and you must run for office every two or six years. It seems to me this places an almost intolerable burden on you. Taking all these elements into account, I do not believe the people of the United States understand that we have a far better Congress than we deserve.

If it could be made possible for citizens to run for Congress without requiring them to raise large campaign funds, I believe we would have the best legislative body the world has ever known. I urge that anything that can be done to free those who aspire to Congress from depending on large campaign funds would be worth untold sums of money to the people of the United States.

I deeply and sincerely feel that the members of these two bodies are collectively as fine and capable a group of men as there is in the United States. I hope you can tell by my earnestness that I mean what I say.

Mr. ANDREWS. I read the other day that running for Congress today is comparable to volunteering for service at the Alamo.

Admiral RICKOVER. You have been able to sharpshoot your way, Mr. Andrews.

I would hope that what I have said will be taken as a heart-felt tribute to the members of this committee. I would like now to talk for a moment about the general situation facing the nation.

DESIRE FOR PEACE

There are large number of people today who want peace. They so fervently want peace that they advocate an immediate reduction in defense spending so that the money can be used for domestic purposes. Those who so advocate do not test their theories or their deductions by facts or by events.

I am sure every member of this committee, everyone in this room, wants peace. Unfortunately, it is very difficult to attain. It cannot simply be willed to happen as many believe today, nor will it be brought about by reducing expenditures for defense. History is replete with examples of the strong conquering the weak irrespective of the moral issues involved. If history teaches anything it is that weakness invites attack; that it takes but one aggressor to force the world into war against the desires of peace-loving nations if the former is militarily strong while the latter are not. This lesson has been completely ignored by many who today advocate unilateral disarmament.

Why should we eagerly believe what a minor Soviet official attached to the United Nations says at a cocktail party about the peaceful intentions of the Soviets, or similar statements by an itinerant midwestern scientist after a visit to the Russian scientific complex at Novosibirsk? Why do we not believe what the 200 leading members of the Communist Party, including the ruling group, tell their worker councils and their farm communes, and openly announce in their press? Why do we not believe their senior military men when they proclaim their intent to achieve superiority or at least parity with us. We did not believe Hitler either, when he openly announced his intentions.

As long as we have power surpassing that of a potential enemy, he is dangerous to us only if we refuse to take him at his word.

I am reminded of what happened shortly before the Civil War broke out. The Democratic Party—Mr. Rhodes, I am sorry you missed the tribute I just paid to Congress and this committee, sir.

Mr. RHODES. I am sorry. If I had known you were going to do that, I would have been here ten minutes early.

Admiral RICKOVER. I am talking about the universal desire for peace and, in this connection, I would like to recount what happened in Congress shortly before the Civil War broke out.

Mr. SIKES. He keeps referring to a war that I am not familiar with.

Mr. RHODES. That is the one you call the "War Between The States".

Admiral RICKOVER. Yes, sir, it is also referred to as the "War Between The States".

Mr. SIKES. That is the one I am most familiar with. There are some people down my way who insist that it was the "War of Northern Aggression".

Admiral RICKOVER. The "War of Northern Aggression"? Well, I suppose some also consider it as the "War of Southern Aggression". I would like to talk about an instance that happened just before the Civil War, the "War Between the States" or, as the esteemed member from Florida calls it, the "War of Northern Aggression."

Mr. DAVIS. We have always referred to it as the "Late Rebellion" up in Wisconsin.

ABOLITIONIST BUDGET CUTS CAUSE LOSS OF MERRIMACK

Admiral RICKOVER. The instance I am referring to occurred in the House of Representatives in the fateful year 1860. The Congress and the entire nation were in a highly divisive state with many factions clamoring to put forth their views on slavery and secession. Few were taking a reasoned and dispassionate view of the issues, issues that vitally needed to be weighed rationally. Caught up in the emotional state where each man considered his views reasonable and right, the House had been brought to a standstill attempting to elect a Speaker. Usually a routine task every two years, it was not routine in 1860 and it nearly caused the legislative process of our Government to cease altogether.

One of the few but fateful actions that was accomplished at this time was the passage of the naval appropriations bill. This bill had deleted from it a million dollars earmarked for ship overhauls and repairs. One of the leading proponents of this cut was Congressman Owen Lovejoy, of Illinois, who was a staunch abolitionist. His zeal to abolish slavery also carried over to the military. In commenting on the reduction he said: "I am tired of appropriating money for the army and navy when, absolutely, they are of no use whatever." He also said: "I want to strike a blow at this whole naval expenditure and let the navy go out of existence." Recognize that this was an abolitionist saying this at a time when secession was a clear possibility. You would think military preparedness would be of greater concern to a Free-Soil Republican.

With the loss of this \$1 million in naval expenditures, the U.S.S. MERRIMACK was not overhauled at Norfolk Naval Shipyard and thus was unable to be taken north when the war began. As a result, the Confederates or the Southerners, whichever you want to call them, seized the ship and converted it into the ironclad VIRGINIA. You are all familiar with the feat of this one vessel in almost single-handedly breaking the Union naval blockade.

I think there is much we can learn from this example. Congressman Lovejoy, as an abolitionist, represented a small minority who were largely responsible for bringing about the war with their agitation. They did not represent anywhere near the unanimous views of the country. I believe that in the last test of voting strength they polled only 2 percent of the ballot. Yet, with the country in a state of crisis, with the South amassing military equipment and threatening to leave the Union, this man pursued peace by reducing defense expenditures. Certainly history proved that his action did not contribute to peace. I wanted to point this out because there is much similarity between this event of over one hundred years ago and what is being proposed today. Many people would like to have the world a certain way but they either do not understand or refuse to accept the fact that it is not as they wish it to be.

As I testified to the Senate Appropriations Subcommittee on Public Works the other day, sir, the only person who could have achieved world peace died some 1900 years ago. He was not successful and I know of no one alive today who can do it.

PEACE REQUIRES COMMITMENT BY ALL PARTIES

The solution is not just to disarm unilaterally. Armaments themselves do not bring war. It is the attitude of the people and the attitude of the national leadership. If peace is possible, it must come through a

commitment to peace by all parties, not through the single action of just one. I know this issue is constantly before the members of Congress but, after all, the primary duty of any legislature is to preserve the country. That duty comes foremost.

I have another historical reference which I think relates in an important way to some of the current attitudes in the country. The other day I came across a state constitution written about the time of the Revolution. I found in it, and in the constitutions of a number of states, they not only talked about the *rights* of their citizens but they also talked about their *duties*. I would like to read what one typical state constitution had to say because I think that statement of responsibility is not generally recognized.

The typical one is from Delaware and it said, "Every member of society has a right to be protected in the enjoyment of life, liberty and property and therefore is bound to contribute his proportion towards the expense of that protection and yield his personal service when necessary or equivalent thereto."

The identical phrase is included in the early Vermont, Massachusetts and New Hampshire State Constitutions. Certainly, that was a very healthy thing because today we hear almost entirely of citizen rights but very little of citizen responsibilities. I think this is not generally known. Certainly, in today's national climate it appears to be ignored.

Mr. SIKES. Very interesting, Admiral. Very apropos.

Mr. ANDREWS. There are some who say that they have a right, as you mention, to welfare payments.

Admiral RICKOVER. The Constitution did not say they had a right to welfare payments.

Mr. ANDREWS. But there are people today who say they have certain rights to welfare payments.

Admiral RICKOVER. There are people today who say not only do they have rights to welfare and to other things—but that these must be instantly granted.

Mr. ANDREWS. And increased.

NUCLEAR POWERED SHIPS

Admiral RICKOVER. With your permission, sir, I will proceed.

Since inception of the Naval Nuclear Propulsion Program, the Department of the Navy and the Atomic Energy Commission have invested approximately \$15.8 billion in the design, development, and construction of naval nuclear powered ships. Through Fiscal Year 1970 the Navy has invested \$13.4 billion in the construction of nuclear powered submarines and surface ships including replacement cores and components and an additional \$0.5 billion for research and development. The AEC has provided \$1.5 billion in research and development funds and an additional \$0.4 billion for capital investment and facilities.

Congress has authorized 109 nuclear powered submarines, including 41 of the POLARIS missile-launching type, as well as nine nuclear powered surface ships. We now have 87 nuclear submarines in operation, including the 41 POLARIS missile-launching type. By June of this year we expect to have a total of 88 nuclear powered submarines in operation. Congress has also authorized one nuclear powered deep submergence submarine, the NR-1, which is now in operation. Four nuclear powered surface ships—the aircraft carrier, ENTERPRISE,

the guided-missile cruiser, LONG BEACH, and the guided-missile frigates, BAINBRIDGE and TRUXTUN—are also in operation. Construction is proceeding on the two-reactor aircraft carrier, NIMITZ, CVAN 68, and the keel of the two-reactor aircraft carrier, DWIGHT D. EISENHOWER, CVAN 69, will be laid soon. Also under construction are the nuclear powered guided missile frigates, CALIFORNIA and the DLGN 37.

The Navy's fleet of POLARIS missile-launching submarines completed its 750th patrol in February of this year. Since the initial POLARIS patrol by the GEORGE WASHINGTON, SSBN 598, in November 1960, these 41 nuclear submarines have completed more than 45,000 days of submerged patrol duty or 123 years under water. The cumulative distance steamed by all of our nuclear powered ships to date is over 15 million miles, including over 1¼ million miles steamed by the four nuclear powered surface ships.

All four nuclear powered surface ships have seen action in the Far East. The ENTERPRISE is presently in overhaul, having steamed over 500,000 miles since commissioning, including four deployments off Vietnam. The frigate BAINBRIDGE is about to depart for her fourth Far East deployment. The LONG BEACH has just completed her third deployment to Southeast Asia and the TRUXTUN has completed two full deployments since joining the fleet in June 1967.

A high level of effort will continue in fiscal year 1971 on development of a two-reactor nuclear propulsion plant for the Navy's second nuclear powered aircraft carrier, the NIMITZ, and her sistership the EISENHOWER. Each has two reactors which are the highest-powered reactors under development in the Naval program. Each of these reactors produces about as much power as four of the ENTERPRISE reactors. With these reactor plants, the NIMITZ and EISENHOWER will be able to operate for about 13 years without refueling. In addition to the NIMITZ and EISENHOWER, the Department of Defense budget for FY 1971 contains \$152 million for advanced procurement of nuclear propulsion plant components for a third new aircraft carrier of this class, the CVAN 70. If Congress approves starting work on CVAN 70, the Navy will request the remaining funds for her in FY 1972. This will make a total of three nuclear aircraft carriers in addition to the now operating ENTERPRISE.

The nuclear frigate building program is finally moving ahead. The keel laying of the CALIFORNIA, the DLGN 36, took place on January 23. The keel for the CALIFORNIA's sistership, the DLGN 37, will be laid later this year.

We are also proceeding with procurement of long lead time items for the first five nuclear frigates of the new design DLGN 38 class—formerly called DXG. Construction of the DLGN 38 was authorized for FY 1970 and the ship contract will be awarded in a few months. Authorization for construction of the second ship of the class, DLGN 39, is requested in the President's FY 1971 budget as well as additional advance procurement funds for the third and fourth ships of this class. In the FY 1970 budget Congress authorized and appropriated funds for procurement of long lead time items for the fifth ship of the DLGN 38 class. Up to that time the Department of Defense had agreed only to build a total of four ships of this class. The funds for the long lead time items for the fifth ship have now been released

to the Navy and procurement is proceeding. The Navy plans a continuing program of nuclear frigate construction in the years ahead.

Development is also continuing on submarine reactor programs. Of particular significance is the development of improved longer life cores for present reactor designs and the development of improved high performance reactors for application to submarines capable of higher operating speeds than present attack submarines. Important work is underway to advance nuclear propulsion technology and to further improve mechanical, metallurgical and chemical properties of nuclear fuel and core structural materials.

The urgent need to build higher-performance nuclear powered submarines, utilizing the most advanced technology available, is obvious in light of Soviet accomplishments in the nuclear submarine field. Recent world events have made clear the need for maintaining a strong naval nuclear propulsion development program. The advanced development work being carried out in the Naval Propulsion Reactors program is essential for the strong and aggressive nuclear submarine and surface ship programs necessary to maintain the national security of the U.S.

SOVIET SUBMARINE THREAT

Now, I would like to give you the latest information on the Soviet submarine threat. Last year I gave this committee a rather ominous assessment of what the Soviets were doing in this field. Unfortunately, I must report that the situation has worsened to the point where we are on the verge of losing our numerical superiority in nuclear submarines.

The total Soviet submarine strength as of March 1, 1969 was officially estimated at about 375. One year later the official estimate has been reduced to about 355, including both nuclear and conventional powered submarines. This reduction, however, does not come about because of reduced effort on the part of the Russians, but indicates a more determined effort on their part to replace their older diesel submarines with nuclear powered submarines.

During the past year the Soviets deleted a substantial number of units from their submarine force. During the same time, they completed and put into operation about 12 nuclear powered submarines.

Six to eight of these are of the YANKEE class which is the Soviet version of our POLARIS nuclear powered submarine. ——— submarine is a JULIET class diesel unit designed to fire four SS-N-3 cruise missiles. This is the surface-to-surface antiship missile having a range of about 400 miles.

The Soviet submarine force is presently composed of 240 attack submarines, about 20 of which are nuclear powered. The Soviets have 65 cruise missile firing submarines of which 35 are nuclear powered. They also have about 50 ballistic missile firing submarines, some 20 of which are nuclear powered. They have a total of about 75 nuclear powered submarines and together with about 280 diesels they have a grand total of 355 submarines.

None of the Soviet submarines are of pre-World War II construction and all are believed to be less than 16 years old. 45 of the total 146 U.S. submarines are of pre-World War II construction and almost half of the U.S. submarine fleet is over 16 years old. Eight of the early U.S. nuclear submarines are no longer considered as "first line"

ships. A measure of just how modern a submarine fleet the Soviets possess is the fact that they have given away or scrapped diesel submarines of more recent vintage than U.S. units still operating in our fleet. As I just mentioned, during the past year they scrapped or sent to reserve status a substantial number of diesel submarines. To date they have given away outright ——— diesel submarines to ——— countries. They have also provided components, plans and assistance for the production of ——— additional diesel units.

Mr. SIKES. Did you say that the Soviets have no subs that are more than 16 years old?

Admiral RICKOVER. That is correct, sir.

Mr. SIKES. I haven't heard that statement before.

NEW SOVIET SUBMARINE DESIGNS

Admiral RICKOVER. Last year in my testimony I discussed the large number of new design submarines being introduced by the Soviets. In 1968 they introduced several new designs and in early 1969 they put out at least ——— other new design. They have made large scale commitments to submarine design and construction. They recognize that to move ahead in submarine design one must have different types of submarines to test new concepts. ———.

You can be assured that the basic design talent used to produce the recent new submarine designs is now being used to refine design techniques and to work on the next generation of submarine designs. In the next several years we shall probably see a whole new series of designs. This does not mean, however, that the Soviets will build only a few of their current classes while waiting for future designs to be completed. As has always been the case with the Soviets, they commit a substantial construction program to new designs. This enables them to maintain their numerical superiority over us as well as keep their fleet modern. This is costly but it gives them a broad base from which to gain experience. Such an approach is indicative of just how high a priority the Soviets have assigned to their submarine program.

DELAY IN U.S. HIGH SPEED SUBMARINE

I might say parenthetically here something about the difference between the way they conduct all of their military business compared to the way we do ours. It took me over four years of fighting in the Pentagon to get our new class of High Speed, SSN 688 class nuclear submarines included in the shipbuilding program. Today the Navy still does not have final permission to build even the first ship in the SSN 688 class. Before a final decision is made by the Defense Department, there will be even more reviews. It takes longer to fight for approval of a project than it takes to develop and build it. That is why our ships are obsolescent before we get them to sea.

Six years ago, when I began to push for the U.S. to build submarines with higher speeds, the Soviets began to design several high speed classes. Today, when we still do not have firm approval to proceed, the Russians have many new high speed units operating and under construction. They do not have to fight the administrative "lag time" we are faced with and this gives them a tremendous military advantage. Their entire submarine fleet has a high speed capability. ——— I will get into the details of this situation in a moment.

When I testified to your subcommittee on public works the other day, Mr. Evins said to me, "Admiral, we have depended on you to keep us ahead. How come you have let us down?"

I replied, "I have been pointing this thing out to the Defense Department and to Congressional committees for quite a few years, but I can't get any action."

In the Defense Department you have literally thousand of people any one of whom can hold up a project. You have those who will predict we don't need submarines, and refuse to take action, those who will endlessly keep asking for additional studies or those who will get involved with the technical aspects of designing ships. We are in a state of static flux. It has been stated that when the conflict between the Defense and Navy Departments was at its peak, 20 percent of the top echelon in each department were engaged in throwing memo grenades at each other.

I am confident that the Soviets don't have to contend with such a situation. Otherwise, they could not have developed a submarine program as great in scope and variety as the one they now have.—

Mr. WYMAN. Why are their submarines——than ours?

Admiral RICKOVER. Because they build new types of submarines, test them out in quantity and then proceed without delay to new designs based on what they have learned. We have put to sea only one new type of submarine in ten years. In the last two years they have put out at least six. Yet today we can't even get final permission to build one High Speed SSN 688 class submarine, even though we have contracts for long lead propulsion plant components for the first eight ships.

Mr. WYMAN. Are they——.

Admiral RICKOVER. I am getting a little ahead of myself, but this is an important subject which I would like to discuss in some detail.

I must make it clear at the outset that to my knowledge——.

There are many considerations which must be taken into account in the design of a submarine. The final design must be a compromise of competing characteristics such as speed, noise-quieting, reliability, ruggedness, habitability, etc. If you emphasize one particular characteristic, you may find the others degraded.

——. The real problem in our country is that we have to fight for years to get approval for a new submarine.

Mr. SIKES. Admiral, in order to try to develop this in an orderly way, I think it would be well if the questions are withheld until you have completed your assessment of the submarines. You have talked about this to the committee in prior years. We would now like to have you bring us fully up to date on the submarine threat posed by the Soviets, and our efforts in response to that threat.

This committee is vitally interested in this situation. We have taken steps from time to time to improve on the programs submitted to us by the Department of Defense and the Bureau of the Budget, as you know.

Would you bring us up to date?

UNITED STATES AND SOVIET SUBMARINES COMPARED

Admiral RICKOVER. Yes, sir. Let me give you their status again. The Soviet submarine force is presently composed of 240 attack submarines, about 20 of which are nuclear powered. They have 65

cruise missile firing submarines of which 35 are nuclear powered. They also have about 50 ballistic missile firing submarines, some 20 of which are nuclear powered. They have a total of about 75 nuclear powered submarines and together with about 280 diesels, they have a grand total of 355 submarines.

In the U.S. a total of 109 SSN's and SSBN's have been authorized and funded by the Defense Department through FY 1970. Of these, 46 SSN's and 41 SSBN's are operational through February 1970. 19 SSN's are presently under construction, or contracts have been let, which includes all SSN's through the FY 1969 program. Contracts are still to be let on the 3 FY 1970 SSN's which are of the new High Speed class.

LOSS OF U.S. NUMERICAL LEAD IN NUCLEAR SUBMARINES

One of the factors that has traditionally been used to justify the U.S. having a submarine force substantially smaller than the Soviets is the numerical lead we have always enjoyed in nuclear powered submarines. For years it appeared we had a comfortable lead. Several years ago, however, the Russians embarked on a large scale nuclear submarine construction program with the intent of achieving pre-eminence in this field.

They began by applying tremendous resources to the expansion and modernization of the submarine construction yards. They now have the largest and most modern submarine yards in the world and possess at least _____ times the nuclear submarine construction capacity that we have in the U.S. As late as 1966, the Russians had only two new construction yards building nuclear submarines; today they have 4 and possibly 5 with this capability. Even though this tremendous submarine building capacity has not been fully utilized in the last year, it has produced some 12 submarines, _____. The lead in nuclear submarines we have so long enjoyed has just about disappeared.

Last year the United States had a net advantage of some _____ more nuclear submarines than the Russians. Today this advantage has shrunk to possibly _____. Last year I stated that the Soviets would be up to us in nuclear submarines by the end of 1970. One the basis of what they are doing it appears I was too conservative.

Mr. SIKES. In the calendar year 1970?

Admiral RICKOVER. Yes, sir.

By the end of 1974, the year the U.S. should put into operation the last submarine currently authorized, the total U.S. nuclear submarine inventory will be 109 SSN's and SSBN's. It is estimated _____ that the Soviets will at that time have from _____ nuclear submarines. In four short years the Soviets will have an advantage of anywhere from _____ nuclear submarines.

Intelligence now credits the Soviets with a nuclear submarine production capability of 20 units a year. This is based on working only a single shift basis. It is estimated that a "crash" program working three shifts a day would allow _____ nuclear submarines to be produced annually. This rate could be achieved rapidly since facility expansion would not be required. At present while the POSEIDON conversions are going on, the maximum U.S. capacity to build nuclear submarines is about _____ per year. Upon completion of these conversions in about 1977, the best we could do is _____ nuclear sub-

marines a year. The Soviet shipyard at Severodvinsk, the one that is producing the new POLARIS type submarine, has the capability by itself to ———

NEW SOVIET SUBMARINE DESIGNS

At this point I think it might be worthwhile to review briefly what we know about the current new Soviet designs. It is important for the committee to be aware of just how large and diversified a submarine program they have.

In early 1969 we saw the introduction of ——— new Soviet submarine ———.

The last new 1968 design is a fleet ballistic missile submarine called the YANKEE class. It looks very much like our LAFAYETTE POLARIS class and is capable of firing 16 submerged-launched ballistic missiles. ———. The missiles these submarines fire are thought to be the SS-N-6 and have about a ——— nautical mile range. The large Soviet yard at Severodvinsk and the ——— yard at ——— are constructing this class. So far they have worked only on a ———, which gives them a production capability of about 12 units a year. To date, several of these units are in operation. However, ——— additional units are being built and it is clear that the Soviets are giving top priority to construction of this class. Intelligence people last year estimated the Soviets would build ——— of this class by ———. Now it is estimated that this number will be reached by 1973 or 1974. This submarine is capable of making at least ———.

In addition to their efforts with the ——— new classes of submarines the Soviets have ———. The missile we believe they are testing is designated the SAWFLY and is believed to be a submerged-launched, ——— foot ballistic missile with a range of ——— miles. The size of this missile means it will probably not now fit in the present design YANKEE class. It may be that the Soviets intend to backfit this missile into their current classes of ballistic missile submarines or, ———. It would not be surprising, for example, to see the Soviets stop building the present design YANKEE class in 1970 or 1971 and start building a new design SSBN capable of taking the SAWFLY missile. ———.

SOVIETS POSSESS GLOBAL MOBILITY

Soviet submarines continue to operate out-of-area for longer periods and at greater distances than ever before. They have now established mobile task forces where the submarines are repaired from tenders—sea-going bases—while they are underway, thus vastly expanding their operating capability. These sea-going tenders can remain at sea for 6 months. One of these tenders accompanied by one small support ship has supported 4 submarines for 6 months, servicing and repairing them while they are underway. The Russians have ——— large submarine tenders and ——— small ones which can service the large tenders. This is a new and unique contribution to the art of submarine warfare.

With this system, a submarine from the Russian Northern Fleet can leave its home base, run a patrol in the Atlantic, steam to Cape Verde off the Coast of Africa, get refurbished and have a rest period alongside the tender, run a patrol in the Mediterranean, return to the tender for upkeep and rest, run another patrol in the Atlantic, and

then go home. This shows great imagination and ability in operating submarines.

With these assets they can make up a task force, move into the Indian Ocean, the South Atlantic, the South Pacific, or into any other area they wish.

They can transfer submarines from the Pacific to the Atlantic through the northern route in the summer. They can transfer submarines from their Northern Fleet around South America to Vladivostok. They can move nuclear submarines from the Northern Fleet under the ice cap, then under the North Pole, and finally through the Bering Strait to the Pacific. ———. Two FOXTROT class conventional submarines operated with Soviet surface units in the Gulf of Mexico during July 1969 and entered Havana for a brief port visit timed for the Castro regime anniversary (26 July) celebration. ———.

In general during 1969, the Soviet submarine force operated approximately ——— more days out-of-area than during 1968. This was done in spite of deployments by fewer submarines and support vessels, and marks a significant improvement in the efficiency of their units and operating techniques.

The Soviet submarine force just like the entire Soviet Navy has become capable of sustained open ocean operations and is being used in support of foreign policy in various areas of the world. The Soviet Union recently announced large-scale naval maneuvers including over 200 ships in both the Atlantic and Pacific oceans and nine adjoining seas, including the Mediterranean. During this exercise we estimated that some ——— Soviet nuclear submarines were operating away from their home bases. ———. Admiral Gorshkov, the Commander in Chief of the Soviet Navy, made the following comments regarding these maneuvers: "For the first time in history of both Soviet and world naval art, the forces disposed on different oceans will operate on a single concept." He also said: "Whereas until quite recently some areas of the world's oceans were considered restricted areas in which the navies of imperialist powers ruled supreme and where our ships seldom ventured, now there are no such areas." By their own remarks and their impressive actions the Soviets are demonstrating their resolve to be the pre-eminent naval power.

I previously discussed ——— and I want to be sure that the committee understands that the Soviets have made impressive advances in ———.

SOVIET SUBMARINES HAVE HIGH SPEED CAPABILITY

———. Let me give you some details on this. Several years ago we estimated that the original Soviet nuclear attack submarines, the NOVEMBER class, could do as much as ——— knots, and last year we estimated that the new classes, ——— could go up to ———. The new Soviet ballistic missile nuclear powered submarine, the YANKEE class, is now estimated to be capable of making at least ——— knots. These figures are important in that they show that the entire Soviet nuclear submarine fleet has a high speed capability. ———. The latest U.S. class of nuclear attack submarines, the STURGEON class, has a maximum underwater speed of about ——— knots and ———. These comparisons show just how vital it is for the U.S. to proceed with the new class of High Speed submarines. This is the only sub-

marine design which the Navy can build in the early 1970's to counter the high speed Soviet threat. And the earliest the first of these can be in operation is ———.

U.S. SUBMARINE PROGRAM

Mr. MAHON. Admiral, are you saying that under your leadership in the field of submarines that you and your associates, along with the Congress and the Defense Department, have not done an adequate job here?

Admiral RICKOVER. Yes, sir. That is exactly what I am saying. I mentioned this before and it is worth repeating because it is very important. I have pointed out that over six years ago I recognized that the Soviets could develop faster submarines and that we should take action to ———. In 1964 I began to work on the propulsion plant for a new class of high speed submarines. It took me four years to get the Navy and the Defense Department to put this submarine in the ship-building program and that action came only after we became aware that we did not have a speed advantage.

I accept much of the fault because I wasn't intelligent enough or persuasive enough in the Defense Department or in Congress to make this point. I also know you have many other demands on the money you appropriate and that it is very difficult for you to go beyond what the administration requests. I understand that constitutional issue, sir.

There have been times when Congress has appropriated more money than the Administration asked for and the money was not spent. The basic fault lies with me because something is wrong if I can not get the idea across. However, also at fault is the Defense Department. They had access to the same information I had, but they refused to act.

This is true particularly of the Defense Department which was led for about six years by the system analysts and the cost-effectiveness people. They studied the situation and concluded that the United States should stop building submarines. They also concluded we should not build nuclear powered frigates or nuclear powered carriers. It took almost superhuman effort by Mendel Rivers and his committee to get anything into the bill that the Defense Department did not want. You will recall that in the Fiscal Year 1968 Authorization Bill the Congress provided funds for two nuclear powered frigates and stated that the money was to be spent only for this purpose unless the President advised Congress that it was not in the national interest. The Secretary of Defense was against the second frigate and was able to get the President to say that it was not in the national interest to build it.

TESTIMONY OF NAVAL WITNESSES

Mr. SIKES. Admiral, as you know, you are one of the very few people who come before congressional committees and express serious concern about the submarine threat. If you read the testimony of the average Navy witness, you will feel we must be in pretty good shape. At least they don't seem to be seriously concerned about this gap between the Russian submarine capability and ours.

I am concerned and I have tried to bring out this matter with questioning.

Why is it we can not get more on the record from the average Navy witness who talks about submarines?

Admiral RICKOVER. The Navy is constituted almost like Congress. It has groups who are interested in almost every aspect of Navy operations. It is very rare that you will get a Naval officer or Navy Department representative who will come and testify to any congressional committee except either as he is instructed to testify or to further the particular branch of the Navy he is connected with. I think that in Admiral Moorer, our present Chief of Naval Operations, the country has been very fortunate in having a man who has tried to look at the military situation from more than one side, but the average Naval officer who comes here does not. If he is an aviator, he will push for aircraft carriers and airplanes. I am sure the committee understands what I am talking about. I have always tried as hard as I could not to take a parochial attitude about the requirements of the Navy. This is why I support aircraft carriers and frigates. You will all remember that I started off supporting only submarines. I still believe that the Navy should go underwater as much as possible—even more than we are today. But there are some essential things that the aircraft carriers and frigates can do that submarines simply cannot do. To have an effective Navy we need all of these types of ships. That is why I do not support submarines alone.

NAVY EMPHASIS ON CARRIERS

Mr. MAHON. Of course, you advocate submarines and you have been advocating submarines for years. You are in the submarine business, but is it true that the Navy generally is carrier-oriented and it is evident to the Navy only a certain amount of money will be available from year to year and therefore has it been the disposition of top Navy people to push harder for the Navy Air arm than for other Navy objectives?

Admiral RICKOVER. I think the answer to your question is yes. Over the last 15 or 20 years the aviation people in the Navy have been far more influential within the Navy and without than the submarine people. There is no question about it. This can best be seen by the senior position afforded to the naval air program in the hierarchy of the Navy Department. Naval air is headed up by the Deputy Chief of Naval Operations for Air who is a Vice Admiral reporting directly to the Chief of Naval Operations. Compare this to the case for submarines where the responsibility for this program rests with a Rear Admiral in the third level of command. There is no one officer reporting directly to the Chief of Naval Operations who is responsible for our vital submarine program.

NEED FOR DEPUTY CHIEF OF NAVAL OPERATIONS FOR SUBMARINES

You might recall I discussed this problem in last year's testimony. For several years now I have recommended that the position of the senior officer for submarines be upgraded to Deputy Chief of Naval Operations for Submarines. This would give the submarine program a director similar in rank and authority to the air and antisubmarine programs. Certainly if we are to begin to match what the Soviets are doing in submarines, we need to give our submarine program a stronger voice in the Navy. However, so far my suggestion has been ignored.

Mr. MAHON. Why hasn't that recommendation been acted on?

Admiral RICKOVER. I do not know, sir. But I think it gets back to the matter of competition between the aviators and the submariners. The aviators are in the ascendency in the Navy Department and I believe they are not interested in a more influential submarine voice. But I will repeat that I think Admiral Moorer has done an excellent job of avoiding parochialism. Considering the lack of funds which are available, he has to try to satisfy all elements.

I think one of the faults in the system is that the people in the military are not permitted to appear before members of Congress and tell you what they really think. They generally act under instructions. The absence of free criticism in the Navy has resulted in the dying out of true professionalism.

I have, upon two or three occasions, been instructed by my superiors to testify in a certain way. In each case when I appeared before the particular congressional committee, I announced at the beginning that I was giving testimony under instruction. At that point, the chairman of the committee would make a few rather pointed comments and then ask me to testify as I believed. I have never yet testified to any committee of Congress except in the way that I believe.

This hasn't happened recently because every time I was given instructions on how to testify, I told my superiors I was going to announce this to the committee. I think they finally realized I was not going to be a spokesman for anyone but myself.

LOSS OF U.S. LEADERSHIP IN SUBMARINES

Mr. MAHON. Admiral, you are a very forceful man and a very highly respected man. You have a national and international reputation. You have a lot of friends in and out of Congress. Could you have spearheaded a program that would have prevented our losing to the Soviet Union in the field of submarines?

Admiral RICKOVER. Yes, sir. I tried to in every way I know how. As I pointed out, six years ago when I began to advocate the High Speed submarine that at this late date is finally being authorized, ——— I foresaw that they would be improving their speeds and that the U.S. should take action to ensure that our future designs maintained a speed advantage. You don't have to be very brilliant to make such a prediction. It was obvious that they would go in this direction, yet I could not get anyone interested. Even after we started ——— no one would listen. I don't want to pat myself on the back and say, "I told you so," because it is too tragic an issue for that. I just should have been more persuasive.

Mr. MAHON. Why didn't our Defense Department do something about this? How do you explain that? We are as intelligent as the Soviet Union. Why have they done this and we have not done it?

Admiral RICKOVER. I think one of the major reasons is that many of the people, military and civilian, who are placed into the Defense Department simply do not have the technical ability to properly judge these issues. They have reputations for being good managers and they assume that means they can manage anything. It is as if the office sanctifies the holder; that all that is needed to do the job properly is the right paper work system supported by an elaborate decisionmaking process. What is forgotten by those who set up these elaborate decision-making processes is that the military is an operational organization

with specific technical tasks to perform, and that these require a high degree of specialized technical knowledge and experience. They are tasks which are not amenable to purely management techniques. They lie in two different areas of human competence and are not interchangeable. The end is being overwhelmed by the means. The means are becoming of greater relevance to the affairs of the Defense Department than the goals they are supposed to serve.

There has been a strong tendency to downgrade if not ignore military expertise. That particularly went on during the six to seven-year administration of a recent Secretary of Defense.

Mr. ANDREWS. Don't call any names now.

Admiral RICKOVER. No, sir, I am deliberately being obtuse. This issue is far more important than anything else I can say today.

Mr. MAHON. You still haven't adequately explained to me why the Soviet Union had the wisdom to proceed ——— and we lagged behind.

Admiral RICKOVER. I was getting at that when you were away for a moment, sir.

It is not really a matter of wisdom. Clearly, the sensible thing to do for any military weapon is to develop one which will out-perform those of your potential enemy. Take tactical aircraft for example. It only makes sense that you try to design your best fighter to be faster, more maneuverable, etc. than those used by the enemy. If you can make a weapon with superior characteristics then you have a substantial military edge.

The same thing is true in submarines. If you have a submarine that is faster, quieter, more maneuverable than that of your adversary, you have a much better chance of destroying him before he destroys you. It does not take wisdom to realize this. It is the direction one takes in all weapons development. ———.

In 1968 we began to see operation of the new Soviet classes of nuclear submarines. Evidence gathered to date shows that the new ——— classes can go about ——— knots and that their YANKEE POLARIS-type submarine can go at least ——— knots and possibly as much as ——— knots. We have confirmed that the older NOVEMBER class can make ——— knots.

In 1964 I recognized that the Soviets would be moving toward high speed submarines and that we should be looking to a new class of U.S. nuclear submarines that would have high speed while also incorporating ——— and other advanced military features. I have been pushing this for 6 years and am still encountering opposition—even after the facts ——— have been recorded.

It took several years to get the intelligence community to acknowledge that ——— I believe in large measure it was a case of people wishing the real situation to be something it was not. As long as the reports said ——— there was no cause for concern. It did not seem to matter that the real truth was that they could ———. As for the Defense Department analysts, they were too busy with planning fanciful wars to give heed to such mundane matters as Russian submarine ——— or to believe that anyone who was not trained in systems analysis or in cost effectiveness—and this includes Members of Congress as well as myself—had the mental ability to understand such matters. Congress' function was to supply the money; I, like an old post-hack, galled by my harness, was to shift from one task to another till I dropped dead somewhere between two post-stations. And who listens to a horse?

U.S. NAVY HAS NO DESIGN CAPABILITY

Another factor which greatly contributes to the situation we are in is the almost complete lack of submarine design capability in the Navy. This is an important matter which I would like to discuss in some detail.

It has been obvious to me for some time that submarine design is going the way of practically all design in the Navy Department.

I was on duty in the Bureau of Ships during most of World War II. I was responsible for all design, procurement, installation, and maintenance of electrical equipment in the Navy. The Navy was not so complex an organization that its technical problems could not be handled well by the in-house capability we then had. We were given adequate authority and we did our job.

But with the vast increase in technology since World War II the Navy has gone downhill technically. This has been accentuated by new management procedures which have been instituted. It is estimated that every 18 months the need for computers in this country doubles, and my own experience in nuclear power development shows that this is pretty well the case. I would say that in the last few years organization and administration requirements have also doubled every 18 months, so that the few of us who are left who can do technical work find ourselves engaged more and more in procedural and administrative matters, not technical matters.

Practically all my testimony today, outside of the first few minutes, has been concerned with other than technical matters. I have been talking about administration, about management, about getting the people in authority to understand the importance of moving ahead with submarine development. I have not been talking about my job. I have been talking about tasks other people should be doing. I think this is significant.

In the fifteen years following World War II—before the previous civilian administration of the Defense Department took over—several changes took place which had a major effect on the Navy's capability to do technical work.

The rate of development of technology increased rapidly, which required a much greater technical competence to carry out a successful weapons development than previously had been required.

At the same time the technical competence of the Bureau of Ships was declining rapidly due to the failure on the part of the Engineering Duty Officer leadership to recognize the steps that had to be taken to build and maintain a strong cadre of competent officers and civilians to control the increasing technical business of the Bureau of Ships. Further, many of the better qualified civilian Bureau of Ships employees were attracted to other pursuits.

The net result is that for the job to be done there was greater technical competence in the Bureau of Ships in 1939 at the outbreak of World War II than there is today.

The Navy failed to establish an organization staffed with relatively permanent technically qualified officers or civilians to think through and establish the technical requirements of the Navy. The Ships Characteristics Board, which nominally determined the Navy's ships characteristics, was established as a voting forum composed of short term transient officers who bore no responsibility for carrying out the work programs or for their success.

Contractors involved in the naval shipbuilding industry, devoid of responsibility for insuring satisfactory operation of the product, motivated by profit, and in general free from tight control by a technically strong Government agency, developed inefficient, expensive, and poor quality hardware.

ADMINISTRATIVE DIFFICULTIES

At the time the previous administration of the Defense Department took over, there was a dire need to reform the Navy's method of handling development, procurement, and maintenance of warships. The basic need was to establish groups of technically competent people with clear authority and responsibility for executing the various Navy programs, similar to the strong technical management approach that had prevailed in the nuclear propulsion program and later in the POLARIS program. There was also a need for strong technical groups in the shipyards and industrial contractor organizations to carry out the technical development work under close technical direction from the Government headquarters organization. These needs were not met.

The Navy, obviously, had not done a very good job, so when the previous Secretary of Defense took office, the Navy was, very properly investigated and much was found to be in need of improvement. But, in my opinion, some of the changes made are in the wrong direction. There are now so many administrative organizations that the few remaining technical people are spending nearly all of their time on administration.

I remember having a discussion with the Chief of the Navy's Bureau of Aeronautics in 1948. He told me that his Bureau had representatives on 203 committees. I asked him why all this was necessary, and did not attendance at all the meetings keep his technical people from doing technical work. He replied: "I have to do this in order to avoid being in the position of having decisions made in my area of responsibility without my knowing about them and without consideration of the relevant technical factors." This is the very same reason I must devote so much of my own time and that of my leading technical people to administration—to the detriment of our technical work I firmly believe that many of our technical failures can be attributed to overadministration and lack of attention to technical detail.

DEFENSE DEPARTMENT HAS MORE CHECKERS THAN DOERS

Over the years more and more new Department of Defense organizations were formed to evaluate the performance of the services. They in turn recruited from the small number of technical people in the existing organizations. This resulted in a reduction in the technical capabilities of those organizations responsible for doing the work. So now we have more checkers than we have doers. And the checkers have the authority to ask all sorts of questions of the doers with the result that no work gets done.

It appears that the present policy is that if you want to get a technical job done, you go to industry and they will do the job. The Government people are supposed to "manage"—not do the technical work. Offhand, this sounds like a good idea, but I can offer an answer to

that. What I say will be backed up by our contractors: We would not have had one successful nuclear propulsion plant if we had accepted what industry offered us. Industry itself will admit that. Therefore, it is absolutely essential, in my opinion, to have a strong in-house technical capability at headquarters if the job is to get done properly and at reasonable cost.

This was the lesson the Germans learned in World War II. Their army and their navy had been accustomed to depending on industry, and did not have much in-house capability. On the other hand, their air force, being new, had built a strong in-house capability, and could thus judge and oversee their industry. That is why the Germans in World War II took the lead in aircraft design.

The same is true today. It is my opinion that the lead we have in nuclear propulsion is because we have a strong in-house capability.

There is an essential difference between the nontechnically trained or experienced administrator and the engineer. Administration is necessarily based on the law of averages. The pure administrator learns how people will act "on the average" and he makes decisions accordingly. Therefore, he can be promoted to ever higher positions and continue to use the "law of averages". The engineer on the other hand cannot be governed by statistical averages. Each decision he makes is concerned with a specific item. That item must work. It isn't enough that such items will work "on the average". Therefore, the effective engineer, if he is to do an adequate job, is condemned to being concerned with details. A single apparently minor detail can wreck a major project even though all the other parts work. This constant attention to detail is a prerequisite—the hallmark—of an engineer worth his salt. The engineer's product either works or it is "junk".

The whole tendency of the Navy is to do away with technical expertise, and to have the remaining people become "managers". This came forcefully to my attention when I started looking in detail into the nonpropulsion areas of the nuclear submarine research vehicle, the NR-1, design. I found that the Naval Ship Systems Command did not have even one person assigned full time to the nonpropulsion aspects of the NR-1, regardless of the fact that the NR-1 was to be the deepest diving nuclear submarine ever built. The people who know about submarine design had been assigned to administrative organizations.

I wrote a rather forceful letter, and I got two people assigned responsibility for the nonpropulsion aspects of the submarine. I also discovered that had I allowed the NR-1 nonpropulsion plant design to continue the way it was proceeding, the submarine would probably not be operational today. This further illustrated that considerable improvement was needed both in industry and in the Navy in submarine design capability.

MODERN TECHNOLOGY REQUIRES HIGHER STANDARDS

For man to take full advantage of modern technology he must raise his standards of knowledge and performance. The high temperatures, pressures, and speeds needed today require the use of materials close to their ultimate limits.

Therefore, utmost care must be taken in design, manufacture, installation, and operation. No carelessness can be tolerated anywhere in the entire chain—or the result may prove disastrous. Every person involved must constantly bear in mind that he personally is responsible for the entire ultimate result. Advertisements and statements claiming that the particular organization has an effective so-called zero defects program should be recognized for what they are—"motherhood" and propaganda statements. These are the sort of words administrators, who have little or no technical competence, or experience, love to use. They tend to delude the workers and the customers as well as those who make the claims. In this way they detract from meaningful effort. It should be a mandatory requirement that every administrator be made responsible for personally directing in detail one of his projects. This would immediately show him the human and material pitfalls involved. He would not be able to sit at a desk issuing orders and reading reports without understanding their real meaning. The only way to obtain the kind of quality that is essential today is for each person involved to understand what he is doing, and to recognize the consequences of failure. He must dedicate himself to do the job as if his own life depended on it and not rely on self-serving clichés.

Once, at a meeting with engineers from industry, they recommended to me that I ease up on a certain requirement. I asked them: "If you knew that your son had to serve in that submarine would you design it my way or your way?" This question shook them. They agreed at once that my way was the right way.

REDUCTION OF TECHNICAL PROFICIENCY

However, the way things are going, the technical proficiency of the Navy is being reduced every day. If this trend continues, we can not hope to match what the Russians are doing. I can not imagine the Russians handling their submarine design the way we are handling ours. I can't conceive it. That is the point I wish to make to this committee.

The senior officials in the Navy today are not adequately experienced in the technical aspects of weapons development and do not fully understand the approaches which must be used to successfully develop and operate modern weapons. At the same time, they are expected to make detailed decisions which affect all the basic elements of weapons development. They are expected to explain and justify these decisions to higher authority in the Office of the Secretary of Defense. This has led to the technical people spending an increasing proportion of their time preparing justifications, and consequently having less and less time to devote to technical work.

You are looking here at some of the best technical people in the United States on propulsion plant and submarine design. If we can put in five percent of our time on technical work, we are lucky. Almost all of our efforts are devoted to fighting managers and making studies. Let me give you an analogy of what is happening.

You have a farmer who owns a small farm and a barn and a few animals. In order to be successful as a farmer and to take care of his family the farmer needs to work his land and tend to his animals. On the first day of the week just as he begins to plow his field someone sets fire to his house. He has to stop plowing and put out the fire. On

the second day just as he begins work someone sets fire to his barn, and once again he has to stop working to put out the fire. On the next two days he has to fight off rustlers who are trying to steal his cattle and on the last day of the week he has to go into town to try and get money to operate for one more week.

Well, this goes on week after week and pretty soon no seeds have been planted, no crops have been harvested, no animals cared for and his family has no food. In short order this farmer is out of business. This is the situation we have in the Defense Department today and I am deeply concerned that it has already reached the point where our national defense is being adversely affected. Only a drastic reduction in these useless overhead people will suffice.

The cost-analysts in the Defense Department are highly influential in the decisionmaking process. Any service recommendation which is to gain DOD support must be presented in a form which meets the criteria established by them. These analysts generally do not have technical expertise. They rely almost entirely on the concept that only those things should be approved which can numerically be shown to be "cost-effective", where "cost" is generally confined to the very narrow scope of dollars, with particularly heavy emphasis on initial investment dollars.

All manner of people have the authority—and use it—to make us stop our work, to question us, to make us prepare studies and justifications, until the point is reached where we have no time to do our own, our proper work. Seldom do any of our superiors remember that they also have the duty and obligation to help their subordinates. Instead, their subordinates appear to exist as lumps of clay to be worked on. A decision is a responsible one when the man or group that makes it has to answer for it to those who are directly or indirectly affected by it.

Senior naval officials and the analysts in DOD often, in my opinion, display a naive attitude toward the capabilities and motives of U.S. industry to produce suitable weapons systems without the technical direction and badgering of strong military technical groups. To carry out successfully the development and operation of a new warship requires a technically strong centralized permanent group within the Government, a group that has the authority and responsibility for executing the task. Only a Government group can provide independent customer appraisal of the development work necessary to insure a satisfactory product. Appraisal from the viewpoint of customer responsibility for satisfactory operation and maintenance of the product is necessary to insure satisfactory product performance and the feedback of lessons learned into the design.

INDUSTRY NOT RESPONSIBLE FOR SUCCESSFUL DEFENSE PRODUCT

Industry does not—and can not properly—have the responsibility for insuring a successful defense product. Industry is basically motivated by profit. It must, to continue to exist. Therefore, industry can not be counted upon to do the job without close Government technical control. There is ample experience showing that industry does not want tight specifications and tight inspection.

The lack of a strong submarine design capability in the United States is one of the most important problems facing the Navy today, yet it doesn't even appear to be recognized. The investigation following the loss of the THRESHER should have made this abundantly clear

to everyone. Yet it didn't. All that was done was to spend several hundred million dollars in the "SUBSAFE" program to patch up the mistakes of the submarine designers in going to deeper, faster submarines than they were used to. Nothing was done to establish a technically stronger submarine design organization to meet ever-increasing new requirements. If anything, submarine design is less controlled technically today than it was when the THRESHER was designed. The status of the nonpropulsion areas of NR-1 is ample evidence of the state of U.S. submarine design capabilities.

Senior naval officials, not being experienced in technological development, and faced with having to justify all their recommendations in detail on a dollar cost basis, have turned to reorganizing the Navy Department in a direction that will produce for them the paperwork studies necessary to gain approval of service programs.

The technical bureaus who formerly made most of the technical decisions and whose chiefs formerly reported directly to the Secretary of the Navy, now find themselves with two bureaucracies interposed between themselves and the councils of the Secretary of the Navy. Both of these bureaucracies—the Office of the Chief of Naval Material and the Office of the Chief of Naval Operations—are headed by unrestricted line officers and are staffed with high-level administrative groups who delegate their responsibilities for executing technical work. Further, many of those few remaining highly competent technical personnel in the officer and civilian groups of the former technical bureaus are being transferred from the Bureau technical work to administrative work in the Office of the Chief of Naval Material and the Office of the Chief of Naval Operations—while responsibility for executing the work remains in the Systems Commands which have replaced the Bureaus.

TECHNICAL EXPERTS REDUCED IN STATUS

Thus, today, the technical people in the Systems Commands have been reduced in status, have been deprived of most of their authority, have had many of their best people ordered or attracted away from them to handle senior administrative positions, have had their voice in the councils of the decisionmakers muted, but have been left with the responsibility for executing the technical work.

Too many layers of administrative groups are being established between the technical people responsible for carrying out the work programs and the people making the decisions on what work is to be done. The technical groups, both officer and civilian, are being allowed to atrophy without replacement.

The present trend must be turned around without delay or the Navy's technical programs will suffer. It takes many years to develop a technical capability; it takes but a short time to liquidate it. If the Navy is to succeed in meeting its technical commitments it must run its business so as to attract and retain technical talent both in its own organization and in the organization of its prime contractors.

It is essential to the future welfare of the Navy that top Navy and Department of Defense management attention be placed on increasing the stature and authority of the technical groups charged with the responsibility of executing the Navy's technical work. If the current assumption that this work can be successfully turned over to

industry is allowed to endure, the Navy will soon find itself exhausting its energy and finances to patch up the unsuccessful technical products it will receive from a loosely controlled industry.

Most senior Defense Department and Navy officials have never believed in the need for the in-house technical capability that I so strongly advocate. Although they occasionally paid lip-service to my recommendations, they thought that they themselves were "practical men" and that my ideas were a gimmick. It is the "practical" officials by their "practical" policies, who have produced the administrative and technological mess we have today.

UNNECESSARY DELAYS

Too much time is required between inception of an idea for a new submarine or other weapons development and authorization to proceed with construction. Under current administrative rules, any project over \$100 million lifetime cost—which includes all new design submarines—must endure years of studies and an examination at many levels of the Department of Defense before a decision is finally made as to whether or not the project should be built. The consequences of such a policy in terms of delaying introduction of new submarine designs to the operating forces, discouraging introduction of new ideas at low levels, and potential large accrued cost during the drawn out "study" phases are obvious.

DELAYS COST MONEY

In the Pentagon you have in effect a large group of accountants whose job is to delay everything for month and month on end with the idea of "saving" money that has already been appropriated by Congress. You do save money at that moment because you don't spend it, but it is like delaying repairs to a house. You may save money today but by the time you get through it costs you more money. This is particularly true in light of the escalating costs of buying military hardware. Our propulsion plant equipment costs are escalating about 10 to 15 percent a year.

We are constantly being accused of being inefficient and not running our jobs properly. The very people who make these glib statements are the ones who by their actions drastically increase the cost of ships and delay them.

We are the ones who are going into the Navy yards and other facilities and finding out where the inefficiency is. No one else does this. So the whole thing falls on a few people.

Now, you might ask: Why do we do it?

For several reasons. First, we have to get as much for our money as possible. In light of this Administration's tight budget policy and the cost of the Vietnam War, our Armed Forces have less buying power today than they had two years ago. The \$70 billion allocated to defense for the fiscal year 1971 is the smallest percentage of our Gross National Product in 20 years—just 7.2 percent. Defense expenditures in the upcoming fiscal year will represent only 37 percent of our total Federal budget outlays, compared to 44 percent in fiscal year 1969. There is little enough money available to build a proper Navy and we must get maximum return on our investment.

Second, you get poorer quality work when you permit inefficiency to go on in industry and in the shipyards.

Third, it is our responsibility to see that tax funds are used effectively. We cannot hope to maintain support of Congress and of the American people for our programs if their money is not spent wisely.

These are the day-to-day considerations we face in doing our technical work. I can assure you it is a difficult task to improve the efficiency of this highly complex technical work. It requires painstaking attention to detail and a thorough knowledge of just what is going on at every level in industry. The cost-accountants in the Department of Defense, for all their commitment to saving money, do not concern themselves with such "trivia". They pursue their obscure calculations in a small world bounded by the walls of the Pentagon, sealed off from the reality outside which does not always respond to their formulas and so has to be ignored in arriving at "correct" solutions to the "problems" of Government. The difference between what these accountants do and what the members of this committee must do is the difference between fiction and fact. When a tornado strikes one of your cities, you have to go back there and deal with it. You deal with the real thing. This is exactly what your chairman, Mr. Mahon, did yesterday. A tornado damaged a city in his district. He immediately flew to his district, surveyed the situation, and arranged for help. Then last night he flew back to Washington, arrived quite late but was still able to attend this hearing. I am afraid he does not possess the attributes of a systems analyst.

On the other hand, if a tornado hit the Pentagon, I am sure the first thing that would happen would be for a committee to start studying tornadoes. Their initial request would be for an in-depth collection of data on what happens to a building when a tornado strikes.

I am certain that if Rip Van Winkle fell asleep today, when he awoke 20 years later, he would find 20 volumes of a Defense Department study entitled, "How to Cure Insomnia."

What do you do when you have large numbers of relatively intelligent people who do not know what they are doing? Their only choice is to deal in paper work. There is one solution. Immediately and drastically reduce the amount of money you have for the headquarters staff.

I have told this committee previously how I would go about solving this problem.

REDUCTION OF ADMINISTRATIVE PERSONNEL

Mr. MAHON. I think it might be well to repeat it.

Admiral RICKOVER. On a given Monday morning I would close off the fourth floor of the Pentagon and allow in only enough people to fill the first three floors. The next Monday I would have the third floor roped off and permit only those who fill the first two floors to retain their jobs. That would be a good start. Although this may sound funny, I think the idea has merit. You have all kinds of people in the Defense Department who are making work for the very few who are engaged in and capable of doing the work. In fact, I am surprised that in light of this situation we are doing as well as we are militarily. But, the Russians have already surpassed us in a number of important military areas and we will continue to fall further behind if something is not done. Technology will not stand still. If we are not

alert, we will find ourselves so far behind that it will take many years to catch up. The penalty for technological surprise in today's world can be enormous. We simply cannot afford to be surprised.

NAVAL MATERIEL COMMAND

Let me give you a specific example of how we are being overmanaged to death.

The Navy's organization for handling shipbuilding has been reorganized on the pattern of the Air Force Material Command. This example will illustrate how this change has reduced the Navy's technical control of shipbuilding and at the same time has increased the management systems involved to reach a decision in shipbuilding matters.

Until about 4 years ago, shipbuilding was handled by the Bureau of Ships. The Chief of the Bureau of Ships then reported directly to the Secretary of the Navy. At that time I was Assistant Chief of the Bureau of Ships for Nuclear Propulsion. The Chief of the Bureau of Ships then had a great deal of authority in shipbuilding matters. He could go directly to the Secretary of the Navy for approval of shipbuilding matters. Because of the unique responsibilities and requirements for nuclear safety that are involved in nuclear propulsion I was also given direct access to the Secretary of the Navy for nuclear propulsion matters.

In those days there were also three other technical Bureaus in the Navy Shore Establishment, their Chiefs all reporting directly to the Secretary of the Navy.

About 4 years ago, the Secretary of Defense changed administration of the Navy's technical work to coincide with the Air Force organizational method; he established the Naval Material Command to be similar to the Air Force Material Command. Also at that time the four technical bureaus were eliminated and their functions assumed by six new "Systems Commands". A large majority of the technical people in the Bureau of Ships—other than in my organization—were put into the new Naval Ship Engineering Center, a field activity of the Naval Ship Systems Command. The management of shipbuilding was made the responsibility of the Naval Ship Systems Command of which I was made Deputy Commander for Nuclear Propulsion. This reorganization, which created a new large bureaucracy—the Office of the Chief of Naval Material—added another huge layer of "management" between the technical people who have to get into the engineering details to get the job done, and the people in charge whose approval must be obtained to proceed. The many people in the Office of the Chief of Naval Material can and do ask questions and disapprove proceeding, and their endorsement must be obtained to get a recommendation forwarded to higher authority in the chain of command. But there is no one that I can find in the Naval Material Command who has the authority to approve proceeding with programs.

Subsequently, the organization was again changed to have the Chief of Naval Material report to the Chief of Naval Operations rather than reporting directly to the Secretary of the Navy. That change was supposed to keep the Chief of Naval Operations in the responsible chain of command. However, the net effect this had on the technical people was to add still another layer of management to fight proposals

through before you could get approval. To understand the overwhelming effect of these changes you must realize that every officer and civilian in the offices of the Chief of Naval Material and Chief of Naval Operations regards himself as senior to the Commanders of the Systems Commands and appears to feel free to introduce his thoughts, questions, and desires into any matter coming through his office. Of course, in my own case, because of my special Atomic Energy Commission responsibilities with regard to nuclear safety, I have been able to retain direct access to the Secretary of the Navy, the Chief of Naval Operations, and the Chief of Naval Material. But the other engineering personnel in the Naval Ship Systems Command do not have that authority. I can assure you that the technical contribution of some 600 people working for the Chief of Naval Material could be fully covered in one small paragraph of a "Readers Digest" article. For the good they do it wouldn't matter if the entire organization was moved to Kamchatka.

When the previous Department of Defense officials took office, they started checking the status of programs they had inherited and, as everyone is now aware; found much evidence of "bad management" and started various investigations. Unfortunately, it is almost never the conclusion of such investigations that there are unnecessary people and unnecessary management systems in the management chain. So once again the new solution to these problems has been to create about a dozen so-called "Project Managers" in the Naval Ship Systems Command; these are supposed to be responsible for the various ship-building programs.

There are now five layers of management where there were two before. Yet, I am still supposed to get the same job done.

About 15 years ago the Atomic Energy Commission was building a large diffusion plant and construction was falling way behind. The AEC fired the contractor and hired a new one. The first thing the new contractor did was to fire 5,000 people because of the gross inefficiency. Immediately the work started to improve.

I realize that Congress has limitations on changing the structure of the Administration. You can't go around and tell Mr. Laird to fire Joe Smith and John Jones, but you do have the power of the purse. You can put a strict limitation on the amount of money that can be spent for people in the Pentagon. That you can do. You can require that only a given amount of the appropriated funds be spent for headquarters personnel, and even the Executive Branch can't get completely around that.

Mr. SIKES. But, Admiral, if that were done, while you would limit the total number of individuals, you would not necessarily improve the quality of the work because those removed from the payroll would be determined by Civil Service regulations, if they are civilians, and under other regulations if they are in uniform. They wouldn't necessarily fire the incompetent people.

Admiral RICKOVER. That is correct, sir. However, most of the people I am referring to do not fall in that category. They are mostly appointees or study groups.

There is another aspect to this situation that should be considered. Many of the people who leave the Pentagon go to other jobs that are directly or indirectly paid for by the Pentagon. For example, many of the people who work for these "think" groups are former Defense Department or military people. They switched jobs but in effect are

still on the Defense Department payrolls. These people don't appear on the rolls as headquarters staff but they might as well. The taxpayers pay their salaries.

I can only give you my views based on the facts as I see them. I respect the Congress and the wisdom of this committee. But I will say this: You are responsible for appropriating all of the money spent by the Defense Department and if you don't take steps to see that the money is spent properly for the purpose intended, you will be just as guilty as the rest of us in seeing this country's strength go down.

REDUCTION IN HEADQUARTERS PERSONNEL

Mr. MAHON. Admiral, you mentioned headquarters personnel. The committee last year made some modest cuts in headquarters personnel in the various services. I will have the staff check my remarks, but my information is that the services other than the Navy took these cuts—although not with any degree of happiness, but the Navy, as I understand it, is back now asking for reprogramming to get those personnel back, saying they just can't do it without them.

Admiral RICKOVER. Do you mean in headquarters, sir?

Mr. MAHON. Yes.

Admiral RICKOVER. Of course, I do not know what you have reference to in this case, but as an overall statement, I could not agree with increasing headquarters personnel in the Navy. I wouldn't go along with the idea that overall the Navy needs more headquarters people.

If you turned the Pentagon over to me today, I could easily eliminate a thousand people. I would simply cut out management functions. We have all kinds of officers doing State Department work and making a mess of it. There are all sorts of people getting paid to do things other people are supposed to be doing.

There is another system which could speed the Pentagon decision-making process. I think it would also be acceptable to the social scientists. I recommended it to your Public Works Subcommittee the other day. Classify the Pentagon people as A, B, C. A does the work, B and C are given offices without secretaries, messengers, desks, rugs, telephones, typewriters, or water pitchers. They do get scratch pads on which to write letters to each other in long hand. The letters would be dropped in dummy mail boxes and there would be no collection. The only writing instrument they could use would be crayons—if they had a sharp object they might harm themselves. Also they could show up for work and leave any time they desired, and vacations would be unlimited. Their checks would be mailed to their homes.

(Laughter)

Why do you think this is so funny? It may sound like a fantastic idea, but the Federal Government has become, among other things, an agency to shelter many of the otherwise unemployable. Although this may be a laudable and humane idea it nevertheless has no place in our defense establishment. It would even be worthwhile and save money to retire a lot of the officers in the Defense Department at double pay. There are a considerable number of officers who have been twice passed over by the promotion boards yet they are still hanging around because the law requires them to stay on. In effect you have someone who has twice been declared not worthy of promotion, yet is still assigned to a top position. Necessarily, the work generally suffers and he has a bad effect on the younger people.

One of the worst things I see happening in our Navy is the influence of incompetent senior officers on young officers.

From what I have seen over many years, it is my opinion that a Commanding Officer of a ship who is incompetent will wreck every young officer on that ship. I have seen it happen time and again. The young officers will develop the same attitudes and habits as the Commanding Officer, and potentially good officers will be lost to the Navy. As a specific suggestion, I would recommend that you urge the military to release immediately any officer that has been passed over twice. Have them relieved right then and there rather than create jobs for them where they will not help our defense efforts. I make that as a specific recommendation.

CONTRACT STUDY GROUPS

Mr. SIKES. Admiral, what is your opinion of the value of the contract organizations that provide studies and provide ideas, the organizations that have built up for service to the Department of Defense and are operated by contract?

Admiral RICKOVER. Do you want an exact figure from me? Zero.

This leads me to another suggestion which I think you agree with. I would put into the appropriation bill a provision that the Defense Department cannot spend money to support these study-oriented contract organizations. That is the only way you will stop it. As long as you do not do this, there will be an ever increasing outlay of Government funds to these "think tanks." And these groups generally get high pay for their "thoughts." Why don't you set a maximum of say \$5,000 per year for *all* of their work. I would cut them out.

Mr. ANDREWS. In many cases, Admiral, these people we are talking about are retired service officers.

Admiral RICKOVER. Oh, yes. I did not mean a \$5,000 salary. I meant a maximum of \$5,000 which the Defense Department would be allowed to pay for *all* of its "think tanks."

TOO FREQUENT ASSIGNMENT CHANGES

Mr. MINSHALL. A moment ago you mentioned project managers. It has been a concern of mine throughout the years that the project managers, or project officers, may not always be fully qualified. They are put on a job on a certain development program that proceeds to a procurement program, and they keep changing the managers from year to year. That seems silly to me.

Admiral RICKOVER. It is amazing how military officers are smarter than anyone else. They can be appointed to any job in the world for a 1- or 2-year period and be very successful. You certainly don't find such ability in any other walk of life.

Mr. MINSHALL. In order to be promoted in the Army they must command a division and in the Navy they must command a ship and so forth and so on.

Admiral RICKOVER. I have talked about this problem many times. I have pointed out that you can not run a modern military organization, particularly the Navy, with one or two year changes in duties. It is absolutely impossible.

The Navy has never faced up to how to handle the development, application, and operation of new weapons systems in this highly tech-

nological age. Most of the steps taken have been in the wrong direction, such as increased attention on "management" systems and decreased attention on the technical aspects. The Navy's primary purpose is to protect the sea lanes of the world so that United States foreign policy can be implemented. To do this the Navy operates ships and aircraft. These are highly complex machines requiring technically trained and experienced personnel. There is no way in the world you can take a man and put him on a job for two years and expect him to run it effectively.

We continue to cycle people rapidly through many jobs, line officers, limited duty officers and civilian managers alike. We must assign our key management personnel in the Navy with a greater degree of permanence.

To remain inept by frequent emigration from one's job, to leave one's mistakes and one's past, to start out for a new life—this is what the short tour of duty does. One can be carefree forever. True responsibility for one's actions is not ever comprehended. Life becomes a series of disconnected events to which one is a paid observer.

There can be no continuing responsibility and stability in a Naval organization when each naval officer is reshuffled every 2 to 3 years or less.

OFFICER CAREER MANAGEMENT

Mr. MINSHALL. Why do they keep rotating them? Whose responsibility is it?

Admiral RICKOVER. As you know, 4 out of 5 officers stay in the Navy only 3 or 4 years and then get out. Three out of four sailors leave the Navy at the end of their first enlistment. The officers and enlisted men who do stay are not always the better ones. The officers who do stay in the Navy for a career are rotated frequently from one job to another. These changes may not always be the officer's personal desire, but reflect conformance with promotion selection policies where a variety of experience—actually exposure to a job—is more important than developing expertise. The Navy trains every line officer to become the Chief of Naval Operations and every engineering duty officer to become Commander of the Naval Ship Systems Command. Each officer's career is laid out on a basis that he will have exactly the same opportunity as every other officer in the Navy.

Now, there is a turnover problem in the Congress but you manage your business in a different way. With each new session you don't change members of committees throughout Congress. The man who gets to the head of a subcommittee or a full committee has worked his way up to it and knows what he is doing in that particular field. The Navy doesn't do that. They use a system that forces an officer to become a jack-of-all-trades but master of none. It is going to lead this country to disaster, and I mean that, if we keep it up.

We must stop acting as though the Navy existed for its officers. The officers should exist for the Navy.

Mr. MINSHALL. What do you recommend then? Changing the promotion system, or what?

Admiral RICKOVER. I am not a cataclysmic pre-determinist who believes that there has to be an inevitable convulsion in our Navy from which, after tribulation, a new millennial Navy will be born. It would be nice if we could do away with the old and make a com-

pletely new beginning, but life is not that way. However, specific actions can be taken which will improve this aspect of the Navy's personnel situation however. For example, I have succeeded in getting the Chief of Naval Personnel to establish a minimum tour length of three years for commanding officers of our nuclear submarines. The first tour of duty for a young officer on a nuclear ship has also been increased under normal circumstances to three years. This allows him to qualify in submarines and to qualify as engineering officer of the watch. He also gains enough experience for his commanding officer to decide if he should be recommended for examination as an engineer officer. Those officers recommended are given a seven hour written examination and three oral examinations by my staff. The officer must pass all these tests to become an engineer officer of a nuclear ship.

From now, on all the executive officers and commanding officers will have qualified as engineer officer in this way. We are developing capable and experienced young officers this way. The engineer officer of a nuclear submarine has about 5 years of commissioned service when assigned to a three year tour. If he can run that engineering job well, he can do any job in the Navy.

As these young men are assigned ashore, or rotate out of submarine duty, they are picked for the better jobs in the Navy. They have developed technically and in leadership ability, and have learned how to work hard in the Navy's nuclear programs. That is why they are so sought after for important assignments elsewhere.

This is what can be accomplished when one sticks to the real purpose of his job. If these young men were rotated every year or so, they could not do the job; they wouldn't learn how to do it, and they wouldn't learn the meaning or responsibility. You should realize that under today's rules frequent job rotation is a pre-requisite for advancement in the Navy. That was one of the objections to my being promoted to Rear Admiral, sir. It was said I wasn't "broad" enough, that I didn't have enough different duties, "brownie-points", to my credit. Of course, what wasn't considered was that if I had had all these different duties, I couldn't have done the job.

Mr. LEIGHTON. They also said you never would be able to get along with Congress.

Admiral RICKOVER. That was most important. They said that with my personality and my looks I could not get along with Congress. In order to get along with Congress, you had to be good-looking and you had to be able to talk the way you were instructed to talk. I must confess that by Navy rules I don't know what it takes to get along with Congress.

Mr. MINSHALL. You have done very well with Congress throughout the years.

Admiral RICKOVER. If I have done well, it is because I have been myself and I have been as forthright as I know how.

U.S. SUBMARINE PROGRAM

Mr. SIKES. I don't know anyone Congress appreciates more highly, or whose opinions are more sought than yours.

Now, if we could get back to the subject of the submarine situation, I want to know where we stand on our own programs.

You have touched on this but, by comparison with the Russians,

tell us where are we and what our progress has been on the high speed submarine program, etc.?

Admiral RICKOVER. Last year, Congress authorized the first three High Speed submarines and provided advance procurement funds for five more.

This year the Administration's proposed budget requests authorization of three more High Speed submarines. Chairman Rivers and his committee increased that number to four. I strongly urge that you fully appropriate for these four.

We are not going to have any of these high speed submarines until ———. The Russians, meanwhile, have considerable numbers of submarines ——— and they are building them at a much higher rate than we.

Mr. ANDREWS. Will the four you are talking about that have been authorized be high speed submarines?

Admiral RICKOVER. Four have been authorized by the House. They have not yet been authorized by the Senate.

Mr. ANDREWS. Will those four submarines be High Speed submarines?

Admiral RICKOVER. Yes, sir.

Mr. ANDREWS. How will the speed of these four we are talking about compare with the speed of the Russian submarines?

Admiral RICKOVER. My opinion today is that they will be ———.

Mr. ANDREWS. ———.

Admiral RICKOVER. I said ———. The reason I put it this way is that I am always urged to make commitments that are greater than may be possible. I have always avoided that. I have given modest estimates and I have generally produced better than I said I would. I would rather leave it that way, but I can assure this committee that if these submarines perform, even on the modest basis I have promised, they will ———. Mind you, I proposed a submarine with this speed six years ago.

Mr. SIKES. Do we have one in the program now?

Admiral RICKOVER. No, sir. We have three presently authorized.

Last year the budget proposed by the Department of Defense included the first two ships of the SSN 688 class. Recognizing the urgent need for these ships, Congress added a third 688 class submarine to the program in fiscal year 1970, even though the Defense Department had not requested the ship. It was one of the very few items in that budget that was increased. Regardless of the stringency of the budget, Congress increased the submarine program.

As I indicated earlier, this year the Administration's proposed budget included three High Speed submarines, but Chairman Rivers and his committee increased that to four.

Mr. SIKES. There are three in the budget and you are asking for four ———

Admiral RICKOVER. The President's budget was for three. Mr. Rivers' committee changed that to four.

Mr. SIKES. If four is good, why is not five or six better?

Admiral RICKOVER. If you went that far, the Administration would not build them. With the limited amount of funds allocated to Navy shipbuilding, the money would have to be taken away from other programs.

After this year, I would like to see a minimum of four or five submarines authorized every year.

Also in the budget this year is long lead time money for two more submarines that have not yet been authorized. Mr. Rivers and his committee recommended long lead time money for an additional submarine. I strongly urge your committee to support the long lead time funding. This will enable the Navy to support four High Speed submarines in the fiscal year 1972 program.

PRIORITY OF SUBMARINE PROGRAM

Mr. SIKES. Let me ask you this: Do you feel that the High Speed submarine program is receiving the high priority in the Government and in industry that it merits?

Admiral RICKOVER. No, sir, it is not. Over a year ago, in view of the serious situation we face relative to the Russians, I asked for what is known as a BRICKBAT priority for these submarines.

The BRICKBAT priority automatically makes a project eligible for the highest industrial rating. It must go to the President for final approval.

In January 1969, the then Assistant Secretary of the Navy recommended to the Assistant Secretary of Defense that BRICKBAT priority be approved for the entire SSN 688 class program. Later, when he became Assistant Secretary of Defense, he turned down his own Navy recommendation. Apparently the Russians had become nicer people by that time.

In March 1970, after more than a year of fooling around within the lower echelons of the Department of Defense, the Deputy Secretary of Defense finally recommended that the President approve BRICKBAT priority for only one ship, the lead ship SSN 688, and even then for only a part of that ship. Action is still pending on that recommendation.

I would hope that this committee would see fit, as an expression of committee opinion to recommend that this program be given the highest industrial priority. The High Speed submarines are urgently required, and I simply can't understand the reluctance to give this program the highest industrial priority.

There have already been delays of about a year in the scheduled ship delivery dates because of the lack of priority both in Government and in industry. We are playing a game with the accountants. There are all manner of accountants in the Department of Defense who have the power to stop us at any time in whatever we are doing. The time of many of our top technical people must be devoted to justifying and rejustifying requests for funds, even after Congress has authorized and appropriated the money. I don't think you know how bad it is. I am certain that neither Mr. Packard nor Mr. Laird want this, but it goes on just the same because the organization is too large to be controlled.

Mr. MAHON. Were you implying a while ago that after his advancement to high office, Mr. Shillito applied the stilleto to the program?

Mr. GREER. May I summarize the chronology of that request, sir?

About a year and a half ago, we went up through the Navy chain of command, through all the cognizant offices in the Navy, with the request for this industrial priority. At each level we explained the need for it, what it would do, how it would accelerate the program and im-

prove the ship deliveries by about a year. All through the Navy it got approved. Everyone said okay. Mr. Shillito, the then Assistant Secretary of the Navy, signed it out to the Assistant Secretary of Defense. It got to the Department of Defense and it was sent back to the Navy without approval. The Department of Defense said our justification was not sufficient and they didn't understand why we couldn't ask for help on each individual item in the submarine. We told them there weren't enough people in the Navy to handle the program on that basis, since there were thousands of items in the submarine. We started the request for BRICKBAT priority back up through the chain again with a repeat justification.

The second time the BRICKBAT priority request went up to the Department of Defense, Mr. Shillito had become the Assistant Secretary of Defense. He had approved it in the Navy but in his new job he would not agree with the request. It was finally brought to Mr. Packard's attention. He recommended to the President approval for the critical parts of the first ship only. Action is still pending, and of course the work we are now doing on the long lead time items which control the ship delivery do not have the BRICKBRAT priority.

Admiral RICKOVER. I am reminded of the old Scottish ballad: "I am wounded," Sir Anthony Barton cried, "but I am not slain." "I'll lie down and bleed a while, and rise and fight again."

PROGRAM MANAGEMENT

We have been talking about managers. I think I am a fairly reasonable manager. I have been responsible for our naval nuclear propulsion program since its inception and I think I am fairly knowledgeable in my field. Why then don't they let me run my program? I can't spend more money than you appropriate. All of my requests and my accomplishments are reviewed by this and other Congressional committees every year. Why don't they let me run my program and, if I do a poor job, fire me? That is the best kind of management you can have. Give the man who has had many years of experience, who has the confidence of Congress, who knows what he is doing, the opportunity to run his job. If he fails, replace him. That is true management. But that is not what you get with these two-year managers and the large numbers of accountants. I wish that this manner of operating were permitted in my program. Then at least I could have hopes for the rest of our defense effort. But you know as well as I do that all Defense Department programs are treated the same way mine is and all are experiencing severe problems. Many of these problems are the result of delay in decisionmaking, over-management, over-control and the large number of reports being required. All these prevent the technical people from running their property efficiently.

The role played by the line and staff managers in the Defense Department has deteriorated to one of delayers, debaters, investigators, coordinators, and vetoers. Notice that I left out the word doers. Industry is certainly not run this way. Nor is Congress. Nor is any other effective organization. Then why do we permit this in the military, which is the most exigent thing we have, and run it that way? It just doesn't make sense. It baffles me.

Repeatedly over the past twenty years there have been attempts to correct the malaise of the Defense Department by reorganizing it. These attempts have never been successful because there was no simul-

taneous reduction in the number of people. In fact, each reorganization resulted in an increase in the number of people. In other words, the changes only served to compound the evil. About all that actually got changed, in addition to the increase in "managers", was the telephone numbers. Experience has shown that the Defense Department tends to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.

Many think we must change the system before we can reduce the people, on the basis that all the people are needed to fulfill the requirements generated by the present system. They don't seem to understand that the present system is generated by the fact that there are so many people. If we reduced the number of people then the system itself would have to change.

LEGISLATIVE OVERSIGHT

I have talked about this situation for years. In my opinion, change will only come about if this committee, if Congress, uses its oversight function. You simply cannot take the position that because you are the Legislative Branch it is not your responsibility. The Constitution charges the Congress with the responsibility for our defense and I would remind you of what Edmund Burke said, that the oversight function of a legislature may be even more important than its legislative function.

The more I see how the Defense Department has been run the more I am convinced he was right. The basis for the type of government we have is, "no taxation without representation", and Congress has the right and the duty to see how the money is spent. Many believe that this right goes back to the British Parliament. This is not so. It goes back to the Spanish Cortes. About 100 years before the British Parliament asserted that right, it had been asserted in Spain and in other European countries.

This is where I think Congress falls down. As far as the money appropriated, it is difficult for you to greatly influence what the Administration asks for or spends. About 70 percent of the money you appropriate is already committed by law, and Congress has little authority over the ultimate use of these funds. Even when you appropriate money for a particular purpose, the Administration can decide not to spend it.

Therefore, the way for Congress to gain some measure of control is through your oversight function. This is what I have been advocating all these years to this committee; to exercise your oversight function. In the case of the Defense Department, it is desperately needed.

QUIET SUBMARINE PROGRAM

Mr. SIKES. Admiral, what is our situation insofar as noise level is concerned? I refer to the quiet-submarine concept. Are you satisfied with our progress there?

Admiral RICKOVER. I believe you are referring to the Turbine Electric Drive submarine, sir.

The Electric Boat Division of the General Dynamics Corporation has been under contract since March 1967 to design the Electric Drive submarine. The design is now complete. I expect they will complete in the next two months construction of a full scale wooden mock-up of the new design propulsion plant and to develop the machinery arrange-

ments. If any of you are near Groton, Connecticut, I would certainly like to have you see this mock-up.

The main propulsion equipment is on order from the General Electric Company. The preliminary design is complete. The detailed design is well under way. Long lead time material has been ordered and manufacture of some components has recently begun.

In December 1968 the Navy contracted with Electric Boat to initiate construction. Work started last summer on fabrication of the hull. You should know, however, that there may be some cost problems with this ship. You may recall that when Secretary of Defense Clifford approved proceeding with the Electric Drive submarine, he stated the cost was expected to be between 150 and 200 million. The present Navy approved budget is \$151.7 million. While the cost may cause the present budget to be exceeded, I expect the cost to remain within the range stated by Secretary Clifford.

There are two major problems which threaten to increase the cost of the Electric Drive submarine above the Navy's \$151.7 million budget. First, the Navy has received a proposal from the Electric Boat Division to definitize the letter contract for construction of the ship. The proposal exceeds the Navy's budget estimate by several million dollars. The Navy is quite concerned about these high costs and is making a concerted effort in negotiations currently in progress with Electric Boat to reduce them.

Second, a proposal for the manufacture of the main propulsion equipment has just been received from General Electric Company, the only supplier capable of designing and manufacturing this equipment. The proposal also exceeds the Navy's budget estimate by several million dollars. The Navy is currently analyzing the General Electric proposal in detail.

The Electric Drive submarine is being designed to be the quietest submarine ever built. The technology we develop for this ship will be very important to our future submarine designs. ——— it is essential that this project not be delayed. I hope that the committee will continue to support this project even if the cost increases. We have already spent well over \$30 million and this will be no value to us if the ship is stopped on the ways to save a few million dollars. This is particularly true when you consider how important this ship is to our national defense.

As I mentioned earlier, our present nuclear submarines are ———.

Mr. ADDABBO. Are we sacrificing ———?

Admiral RICKOVER. To a degree, one must. They are mutually exclusive. ———.

One of the things we are faced with is that as listening devices improve we must have quieter submarines if they are to remain undetected.

In order to detect a submarine, the equipment involved is relatively simple. You develop listening devices using rather straightforward scientific and engineering principles. But to quiet our submarines is a highly difficult and empirical task. You have to try out many things and it takes a long time to develop effective techniques. It is not just a matter of doing what is obvious, because the methods required to silence a submarine are not evident. They are empirical and require much development and testing.

SUBMARINE-LAUNCHED BALLISTIC MISSILES

Mr. SIKES. Admiral, the testimony this committee has received would indicate that we are still significantly ahead of the Russians in submarine missile development, with the POLARIS missiles and the POSEIDON now coming on. Do you concur in the estimation that the range of ———.

Admiral RICKOVER. The latest Russian POLARIS submarines, the YANKEE class, carry the SS-N-6 submerged launched ballistic missile that is estimated to have a range of ——— nautical miles. The A-2 missiles carried in 10 of our POLARIS submarines have a range of about 1700 miles while the A-3 version carried in the remaining 31 POLARIS submarines have a range of about 2500 miles. ———.

But as I mentioned earlier, the Russians are testing the ——— missile that is estimated to have a range of ——— miles. It is possible that they might backfit this missile into their present YANKEE class but, because of its size, it is more likely, I believe, that they will introduce a new class of submarines specifically designed to carry it. They are obviously very capable in this area and I would not underestimate their ability to match or exceed us in this field.

NUCLEAR AIRCRAFT CARRIERS

Mr. MAHON. Admiral, would you give us your views on why we need nuclear aircraft carriers? As you know, there has been some controversy over the new carrier in the Budget.

Admiral RICKOVER. Yes, sir. I will first describe the general war situation with which we are going to be faced.

The number of foreign bases we have has been drastically reduced. By July of this year it is estimated we will be down to only 50 overseas land air bases. I have here a list of these bases.

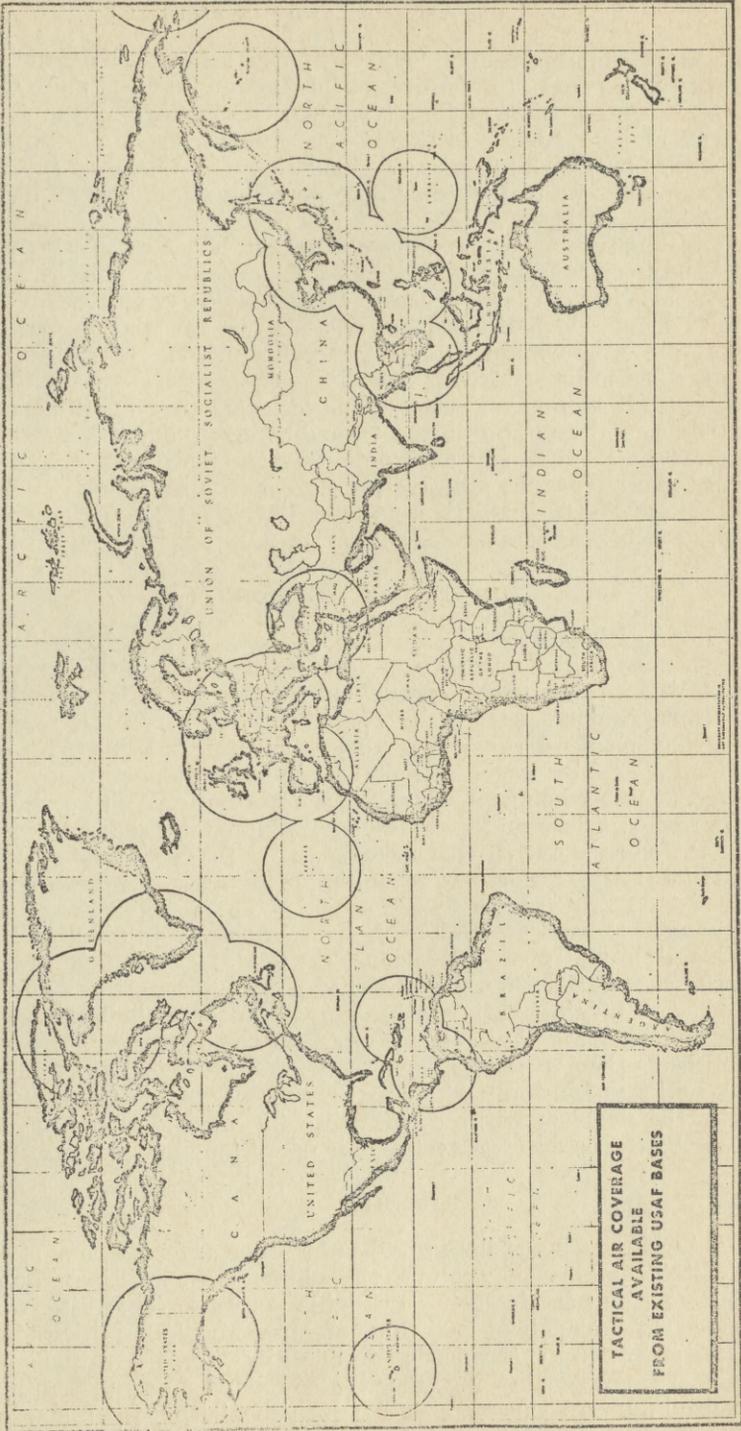
Overseas Air Force bases as of July 1970

(Not including U.S. Territories of Guam and Puerto Rico or overseas states of Hawaii or Alaska)

United Kingdom.....	6
Netherlands	1
Germany	8
Spain	1
Italy	1
Turkey	1
Azores	1
Greenland	2
Canada	1
Panama Canal Zone.....	2
Korea	5
Japan	3
Okinawa	2
Taiwan	1
Philippines	1
Vietnam	7
Thailand	7
Total	50

I also have copies of a map of the world which shows the areas which can be covered by tactical aircraft operating from these bases at a nominal range of 600 miles.

(The map referred to appears opposite this page.)



LOSS OF OVERSEAS LAND AIR BASES

If you conclude we cannot count on the bases in Thailand and Vietnam many years into the future, we lose about fourteen more. If we are concerned that those in Turkey, Japan, Spain, the Philippines, and Okinawa may not remain available to us a decade from now, we could end up with only about 28 overseas land air bases. This is a vast reduction from what we had. It should be borne in mind that we had 105 overseas land air bases in 1957.

We are continuing to experience a major reduction. For example, with Wheelus Air Base in Libya gone, we have no air base in Africa. We have also lost our last air base in Greece and have only one remaining in Turkey. That means we cannot depend on land air bases for support if a crisis should come up in the Eastern Mediterranean.

We are becoming a Fortress America from a tactical air standpoint. We are also becoming a Fortress America from the standpoint of the dissatisfaction developing in the United States to our involvement in foreign wars. There is constantly increasing pressure both at home and abroad to withdraw our military forces from foreign bases.

If that is to be the case, then we must have the type of Navy which will serve us best under these circumstances.

THE STRATEGIC SITUATION

Now, the general strategic situation, as I see it, is that Russia, which is a vast mass of land fronting on both oceans, with all the supplies it needs within its own borders or available in contiguous countries under their control, does not require the ability to control the seas to survive in time of war. They can move easily from one side to the other over land. The only way by which we can project our military might to protect our national interests is over the oceans. We also need imports of oil and raw materials for our industry in peace and in war. You will remember what that meant to us at the beginning of World War II when the Germans were sinking many tankers off the Atlantic Coast.

If you have overseas land air bases adequately supplied and protected and in the proper locations, there is not as much need for aircraft carriers because such bases can provide tactical air cover. But on what possible basis can we assume that even the bases we still retain will be available in time of war? Is the enemy going to stand by and leave them available for us to use? Is it logical to assume the enemy will attack us only where we are well prepared? Of course not. That is the problem with assuming we can depend solely on using land air bases for overseas tactical air operations in time of war.

BARE BASE KIT

The Air Force is developing what has been referred to as a Bare Base Kit. They hope they can use these kits to set up air bases quickly in foreign countries by using available runways. This kit requires about 6,000 people, about 7,000 tons of cargo and 1500 vehicles in the initial lift to supply the needs for one air wing, the equivalent of one aircraft carrier air wing. It will also require a daily re-supply of some 3200 tons of consumables. To furnish all this for a single air wing in a place like Vietnam would take more C-5As than we plan

to have in our entire inventory. That is the situation we face if we are to depend on quickly establishing additional overseas air bases in time of war.

In the Vietnam War we learned once again that 97 percent of our supplies had to be transported by ship. How can we provide protection of our sea lanes from air attack without carriers? What do the people who argue for the elimination of most, or nearly all of our carriers think? Do they think if our carriers are sunk or if we don't have any, that the enemy will then permit our convoys to go through—just because we don't have aircraft carriers? It will take a larger number of other types of ships such as cruisers or destroyers to protect our supply lines, if we don't have carriers.

WHY WE NEED CARRIERS

If we are to retain the capability to use our general purpose forces in military operations overseas, then we must have carriers to give them air protection enroute, to provide air protection when they arrive, and to provide air protection for the supplies needed to sustain them in combat. It is just not feasible to have a sufficient number of provisioned and protected land air bases to provide tactical air coverage in all the areas of the world where we may need tactical air power to protect our national interests. Carriers are needed for this purpose. Nuclear carriers are needed to provide increased mobility to our carrier striking forces. As we approach more and more the Fortress America concept the need for mobility of naval forces will continue to increase. This fact emphasizes the need for a continuing program of construction of nuclear-powered warships.

The new nuclear carriers are the most potent, least vulnerable surface warships in the history of naval power.

The U.S. withdrawal from overseas commitments, the reduction in overseas bases available to us, as well as the current consideration of reducing the number of active Navy ships and the Navy's carrier forces, all should make it clear that the resultant Navy must consist of the most modern, the most capable ships possible. We have no other rational choice if we are to survive in the world as it is rather than the world we might wish it to be.

ADVANTAGE OF NUCLEAR PROPULSION

The basic advantage nuclear power provides the carrier is the ability to steam at high speed without any concern for running short of propulsion fuel. The CVAN70 is expected to operate about 13 years before refueling is required. By contrast, oil-fired warships must be refueled every few days. This could mean the difference between winning or losing a battle; the difference between arriving in the combat area in time to swing the tide of battle in our favor or arriving after the battle may have been lost; the difference between a safe crossing to the battle area or falling prey to an enemy submarine while slowing to refuel at sea from a tanker.

LESSONS FROM WORLD WAR II

If the tankers needed by conventional warships fall prey to enemy submarines, then operations will be restricted. You remember Mr. Chairman, the great number of our tankers sunk in World War II by

German U-boats much slower and less capable than the submarines the Soviets and their allies have today. The United States lost over 130 tankers in the World War II Atlantic Campaign, mostly due to German submarines. By mid-1942 the situation had become desperate. So many tankers had been and were being sunk that the supply of military fuel to Europe and the Pacific was threatened. And keep in mind, Mr. Chairman, that the Germans started World War II with only 57 submarines in service. The Soviets today have some 355; at least 75 of which are nuclear powered.

Another factor that should be considered is the proven reliability of naval nuclear propulsion plants. In the 15 years since the *Nautilus* first went to sea our nuclear submarines and surface warships have steamed over 15 million miles. Our fleet of 41 POLARIS submarines have completed more than 750 patrols, none of which has ever been aborted because of a failure in the nuclear propulsion plant. On their patrols these submarines have completed more than 45,000 days submerged—a total of 123 years under water. We now have almost nine years operating experience with nuclear powered surface warships. The carrier *Enterprise* and the cruiser *Long Beach* first went to sea in 1961, the frigate *Bainbridge* in 1962 and the frigate *Truxtun* in 1967. These four ships have steamed over a million miles.

Of course, we wouldn't have a nuclear Navy at all if the Joint Committee on Atomic Energy, the House and Senate Armed Services and Appropriations Committees, and the Congress as a whole had not taken the initiative. I hope that you will continue to lead the way because, despite what has so far been accomplished, much more needs to be done.

Mr. MAHON. What is the relationship between the need for the third NIMITZ class carrier, the CVAN70, and the attack carrier force level?

JOINT CHIEFS OF STAFF POSITION ON CVAN70

Admiral RICKOVER. There is not much relation between these two issues. The CVAN70 is needed to continue modernization of the carrier force regardless of which of the various carrier force levels under consideration is chosen as the proper one for the last quarter of this century—the time when the CVAN70 will be in the fleet.

I am not qualified to judge how many carriers we should have. However, General Wheeler and I testified about three weeks ago to the Joint House-Senate Armed Services Subcommittee on the CVAN70 Aircraft Carrier. He made the point that both these issues had been thoroughly considered and that there was unanimous agreement among the Joint Chiefs of Staff—all of them—that we should build the third NIMITZ class carrier—even though there was a difference of opinion among them on the proper attack carrier force level.

The need for the CVAN70 is not an issue of the number of carriers we need. The issue is this: If you go along with the theory, the outlook that we are going to become a Fortress America, then we must have ships which do not depend upon logistic support for their propulsion fuel. We must have ships which are as self-maintainable as possible. The only practical approach to this is to use nuclear propulsion to eliminate the need for fuel oil to operate the ships. In the nuclear cores for the NIMITZ class carriers we can store enough fuel to last 13 years. This would be the equivalent of the oil carried in a

continuous train of oil tank cars stretching from Washington to Boston, some 1.6 million tons of oil.

So, if we are going to have carriers it is essential that they be the most modern type because we must minimize the vulnerability of our forces in combat and we cannot depend on foreign bases. That is the rationale for the nuclear attack carrier; and the Joint Chiefs of Staff are unanimous that the CVAN70 should be built. General Wheeler said that the majority of the Joint Chiefs, himself included, supported a carrier force level of 16.

I believe that General Wheeler's testimony in favor of building the CVAN70 is of particular value because he speaks from long experience as an Army general officer and after six years as Chairman of the Joint Chiefs of Staff, is about to retire, and has no vested interest in the CVAN70 other than his deep feeling for our country. With your permission, sir, I would like to read a few excerpts from his testimony which touch on his views on the cost effectiveness studies which have been performed on the relative cost of land based and sea based tactical airpower, his views on the need for an attack carrier force level of 16; and his views on the need for all three NIMITZ class carriers in order to modernize our carrier force regardless of the force level decided upon. I am quoting from General Wheeler's testimony on April 15, 1970:

"General WHEELER. There have been several informal studies made on this subject, one made by the Navy that came up with a 1 to 1 ratio. In other words, you can provide the same amount of tac air from a carrier as you can from land-based air of comparable numbers.

"One done by systems analysis about the same time came up with as I recall, a 1.4 to 1 ratio, and one done by the Air Force came up with something on the order of 4 to 1 or higher in favor of land-based versus sea-based tactical air.

"Now, this is an extremely complex problem and the reason it is complex is that you first have to calculate what you are going to charge off against the cost of land-based tactical air versus what you charge off against sea-based tactical air. And depending upon what you charge off, you come up with these varying figures.

"I must say that I don't regard any of these studies myself as being definitive and they certainly are not convincing to me as a basis for making a judgment as to the need for sea-based tactical air.

"I looked at this problem in the context of the fact that much of the world's surface is water. Our forces are designed to fight overseas, not on our own land mass. In all of the wars in which I have had personal experience, we have had access to the sea. In some cases, we have had our backs in the sea as we had at the Pusan perimeter, and I have found that sea-based tactical air power is a most versatile and a most useful weapon system.

"Now, saying this, I am not trying to derogate land-based air at all. I think we need both and it is a matter of the mix of the two that concerns me more than anything else."

"Representative STAFFORD. Mr. Chairman, I am not sure I have any questions. I think this is a very good statement, Gen-

eral Wheeler, and my principal impression is that regardless of what the Joint Chiefs individually believe the carrier force level should be . . . they do unanimously support the initiation of long leadtime items this year for CVAN-70.

"General WHEELER. That is correct, Congressman Stafford, and not only that, but as I indicated in my statement, they unanimously support the four nuclear carrier program by 1977, which is saying in another way precisely what you said."

"Representative STAFFORD. And also the strong impression I get from your testimony is that we really aren't addressing the question of the force level of carriers in initiating the CVAN-70.

"General WHEELER. No, you are not, sir.

"Representative STAFFORD. And finally that if we do move toward a smaller number of carriers in the force, it is all the more important that the ones we have be the best ones that we can build.

"General WHEELER. That is my firm belief, Governor."

"Senator STENNIS. I have some questions here now, General Wheeler. On page 2 you make this statement:

'We must, therefore, look toward 1977 and, from that vantage point, appraise the defense needs of our country and the CVAN-70 as it relates to those needs.'

"Now, at the bottom of page 5 you said:

'It is, of course, not possible to judge at this time what the carrier force levels will be at the end of the Vietnam conflict.'

"In the previous paragraph, though, you recommended that the carrier force levels remain at 16 during the 1970's."

"Now, those are not necessarily inconsistent but I think that it requires some explanation. Your first basis, I assume, for the 16 carriers was the war is still going on.

"General WHEELER. That is one basis, sir.

"Senator STENNIS. One basis.

"General WHEELER. Yes, sir.

"Senator STENNIS. Now, assuming the war is over, that may be a violent assumption, I think it is, but we are not expecting it to go through the 1970's.

"General WHEELER. I certainly hope not, Mr. Chairman.

"Senator STENNIS. What do you visualize then? Do you mean to recommend 16 all the way through the 1970's?"

"General WHEELER. Yes, sir. I do indeed and for this reason. Assuming the Vietnamese war is over, and assuming, of course, that we retain the concept of the Nixon doctrine, which envisages support to our allies with lesser involvement ourselves in small conflicts, I still think it would be desirable to have 16 carriers; not on the basis of a peacetime situation but on the basis of a possible future war.

"Now, let's take a NATO conflict A substantial number of carriers must be devoted to the NATO area, particularly for the support of the flanks. I am speaking now of Northern Europe and also in the Mediterranean. In fact, we are talking of a number that would require augmentation from the Pacific Fleet to carry out that commitment.

"At the same time, we must recognize that if we have a war in which the Soviet Union is involved, the war is not going to be confined to the Atlantic Ocean or to the Atlantic region. The Soviet Union is a two-ocean country as well as the United States, and therefore we will have a requirement for a carrier force to be deployed in the Pacific area.

"In addition to that, we are going to have to have something for contingencies. After going over a great number of mixes of carriers needed under varying realistic contingencies, I came down on the number of 16 as being within a prudent level of risk.

"Now, you can turn that argument around the other way and take a look at your contingency plans for operations in Asia and you still will come up with about the same number; in other words, 16."

From General Wheeler's testimony you can see that the Chiefs of all Services even though they differ on the required force level of attack carriers, agree that the CVAN70 is needed to continue modernization of the attack carrier force, including increased use of nuclear propulsion in the fleet of the late 70's, 80's and 90's.

In this regard, it should be borne in mind that six of the fifteen attack carriers now in the fleet were launched during or shortly after World War II.

WHY CVAN70 FUNDS ARE NEEDED IN FY 1971

Mr. MAHON. The President's budget asks \$152 million for procurement of long leadtime items for CVAN70. Why are these funds needed in FY 1971?

Admiral RICKOVER. The CVAN70 was originally scheduled for delivery in 1976, based on the Navy request for advance procurement funds for long leadtime nuclear propulsion plant components in FY 1970. Since advance procurement funds are now planned for FY 1971 with ship authorization and balance of funding planned for FY 1972, the ship delivery schedule has already been changed to 1977. This schedule can be met only if advance procurement funds are made available to the Navy early in FY 1971.

It takes so long to manufacture the longest leadtime items for an aircraft carrier that these must be ordered at least seven years before the ship is to be delivered. The equipments I am discussing are the very largest and most difficult that have ever been made for the Naval Nuclear Propulsion Program.

These large nuclear components must be ordered that far in advance of ship delivery because their size requires a long manufacturing time and they must be available early in ship construction since they are installed in the bottom of the ship. Another reason is that the manufacturing cycle is very long because the requirements for nuclear components—not only for the aircraft carrier but for all nuclear power plants, commercial and Naval—have highly stringent requirements for quality control and inspection. Far greater precautions must be taken in the quality of material for nuclear plants, how it is inspected from the very beginning—from the steel factory all the way through completion of manufacture. These are the most difficult large components American industry has ever encountered.

The total estimated cost of long leadtime nuclear propulsion plant components for the CVAN70 is \$182 million. Only \$152 million is available for this purpose in the Navy FY 1971 budget submission. Therefore only material for some of the long leadtime items can be ordered in FY 1971.

If the \$152 million advance procurement funds were delayed, production gaps would occur in the special NIMITZ class nuclear component production lines which have been established at great effort and cost.

Now, the same industry that is developing and building the large scale nuclear components for the NIMITZ class carriers is also engaged in trying to fill a backlog of \$3 billion of nuclear components for the commercial electric utility industry. They prefer to do the commercial work because the utilities are their steady customers. In fact, the only way we in the Navy have been able to get these companies to put some priority on the items for the nuclear powered carriers is because we had gotten industrial priority assigned to them. This is in accordance with the Defense Production Act of 1950 which provides that the military can be assigned industrial priority for national security purposes. That Act has been periodically extended by Congress since 1950.

The companies, because of the relatively small number of units, dislike to work on the carrier components. They would rather work on the larger number of units they have on order for commercial power plants—orders on which they are behind. They are just as far behind on the commercial units as they are on ours because they have exactly the same difficulty in both. In fact, what is holding up atomic power in the United States is the same thing that makes it difficult for us to get these large components such as pressure vessels, heat exchangers and pumps for the nuclear carriers—they take a long time to build.

Utilities figure on a six to seven year lead time for building a central station nuclear power plant. You can readily understand that for us to build the far more difficult aircraft carrier in that same period of time, we have to do much better than the utilities.

EFFECT OF DEFERRING FUNDS ON CVAN070

So if we don't order all of these equipments ahead of time, it means the ship will be delayed and cost much more. First, if I can make a contract today to build components I am probably saving 10 percent over what they will cost next year, because of inflation. Second, if I don't order the components now the production lines will be disrupted; this will add startup costs and incur additional delay when we order the components later. Third, if the ship is delayed it will stretch out the overall NIMITZ class carrier program; this will reduce the shipbuilder's efficiency and add to his overhead costs. With the large backlog of civilian and other military orders in the heavy equipment industry, industrial organizations are not willing to make long range production commitments without firm orders. Consequently, the price and delivery of major machinery components not covered by firm orders are subject to considerable uncertainty. Thus, the delay in delivery of CVAN70 would be greater than just one day delay in delivery for each day of delay in order placement resulting from lack

of advance procurement funds. Further, disruption in CVAN nuclear component order placement would create added uncertainty on the part of Navy nuclear component vendors as to the validity of the Navy's plan for the CVAN program; this could result in further loss of vendor capacity now available for the naval nuclear propulsion program. The industrial capacity in the United States for manufacturing naval nuclear propulsion equipment for major surface warships and submarines is a real concern if the long range goal of strengthening the Navy through construction of nuclear warships is to be accomplished.

In this regard, Atomic Energy Commission Chairman Seaborg in January 1968 forwarded to the Chairman of the House Armed Services Committee a report I prepared on the effect of the expanding market for civilian electric utility nuclear central stations on the industrial base for naval nuclear propulsion plants. Chairman Seaborg summarized his conclusions as follows:

"Therefore, if the United States is to *retain* sufficient naval nuclear industrial capacity to build reactor plants for the submarines and major surface warships contemplated by the Navy, it is important that a firm long range nuclear ship-building program be decided upon as soon as possible, so that long term commitments can be obtained from suppliers."

The special NIMITZ nuclear component facilities could be used to produce smaller nuclear components for smaller nuclear ships. However, the effort involved in building a ship set of aircraft carrier nuclear components is estimated to be equivalent to the effort involved in building the nuclear components for four nuclear frigates or ten nuclear submarines. It is not likely that the level of authorization for the nuclear submarine or nuclear frigate programs will be increased sufficiently to utilize this production capacity for naval nuclear propulsion components in order to retain its availability for later use in the carrier program.

In cases where disruption would occur, the factories will have plant capacity available, and those factories will fill up their available production capacity with civilian business.

When advance procurement funds are made available in a later year, the Navy will have almost no leverage to get back into immediate production. The Navy has no leverage to require any contractor to maintain, or reestablish in a short time, groups of qualified, experienced, technical and production personnel. These groups take a long time to assemble; but because of their skill and experience, they are quickly reassigned to commercial work whenever they are no longer required for Navy work.

The civilian work to which this capacity would be diverted would also consist of large complex components requiring several years for fabrication which means that this capacity would not be available for reassignment to Navy work if the funds are deferred to fiscal year 1972 or later.

Procurement of long lead material for the EISENHOWER was started in July 1967. Even with fiscal year 1971 advance procurement funding, the Navy cannot initiate procurement for the CVAN70 until July 1970 at the earliest—three years after start of procurement for the EISENHOWER.

Therefore, if advance procurement funds are not provided in fiscal year 1971 for long leadtime nuclear propulsion plant components for the CVAN70,

- a. the CVAN70 will be delayed more than an additional year,
- b. nuclear component production lines will be disrupted,
- c. the gap in construction between the EISENHOWER and the CVAN70 will be widened, which will further decrease the shipbuilder's efficiency in constructing these ships, and
- d. the total span of the NIMITZ class carrier program will be lengthened which carries with it significant costs in the shipbuilder's, contractors', laboratories' and government organizations.

In short, further delay in starting the CVAN70 would significantly increase its cost above the present budget figure for the FY 1972 program of \$640 million, as well as delay completion of the ship.

The issue is if you want to get this ship and you want to get it at minimum cost, no matter what the cost turns out to be you will get it at minimum cost by going ahead with long leadtime procurement now.

THE RUSSIANS DON'T HAVE ATTACK CARRIERS

Mr. ADDABBO. What are the Russians doing in the carrier field?

Admiral RICKOVER. The Russians have helicopter carriers which appear to be designed primarily for anti-submarine warfare purposes. The question is often asked, why don't the Russians have attack aircraft carriers like our own? I tried to explain earlier the difference between their military situation and ours and I will amplify it.

They don't have to transport large amounts of supplies over the seas. They can do it over land. They have a large contiguous land mass under their control which contains the raw materials they will need. The United States is essentially an island lying between the Atlantic and Pacific oceans. We do not have contiguous land masses from which we can conduct military operations to protect our national interests or from which we can obtain the fuels and materials necessary to sustain a war effort. For these reasons, sea-based air power is not nearly as vital to the security of the Soviets as it is to the United States.

The Soviets control an extensive system of land air bases throughout areas of the world vital to them. We have no such comprehensive land-base system. Their predominant land position has required mutual defense treaties with but two nations which do not share a land border with her. Our island position, on the contrary, has led us to negotiate treaties with 43 overseas nations. From our island position, the only way by which we can project our national power beyond range of our land bases is through our Navy. For this, other than by all out nuclear war, we must depend primarily on our attack aircraft carriers.

The Soviets, because of their advantageous position as the predominant land power and because they understand how vital it is for the United States to maintain free use of the seas, have to date structured their Navy with the objective of interdicting our sea lanes.

An analogous situation is that of Germany in World Wars I and II. As the predominant land power she was able to use land transportation to extend her influence and support her military and industrial effort. In 1912, when the Kaiser was striving to match Britain's naval

strength, Winston Churchill remarked, "The British navy is to us a necessity, and from some points of view the German navy is to them more in the nature of a luxury."

LESSONS FROM HISTORY

In World War II the Germans full well knew that the Allied war effort was almost totally dependent on overseas transportation. Therefore, they designed their naval forces around interdiction of sea lanes.

On the contrary, Japan—an island empire—must depend on the seas for her survival. Their attack carriers in World War II were, therefore, the heart of their Navy. The turning point in the Pacific war was the sinking of her carriers in the Battle of Midway in 1942. And the deciding factor in her defeat was the ability of United States air and submarine forces to interdict the flow of oil from overseas to the Home Islands; this strangled her industrial and military effort and brought about her eventual collapse.

Britain, also an island empire, understood the need of a Navy to implement her national interests and to assure the in-flow of food, raw materials and fuel. She maintained a powerful carrier fleet throughout World War II. The British Navy and its carrier force declined along with Britain's reduced stature as a world power and because of fiscal stringency. She was able to accommodate this decline because of her increased reliance on American power.

There is no doubt that attack carriers would enhance Soviet capability to operate their fleets beyond the range of their extensive network of land air bases. Lack of this capability was evident during the Cuban crisis.

FREE USE OF SEAS NECESSARY

Despite the tremendous technological progress made in transportation and weapons systems in this century, free use of the seas—which cover three-fourth's of the earth's surface—continues to be essential to the security of the United States, whether to defend ourselves or to help defend our allies. Please remember that ninety-seven percent of all the material sent to Vietnam has gone by sea. If our sea lanes come under attack the only way we can defend them against air attack in many areas is with aircraft carriers. We don't have the range from land bases.

The United States—a maritime nation—cannot maintain its position as a first rank world power if it does not possess the capability to maintain free use of the seas. For this we must have a modern attack carrier force capable of establishing air superiority in those areas vital to our national defense but not within reach of our land-based tactical air power.

Whether one takes the optimistic view that a permanent East-West detente can be negotiated or the pessimistic view that ultimately we shall have to fight for our liberties, this Nation has no future if it allows itself to be outmatched militarily.

RUSSIANS ARE MORE SELF SUFFICIENT THAN U.S.

Mr. ADDABBO. Are we just as self-sufficient in the United States as the Russians are?

Admiral RICKOVER. No, sir, we are not self-sufficient for many

things. We are certainly not self-sufficient in oil. We could be for a short time—a matter of days. We could use up all the oil stored in Mr. Mahon's state and some of the others in a matter of days—it wouldn't last very long.

I once became quite unpopular at a session of the Texas Delegation when Lyndon Johnson was the leader in the Senate. I advised Texans to save their oil because it would be worth far more in future years than it is now. If I were a Texan and practiced enlightened self-interest, I wouldn't use my oil. I would import oil and save my own. It will be worth far more in the future both from the standpoint of price and because of its more important use as a petro-chemical than as fuel.

Mr. ADDABBO. If we got to that point—and let us hope we never get to it—a war—how would they transport their troops without sufficient carriers?

Admiral RICKOVER. The way they are going to fight they don't have to get very far outside their country. I don't think they envisage a war where they are going to land troops overseas. We do. We have commitments to Western Europe and in Southeast Asia. They don't have to use ships to transport troops to keep most of their commitments.

Mr. ADDABBO. Are our carriers more to protect our worldwide commitments than protect the United States?

Admiral RICKOVER. Well, we have commitments right now to protect Western Europe. We also have the requirement to protect our own commerce over the oceans. The Russians don't have anything in that category of need for their ocean commerce beyond the range of their land based tactical air power.

I would like to say one thing—many historians have now come to believe that the basic cause of World War I was that Germany, the major land power, wanted also to challenge England on the oceans by becoming the predominant naval power. The Russians would be wise to ponder this historical event that led to World War I and to Germany's defeat. The Russians are by far the major land power and they also want to become the major sea power. They have no actual need for such superiority.

WEAPON SYSTEMS VULNERABILITY

Mr. ADDABBO. Will not the Russian naval increases make our carriers more vulnerable?

Admiral RICKOVER. Yes, sir. If you are going to have a nuclear war everything is vulnerable, but even if you have a nuclear war the carriers still can deliver their atomic weapons—even if they are sunk later on.

Both carrier and land-based overseas tactical air are dependent on keeping the sea lanes open for logistic support. It is simply not practicable to provide the bulk of the required logistic support by air. In many areas adequate air defense of our sealifts can only be provided with carrier aircraft. Further, most of the supplies and material for overseas operations go by sea. If these supply lines were attacked, aircraft carriers would be required to defend the sea lanes to assure that the necessary logistic support is made available for the other Services to carry out their missions.

There is no question but that an aircraft carrier is vulnerable, but so is every other weapon.

When you think of the vulnerability of the carrier, please remember that land bases are subject to air and ground attack. The Air Force, like the Navy, has to invest in tactical aircraft for air defense. Further, despite the precautions taken in Southeast Asian air bases, over 350 aircraft have been lost and 3,500 damaged while on the ground at U.S. airbases since the start of the Vietnam war. During the Korean war virtually all tactical airbases in South Korea were overrun by enemy ground forces, some were even captured a second time by the Chinese Communist forces. I am not criticizing the need for land bases, but we need to recognize they are vulnerable to sabotage, mortar attack, grenades, and so forth.

Every weapon is vulnerable because once it is developed, your potential enemies start work developing counters to it. The fact that carriers and land airbases can be damaged by enemy attacks does not reduce the need for tactical air power—both land and sea bases. Without tactical air power our amphibious forces, our ground troops, our logistic supply lines would be unacceptably vulnerable.

The basic question is whether the United States intends to provide tactical aircraft coverage for our fighting men and for our logistic supply lines. As long as we are faced with commitments that involve transporting material and men across the oceans and being able to fight when they get there, we have the problem of providing tactical aircraft coverage enroute and at the other end when they arrive. We can provide that tactical aircraft coverage from aircraft carriers which are mobile platforms or from land bases if they are in the right places and ready to use before the contingency arises.

You have heard many of the points I am making about the need for nuclear carriers before. You have heard testimony from many people on this subject and let's face it, the facts are still and forever will be facts. You must assimilate in a few hours of hearings this information that has been thought through and evaluated by many in the Department of Defense and the Navy. This puts a tremendous demand on you to sort through all you hear and grasp the meaningful points. I am reminded of Representative Torbert H. Macdonald's recent remarks to railroad union leaders about the deadlocked contract negotiations:

“Do you think this committee is composed of supermen who can come up with the wisdom of Solomon on a subject that you've been kicking around for months?”

WASHINGTON NAVAL CONFERENCE OF 1921

Mr. MAHON. It has been alleged by opponents of the NIMITZ class carriers that except during wartime the United States has had 15 capital ships since the 1921 Washington Naval Conference. That before World War II these capital ships were battleships while after that war they were carriers. It has been stated that the present attack carrier force level is a legacy of the past derived from the Washington Naval Treaty and that this level has been maintained without reference to the changing role of the carrier, the changing international situation, or the changing weapons against which the carrier must defend itself.

Now, this requires considerable understanding. Would you comment on the correctness of this allegation?

Admiral RICKOVER. This argument is frequently used by the opponents of the carrier. Some of the high civilian authorities in the Defense Department and in these think tanks—not Mr. Laird or Mr. Packard—try to confuse the issue with this argument.

I am quite familiar with the Washington Naval Treaty. I was in the Navy at the time and followed it with great interest because of the great impact on our Navy. I have again read the Treaty Limiting Naval Armament which resulted from the Washington Naval Conference of 1921. I can assure you that the present-day attack carrier force level has nothing whatsoever to do with this treaty.

Mr. RHODES. May I ask a question on the Washington Treaty?

Mr. MAHON. Yes.

Mr. RHODES. Admiral, I am amazed they are still talking about the Washington Treaty. Hasn't that been abrogated by practically every signatory nation?

Admiral RICKOVER. The treaty was terminated on December 31, 1936 in accordance with the provisions contained in the treaty itself.

Mr. RHODES. That is what I thought, and I am amazed people still refer to it.

Admiral RICKOVER. Mr. Rhodes, if you want to act as you do in a college debating society where you don't worry about the facts, but about the points you can make, then that is what you do. That is what some opponents of carriers are doing. We are living in a real world and they are not living in a real world. They are living in a world of the mind. We here in this room are concerned with the survival of the United States. I am not trying to show you that I am smarter than you are, nor are you trying to show that you are smarter than I am. We each have mutual respect for the knowledge the other has in his own field. The members of this committee have expertise in politics, in finance and in appropriations. I do not. If I am an "expert" in anything, it is in naval design and construction and in the Navy's requirements for modern technology. I believe we respect each other in our own areas of competence, sir.

Mr. RHODES. Admiral, may I suggest also that you are expert in getting along with people?

Admiral RICKOVER. That is very simple, Mr. Rhodes. You can easily get along if you know what you are talking about. That makes it much easier to get along with people.

The Washington Naval Treaty issue is a case in point. As Mr. Mahon has indicated, some of the carrier critics imply that the need for the present force level of 15 attack carriers has not been thoroughly reviewed and was arrived at 50 years ago as sort of a "magic number." This is just not so. Misstatement of facts can give one a reputation for originality, but is not conducive to rational discussion of important issues. Some seem to believe that by changing a description they can change the thing itself.

One widely quoted source for the erroneous allegation in this case is a lecture on "U.S. Naval Policy" delivered at the Naval War College on March 18, 1969 by Dr. Arthur C. Herrington, Director for Naval Forces Programs in the Office of the Assistant Secretary of Defense for Systems Analysis. The passage from this lecture which contends that our 15 attack carrier force level is derived from the 1921 Conference is:

"Faced with the new world of 1946, the Navy had to make hard recommendations on the size of the postwar fleet. Not surprisingly, perhaps, in 1947 the recommended level of attack carriers, the Navy's new capital ships, was 15. This was the maximum number of U.S. battleships that had been imposed by the Washington Treaty of 1921 and was the exact number in the Navy from 1921 until our entry into World War II, 20 years later.

"The Navy's 15-carrier force objective came under increasing attack in the late 1940's. With the proposed introduction of the new supercarriers, actual force levels fell as low as 11 at the outbreak of the Korean war in 1950. Korea brought a resurgence of carrier air, but, again, by early 1956 attack carrier objectives and force levels had stabilized at 15. Today we still plan a 15-CVA force for the future. Yet over this 25-year period we have seen a polarization of the world into Communist and non-Communist camps and, lately, an increasing fragmentation of both; the development of the Marshall Plan, NATO, the conversion of our enemy in the Pacific, Japan, to an ally and the conversion of our old ally, China, to an enemy; a doubling of the size of the attack carrier; nuclear propulsion; jet aircraft; and nuclear weapons! In truth, 15 attack carriers (or 15 capital ships in the U.S. Navy, if you will) appears to be close to an "eternal verity" in U.S. military planning."

NAVAL TREATY ALLOWED U.S. 18 BATTLE SHIPS PLUS CARRIERS

The naval treaty resulting from the 1921 Washington Conference is only a few pages long. Had Dr. Herrington taken a few minutes to read it he would have found that his statements are in error; he would have learned that the United States was allowed to keep 18 battleships, listed by name in the treaty; in addition allowed to have 135,000 tons of aircraft carriers which would provide between 4 and 13 carriers depending on their tonnage.

In view of the current great interest in disarmament talks I think it would be worthwhile if more people read the Senate Report on the 1921 disarmament conference. Some ask why it is necessary to study history in this rapidly changing world. Of these people I ask: Did you ever see a man who has lost his memory?

I have a copy of the treaty itself right here. It was between the United States, the British Empire, France, Italy and Japan and set forth limitations on naval armament in two major categories, capital ships and aircraft carriers. The term "capital ship" was defined in the treaty as a vessel of war, not an aircraft carrier, whose displacement exceeded 10,000 tons or which carried a gun with a caliber exceeding eight inches. The United States was allowed to retain 18 existing capital ships, all of which were battleships, for a total tonnage of 500,650 tons. Capital ships could be replaced when they reached 20 years of age, except that no new capital ships were to be laid down for 10 years after November 12, 1921, with certain minor exceptions specified in the treaty. The total capital ship replacement tonnage of the United States was not to exceed 525,000 tons. It was also provided that no capital ship exceeding 35,000 tons standard displacement would be acquired or constructed by any of the signatories.

The treaty stipulated that all existing aircraft carrier tonnage should be considered experimental and therefore aircraft carriers could be replaced without regard for age. The signatories also agreed that the total tonnage for aircraft carriers for the United States would not exceed 135,000 tons in standard displacement. An aircraft carrier was defined as a vessel of war with a displacement exceeding 10,000 tons and designed for the specific and exclusive purposes of carrying, launching, and landing aircraft.

It was also provided that no more than two aircraft carriers exceeding 27,000 tons standard displacement would be acquired by or constructed by any of the powers. Two carriers could be of a tonnage of not more than 33,000 tons standard displacement and had to be accounted for within the total tonnage allowances for aircraft carriers. For reasons of economy these two carriers could be converted from any two ships whether already constructed or in the course of construction which would otherwise be scrapped under the provisions of the treaty. The United States utilized this provision to convert the battle cruisers LEXINGTON and SARATOGA which were under construction to aircraft carriers; otherwise they would have been scrapped.

A little arithmetic will show that, in addition to the 18 battleships, the total aircraft carrier tonnage allotted to the United States under the terms of the treaty could have provided as few as 4 or as many as 13 aircraft carriers depending on their displacement. When the treaty was signed the only aircraft carrier the United States had under construction was the USS LANGLEY, CVL, a converted collier which was completed in March 1922. Under the terms of the treaty the LANGLEY was considered experimental and did not count against the aircraft carrier allotment. The United States actually used its allotment of 135,000 tons to build 6 aircraft carriers, the LEXINGTON, SARATOGA, RANGER, YORKTOWN, ENTERPRISE, and WASP, all of which were completed or under construction before the treaty was terminated on December 31, 1936.

On December 7, 1941 when the Japanese attacked Pearl Harbor the United States had in commission 17 battleships and 7 aircraft carriers in addition to one escort carrier, the LONG ISLAND, which had been converted from a C-3 type cargo ship. In addition 8 more battleships and the first 5 aircraft carriers of the ESSEX class had been laid down.

CARRIER FORCE LEVELS AFTER WORLD WAR II

The Navy came out of World War II with 23 battleships, 20 attack carriers including 17 of the ESSEX class, and many of the light-CVL- and escort-CVE-types of carriers in commission. In addition, two battleships, nine ESSEX class carriers, and three MIDWAY class carriers were under construction; the two battleships and two of these ESSEX class carriers were not completed.

The force level of battleships was reduced to the four IOWA class ships by mid-1948. These four battleships were active in the fleet until after the Korean war. They were decommissioned between 1955 and 1958. The NEW JERSEY was reactivated for a short time during the Vietnam War.

The force level of attack carriers was also cut each year following World War II, with many of the recently completed ESSEX class

carriers being deactivated and put into the reserve fleet. By 1950 the force level was down to only seven attack carriers—three MIDWAY class and four ESSEX class. That was soon demonstrated to be a serious mistake.

Within days after the North Koreans invaded South Korea they had overrun and captured every tactical airbase in South Korea. Carriers were the only practicable and available means the United States had left to furnish tactical air support to our badly mauled troops. The Navy, on a priority basis, reactivated the ESSEX class attack carriers which had just been put into the reserve fleet. Since these ships were then fairly new, it was feasible to build up the carrier force level rapidly. By 1952 the Navy had 16 attack carriers in operation.

Congress approved a building program of one modern carrier of the FORRESTAL class per year from fiscal year 1952 through 1957. The nuclear powered ENTERPRISE was authorized in fiscal year 1958, the conventional AMERICA in 1961, and the conventional JOHN F. KENNEDY in fiscal year 1963. Starting in 1955, as the nine new carriers were completed, the attack carrier force level was varied between 14 and 19 by varying the number of ESSEX class attack carriers in the active fleet.

For the past 10 years the approved force level for attack carriers has fluctuated between 14 and 16 depending on the circumstances. When operation ——— was undertaken in the Vietnam war, it was recognized that the Navy could not meet its total tactical air assignments with the then approved force level of 15 attack carriers. The President, therefore, approved augmentation of the force with one anti-submarine warfare carrier serving in the attack carrier role for duration of the conflict. Thus, the Navy currently has 16 carriers serving in the attack carrier role.

Of course, if you have modern aircraft carriers in the reserve fleet as we did when the Korean war started, the force level can be increased, with relative ease. But we don't have that situation now. We don't have any attack carriers in the reserve fleet anymore and six of the fifteen attack carriers now operating were launched during or shortly after World War II.

CONTRIBUTIONS OF THE SYSTEMS ANALYSTS

So you can see, Dr. Herrington's statements are historically inaccurate. As Agathon, the Athenian tragedian said, "Even God cannot change the past." But systems analysts occasionally try.

One would expect a senior official in the Office of the Assistant Secretary of Defense for Systems Analysis to be accurate in his statements in a lecture on U.S. Naval Policy at the Naval War College, and should be able to quote him without fear of passing on incorrect information. However, it has been my sad experience that this is not the case, as illustrated by the example I have just discussed. I have testified to your committee many times that it is misstatement of fact, as illustrated by this example, that has done much to discredit Systems Analysis. The factors involved in deciding upon major weapons systems are quite complex; the task is made harder when supposedly responsible officials cloud the issues with irrelevant and incorrect information. A refusal to face facts is a sort of voluntary blindness. It results in rationalization, the process of obviating an uncomfortable fact by fallacious logic.

"Let us not lose ourselves in the systems: let us listen to the voice of history." De Maistre's advice can still be heeded with profit.

An eminent Oxford don was once asked what was the best advice he could give to graduates. He said, "Check your sources," and that is what systems analysts frequently fail to do. They frequently do not go below the surface of issues. They seem to be afraid that their ability to express profound opinions will be affected if they delve too deeply into the subject. They forget that an absurdity, even though it is widely accepted will still be an absurdity.

There are few things more frightening than the steadily increasing prestige of "scientifically" minded brain trusters in the councils of government. Instead of indulging in such an old-fashioned, uncomputable activity as thinking, they reckon with the consequences of hypothetically assumed conclusions without being able to test their hypotheses against actual occurrences. The logical flaw in these hypothetical constructions of future events is always the same: what first appears as a hypothesis turns immediately into a "fact," which then gives birth to a whole string of similar non-facts, with the result that the purely speculative character of the whole enterprise is forgotten. This is not science but pseudo-science.

Over the last several years senior members of my staff and I have had to divert countless hours away from our technical work in order to point out errors in the statements made by Dr. Herrington in official documents expressing his continuing opposition to our nuclear carrier, frigate, and submarine programs. Therefore, you can imagine my feeling when I learned that he has been assigned by the Department of Defense to assist the Defense Program Review Committee which has been established to advise the National Security Council. As I testified to the Joint Committee on Atomic Energy, in my view this is like the farmer selecting a goat to guard the cabbage patch.

NUCLEAR SURFACE SHIPS

Mr. MAHON. Admiral, would you please say a little more on your views on the need for building more nuclear surface ships?

Admiral RICKOVER. Yes, sir.

It should be borne in mind that nuclear submarines and nuclear surface warships incorporate the most advanced weapons systems available and are very complex ships which take many years to build. In the event of war we will have to fight with the warships we then have—there will not be time to build new ones. In war many things can be improvised quickly, but nuclear warships cannot be produced quickly. The decisions on what warships we will have in war must be made in peacetime.

The nuclear carriers and their nuclear escorts will constitute a major striking force of the U.S. Navy. That will be what you could call our battle force. It will be the most powerful group of ships that has ever been assembled. It will be a force that can be sent anywhere in the world on short notice and in a short time. And in view of the limitations there may be on our having advanced bases overseas, and our relations with other countries, this may be a very, very important thing in future years. The existence of such a force will free us from much logistic support and will enable us to operate swiftly and surely without dependence on foreign bases or foreign agreements.

They will carry enough fuel to last them about 13 years for carriers and 10 years for frigates. That means that during a long war, you don't need to worry about oil support for propulsion.

Now, there is another thing about nuclear power that isn't generally recognized. You can in peacetime manufacture nuclear cores and store them. The thing that limits you in wartime is your manpower and your material. You can't store sufficient oil to last a long time. You can only store enough oil for a short time, but with nuclear power you can store ten years' worth of fuel. We can make nuclear reactor cores in peacetime and have them ready for war. They don't deteriorate and they are small. In the size of a building like the Capitol, you could store all the fuel needed for all our nuclear ships.

It would be far better in my opinion to lay up or scrap older ships than to slow down construction of nuclear warships. It is more important to have ships that can be depended upon to support our national objectives. For example, the new class of destroyers the Navy is presently ordering will only go 6,000 miles at 20 knots by the time all their fuel is expended. A nuclear warship can run for years without concern for having to refuel from an oiler. It is almost an article of faith for a modern Navy where everything is becoming so vulnerable that you should introduce within the ship itself any degree of invulnerability you can.

We need nuclear carriers and nuclear frigates for our surface striking forces. Nuclear frigates are designed to operate on independent missions against enemy targets or as part of a coordinated protective screen for a task force to destroy enemy aircraft, missile submarines and surface ships that attack the force. Nuclear frigates provide the essentially unlimited endurance of nuclear propulsion with the capabilities of the latest anti-air and anti-submarine weapons systems.

The capabilities of a carrier task force are much improved each time a nuclear warship is substituted for a conventional warship. When a nuclear carrier is substituted for a conventional one the range of the task force is about doubled. When half the warships accompanying the nuclear carrier are changed to nuclear propulsion the range of the task force is doubled again. When all the ships in the task force are nuclear powered the range of the force is essentially unlimited even at high speed. Thus the greatest benefits of nuclear propulsion are achieved when all the frigates in a nuclear aircraft carrier task force are nuclear powered.

In the Navy's program to modernize the destroyer force, it is the Navy's goal to provide nuclear frigates for all nuclear powered carriers and to provide additional nuclear frigates for assignment to independent missions at long ranges without logistic support. Examples of independent ship missions where logistic support may be nonexistent or difficult to provide are quarantine, show-of-force, rescue, protection of minesweeping operations, prevention of aerial minelaying, and submarine trailing and hold-down operations.

NUCLEAR FRIGATES

Mr. DAVIS. Why don't you take this moment to bring us up-to-date on the status of DLGN36, DLGN37 and the lead ship of the DLGN38 class?

Admiral RICKOVER. As you know we have two nuclear frigates, the USS BAINBRIDGE, DLGN25, and USS TRUXTUN, DLGN35, in

operation and two nuclear frigates, the DLGN36 and DLGN37, under construction.

As you may remember the DLGN36 had long leadtime funds appropriated in fiscal year 1966 and the balance of the ship funded in fiscal year 1967. The DLGN37 had long leadtime funds appropriated in fiscal year 1967 and the balance of the ship funded in fiscal year 1968. Contracts for these ships were awarded to Newport News Shipbuilding and Dry Dock Company in July 1968.

The keel for the DLGN36, which is to be named the CALIFORNIA, was laid January 23, 1970. Construction work on the DLGN37 is also underway. At the CALIFORNIA keel laying Secretary Laird noted:

“What we are doing here today is to begin a vitally needed and continuing program of ship construction to improve the Navy of the United States. We are building nuclear-powered frigates for the Navy of the 1970’s, the 80’s and the 90’s.

* * *

“As an escort to nuclear aircraft carriers of the present and the future, the CALIFORNIA and her successors which have been authorized by the Congress will greatly extend the range of attack carrier striking forces throughout the world.

“The additional radius of action which the CALIFORNIA and her successors will provide to naval forces will be of great value to the defense of our allies. This is particularly important, as we face the inescapable reality of what the Soviet Navy is doing in expanding seapower throughout the world. The Soviet Navy is now second in power only to our own.”

The DLGN38 is the lead ship of the new class of frigates, formerly called DXGN, which was proposed by the Secretary of Defense when the President notified the Congress in April 1968 that he did not intend to build the DLGN for which long leadtime funds were appropriated in fiscal year 1968. Long leadtime funds for the first two ships of the DLGN38 class were appropriated in fiscal year 1969. The balance of funding for the DLGN38 and long leadtime funds for the third, fourth and fifth ships were appropriated last year.

The long leadtime funds for the fifth ship were added by Congress to the fiscal year 1970 appropriation. The fifth ship of this class will be the first nuclear escort for the DWIGHT D. EISENHOWER.

This year’s budget request includes the remaining funds for the second ship of the class, the DLGN39, and additional long leadtime funds for the third and fourth ships of this class. I urge you to approve these funds, sir.

NUCLEAR FRIGATE BUILDING RATE

Mr. DAVIS. What would be your comments relating to our rate of construction of nuclear frigates?

Admiral RICKOVER. In my opinion we are not building enough, sir. The nuclear frigate program has finally been restarted with the keel laying of the CALIFORNIA in January after a hiatus of almost seven years. However, the frigate building program is still lagging badly, and the Department of Defense has not yet agreed to the Navy’s proposed program for nuclear frigate construction.

For many years I have testified that because of the vast improvements being made in weapons technology the Navy should wherever

possible go underwater to carry out its missions. The most striking example of where this has been accomplished in the past decade is the transfer of the Navy nuclear war deterrent mission from bombers based on aircraft carriers to Polaris missiles launched from nuclear submarines. Increased emphasis has also been placed on nuclear-powered attack submarines for anti-submarine missions—a policy that should be continued.

There are, however, some important Navy missions which cannot, in any known practical way, be carried out by submarines. We cannot do the tactical air support job that the aircraft carrier does by means of any undersea ships, as far as we know today. Nor can we do the anti-aircraft mission of the guided missile frigates. The largest warships we can have underwater right now are 10,000 ton or so submarines. These have no self-defense systems except torpedoes; the ocean depths give them their self-defense. But likewise they cannot carry military equipment which can perform tactical aircraft or anti-aircraft missions. Remember that one pound weight added to a submarine adds three pounds to its displacement and this tends to reduce its speed. You just can't put tactical aircraft or anti-aircraft systems in a submarine with what we know today. The ship would get all out of proportion in its size, its cost, and its lower speed.

Additional new surface warships with guided missile anti-air warfare and anti-submarine capability are required to provide adequate air and submarine defense for the fleet. The Navy and the Department of Defense agree on this point. In response to this need the Navy has proposed to construct nuclear-powered guided-missile frigates at a rate such that the delay in forming all-nuclear task forces with the new nuclear carriers would be minimized.

In the Selected Acquisition Report for the DLGN38 Class, the Navy has reported to Congress its long range plan to build more than 20 nuclear frigates of the DLGN38 Class. This would provide all-nuclear carrier striking forces as well as some nuclear frigates for independent missions. When all these nuclear ships are built, less than 15 percent of the destroyer-type ships in the fleet planned for the early 1980s will have nuclear propulsion. Thus, it is clear that this is a relatively modest rate for changing the destroyer forces to nuclear power. However, we do not know whether the Department of Defense will approve the Navy's proposed nuclear frigate program.

The Navy's recommended program for nuclear frigate construction would build up to the construction of as many as four ships per year. However, budgetary constraints thus far are limiting the program to one per year.

I strongly urge that Congress take the steps necessary to raise the nuclear powered frigate program to an absolute minimum of two ships per year starting in fiscal year 1972. I am concerned that the continual tightening of budgetary constraints will force the Navy to a smaller nuclear frigate building program.

At the present nuclear frigate building rate the ENTERPRISE will have been at sea 11 years before she has four nuclear powered guided missile ships available to accompany her, and the NIMITZ will have been at sea several years before four nuclear frigates are available to accompany her. Before the first nuclear frigate is available to accompany the EISENHOWER, both the EISENHOWER and the CVAN70 will already be at sea.

If the present building rate of only one nuclear frigate per year is continued, the CVAN70 will have been at sea over seven years before four nuclear frigates will be available to accompany her. Further, nuclear frigates are urgently needed to give the fleet warships which can carry out independent missions at long ranges without logistic support.

Even with a nuclear frigate building program of two ships per year, the CVAN70 will have been at sea over three years before four nuclear frigates are available to accompany her and none will be available for the independent missions for which they are so uniquely suited.

Does that answer your question, sir?

Mr. DAVIS. Yes.

HONORABLE GLENARD P. LIPSCOMB

Admiral RICKOVER. Of course, we wouldn't be building any nuclear frigates if it had not been for the initiative taken by Congress in this important program. You all remember that first for the CALIFORNIA—DLGN36—and later for the DLGN37, Congress took the unusual step of requiring in the law that the contracts for these ships "shall be entered into as soon as practicable unless the President fully advises the Congress that its construction is not in the national interest." No truer words have been said than those of Congressman Glenard P. Lipscomb quoted on the plaque attached to the keel of the CALIFORNIA—and I quote—

"Future generations of Americans will recognize that it was Congress that had the foresight, wisdom, and courage to take this initiative to strengthen the defense of our Nation."

It was my privilege to know Glen Lipscomb for many years; to know how much he helped the naval nuclear program. He fought hard for what he thought to be right, including the major contribution he made to getting the nuclear frigate program going. I miss him deeply as I know all of you do. His was the voice of decency, of conservatism, of patriotism. He rendered great service to his district, his state, and the Nation.

Concerning the nuclear frigate program for which Glen Lipscomb worked so hard the House Armed Services Committee in House Report No. 91-522 of 26 September 1969 recommended authorization of the DLGN38 and stated:

"NUCLEAR ESCORTS

"Again the Congress had led the fight for nuclear escorts. It even wrote the requirement to build authorized escorts into the law. Each nuclear carrier needs at least four nuclear escorts. Only with the last escort being nuclear will the task force really achieve the real benefits that nuclear power can

make. Making the last escort nuclear is cutting the link to the fuel oil chain, and studies show that this makes the greatest difference in cost effectiveness. For the life of the task force, making the carrier nuclear and making each escort nuclear produces costs which are about equal. This is because the task force which is conventionally powered has to have six escorts to do what four nuclear powered escorts do, and the logistics costs of the conventional system balance out to the nuclear costs. For similar overall costs, the great military advantages for the nuclear powered escorts weigh heavily in their direction. It was these advantages that had long caused the Navy and the Congress to go on record as favoring the nuclear escorts.

"The Department of Defense is building two of the three DLGN's which the Congress had authorized, and has promised to build at least four DXGN's. The DXGN is the new frigate being designed as an entire weapons system, using the same design methods that were being used in the new DX destroyer. The Navy has decided that the original delivery schedules for the four DXGN's would not be delayed if only one DXGN were fully funded this year. However, it is still the committee's firm position that all four nuclear carriers should have nuclear escorts—not just the ENTERPRISE and the NIMITZ."

I hope that Congress will continue to give vigorous support to the nuclear frigate program. In order to have nuclear frigates available in the fleet in time to support the new nuclear carriers an expanded construction program must be established.

Mr. MAHON. Admiral, we appreciate your comments concerning Glen Lipscomb. We all deeply regret his untimely death only a few days after the keel of the CALIFORNIA was laid. It was most fitting that he should be honored at the CALIFORNIA keel laying. Virginia Lipscomb is a fine and brave woman and I know that it was hard for her to participate in the ceremonies when he was so gravely ill.

Would you please put in the record at this point the fine statement you made at the keel laying ceremony concerning the wonderful contribution Glen and Virginia have made to our country. Part of that statement was used at his funeral services held here in Washington and in California.

Admiral RICKOVER. It would be a privilege to do so, sir. I will also be glad to furnish a replica of the commemorative plaque on the CALIFORNIA keel plate.

Mr. MINSHALL. I consider it a privilege to have served with Glen Lipscomb for many years. He was a truly outstanding American and all of us will miss his wise council and steady hand.

(The information referred to follows:)

INTRODUCTION OF MRS. GLENARD P. LIPSCOMB, LOS ANGELES, CALIFORNIA, BY VICE ADMIRAL H. G. RICKOVER, USN ON THE OCCASION OF THE KEEL LAYING OF THE NUCLEAR FRIGATE CALIFORNIA (DLGN36) AT NEWPORT NEWS, VIRGINIA, JANUARY 23, 1970

I have the privilege and pleasure of introducing a most gracious lady from California who has the leading role in the ceremony for which we are assembled.

We are honored by her presence—a woman who has devoted her adult life to being a partner and an helpmate of one of the great Members of our House of Representatives—a patriot, a statesman, a gentleman, a dedicated American: Congressman Glenard P. Lipscomb.

Virginia Lipscomb was born in Binghamton, New York but moved to California as a child. She attended Belmont High School in Los Angeles where she met her husband.

The Lipscomb's have two daughters: Diane, who will assist her mother in the ceremony today, and Joyce who lives in California.

In 1947 Congressman Lipscomb was elected to the California State Legislature where he served until elected to Congress in 1953. As is typical of congressional wives, Mrs. Lipscomb campaigned actively with her husband and has remained close to his congressional activities. In addition, she has devoted considerable time to Red Cross work and to the Florence Crittenton Home for Unwed Mothers of Washington, D.C. She is an active member of the Congressional Club and has served as its vice president.

Congressman Lipscomb could not be with us today. I cherish his friendship; I know of no finer gentleman. He has the spirit of compassion and understanding; he inspires one. No words can express the energy and the wisdom he has devoted to his country.

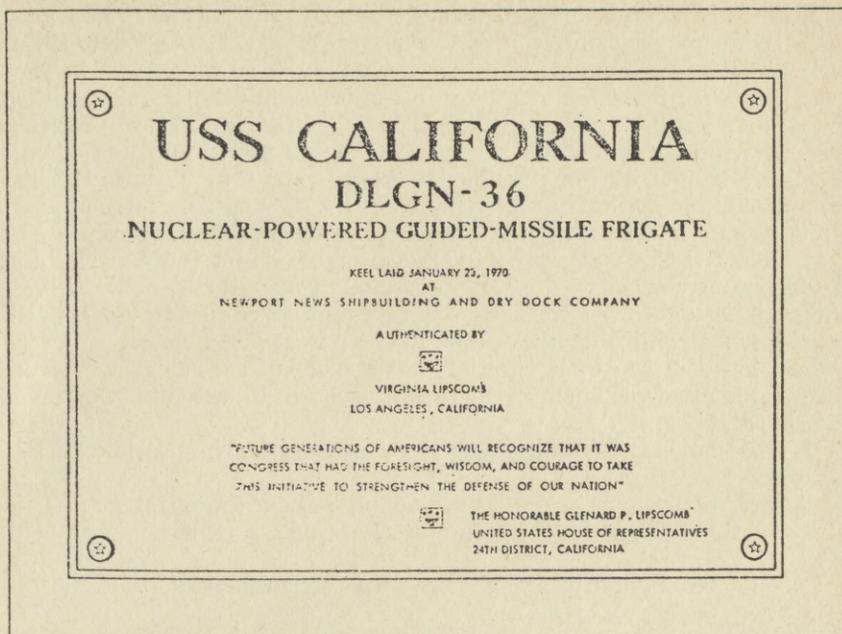
Nine consecutive terms in the House speak eloquently of his success. Since 1958 he has served on the powerful House Appropriations Committee which appropriates money to operate the Federal Government. He is ranking Republican member of its Defense Subcommittee and serves on the subcommittee handling appropriations for the Departments of State, Justice, Commerce, the Federal Judiciary, and related agencies. In addition he is the ranking minority member of the Committee on House Administration. He is a member of the Joint Senate-House Committee on Printing. Since 1959 he has also been chairman of the California Republican Delegation in Congress.

His success can be measured by his accomplishments and by the high esteem and great affection he holds among his congressional colleagues. His keen intellect and diligent research have resulted in better programs for America, especially America of the future. His voice is a steady one—a voice of decency, of conservatism, of patriotism. He renders great service to his district, to his State and to the Nation.

It has been my privilege to know him for many years; to know how much he has helped the naval nuclear program. He has had a great impact upon me because of the force of his character, the quality of his mind, his integrity. He is forthright, without guile, outspoken in his convictions, strong in his faith and love of country. He consistently speaks and fights for what he believes to be right. It has been a great comfort to me to be able to go to so fine a man for his help and kindly advice. I am grateful that our Congress has a man like Congressman Lipscomb, who has done so much for the United States. It is only through the intense efforts of such men that our form of government can be preserved.

I have always admired and appreciated his concern and tenderness for his wife—who has contributed so much to his accomplishments.

Ladies and gentlemen, it is with a deep sense of pride that I introduce to you Glenard Lipscomb's lifelong partner, Virginia Lipscomb. She honors the Navy and the State of California by authenticating the keel of this ship which will bear the name of her great State.



A replica of the commemorative brass plaque authenticated by Mrs. Virginia Lipscomb at the keel laying ceremony for *California* (DLGN36)

VULNERABILITY OF POLARIS SUBMARINES

Mr. MINSHALL. Would you tell us, please, Admiral, what is the capability of the Russians, as of today, to detect and track our POLARIS nuclear submarines?

Admiral RICKOVER. I am afraid I can not give you a good answer to that question, sir. I can only tell you——.

Mr. MINSHALL. Do they have the ability to detect and track our subs?

Admiral RICKOVER.——.

Mr. MINSHALL. How secure do you feel one of our POLARIS submarines is when it is on station?

Admiral RICKOVER. I believe they are secure today. I would not say that this condition will obtain a few years from now. As you know, we have certainly helped them by publishing in the open literature most if not all of our—— technology. This is another area that completely baffles me—why we permit this to continue, sir.

Mr. MINSHALL. Do you think it would be a better course to follow to put more money into POLARIS and POSEIDON type submarines or do you think we should try to better protect our Minuteman sites, with the ABMs?

Admiral RICKOVER. Mr. Minshall, I am the not the one in best position to answer that question. However, there are a few concepts which are evident. The advantage of having our missiles at sea is that they would draw fire of the enemy onto the ocean and not on the United States itself. Should there be an all-out nuclear war, I would rather see an attack on our ships at sea with their small number of people than on the mass of our population. Also, it is unlikely that an enemy would be able to destroy all of our POLARIS ships, and he knows that as long as these ships are in existence we can destroy him.

I look at it this way: In 10 to 15 years will be able to do everything just about as well as we do. But fortunately this will take time—I hope long enough for the Russians and the United States to come to an agreement prohibiting the use of nuclear weapons. The relations between us seem to be thawing. If we can delay a nuclear war from erupting, that is what our generation needs in its attempt to avoid a world cataclysm.

Mr. MINSHALL. Would you care to comment on the proposed ABM system?

Admiral RICKOVER. I don't know enough about the ABM, sir. Again I would be talking to you as a novice. I am not an expert in that field.

PUBLICATION OF TECHNICAL INFORMATION

Mr. MAHON. Admiral, you mentioned how we have helped the Soviets by publishing too much information. This is a subject you have discussed with this committee before and one in which we take great interest. Would you give us your latest thoughts on this?

Admiral RICKOVER. Yes, sir. I continue to see vast amounts of our technology being given away through open publication. A consistent source is in advertising by firms doing defense work. Advertisements devoted solely to military equipment continue to appear in magazines and technical journals, the cost of which in nearly all cases is charged to Government contracts. The tax-payers' money is being used to release valuable information to our potential enemies, information which was developed also at the tax-payers' expense. It simply makes no sense for such advertising to be permitted, but I have been unable to get the Defense Department to issue the necessary regulations to stop it.

You may recall in 1961 I testified before this committee regarding Government reimbursement of defense contractors for advertising costs.

Senator Howard Cannon at about the same time testified before the Senate Appropriations Committee on the same subject.

As a result of this testimony, Congress included a provision in the fiscal year 1962 Department of Defense Appropriations Act prohibiting reimbursement of advertising costs except for (1) the recruitment of personnel required for performance of the contract; (2) the procurement of scarce items; or (3) the disposal of scrap or surplus materials. In other words, contractors were to pay for advertising out of corporate profits, except for the three items I just enumerated.

These provisions were incorporated into the Armed Services Procurement Regulation, and they remain in effect today. However, the Armed Services Procurement Regulation provision apply mainly to

cost-type contracts. They are only "guides" in pricing fixed-price contracts.

I am convinced that many fixed-price contracts include indirect payments for advertising costs, which in all likelihood would be disallowed under the Armed Services Procurement Regulation rules for cost-plus-fixed-fee (CPFF) contracts. I, therefore, testified again in May 1967, on this subject before the House of Representatives Appropriations Committee.

As a result of that testimony, Congress reiterated its position by writing into the fiscal year 1968 Department of Defense Appropriations Act a prohibition against paying the costs of advertising by any Defense contractors except for the three cases I mentioned. The same prohibition was repeated in the FY 1969 and FY 1970 Defense Appropriation Acts.

The record is clear that Congress' intent in writing this provision into law is to extend the present Armed Forces Procurement Regulation provisions, which apply to reimbursement of advertising costs under CPFF contracts, so as to prohibit reimbursement of advertising costs as an element of cost on any negotiated contract, except advertising paid from profits.

I know of no effort underway within the Department of Defense to reappraise its policies with regard to the reimbursement of advertising costs to defense contractors in spite of their being aware of Congress' concern and mandate in this matter.

MEASURES TO STOP RELEASE THROUGH ADVERTISING

Last year, I recommended to this committee that a provision be put in the Appropriations Act prohibiting the expenditure of funds in Government contracts to pay for advertising in magazines and technical journals. The situation has not changed since last year and I again make this recommendation to you. In my opinion, Congress alone, through the power of the purse, can do what is required. This is so important as to warrant overriding other consideration. You should stop expenditure of American tax money for the purpose of giving away valuable American technology.

It is difficult to try to control security through cost principles because of changes in accounting systems, overhead allocations, and so on. However, I believe certain actions can be taken at least to reduce the volume of advertisements, and place the burden of the cost of the remaining ones on the shoulders of those who derive the benefit from them.

First: A mandatory clause should be inserted in all contracts for procurement of military hardware requiring prior Government security clearance for all advertising. There is a clause in each of my contracts which requires that the company obtain Government approval prior to release of any information relating to work under the contract. Were you to read any of these magazines you would find no advertisements or technical data about naval nuclear power plants.

Second: The Department of Defense should be required to extend the present armed services procurement regulation provisions which apply to reimbursement of advertising costs as an element of cost on any negotiated contract, except advertising paid from profits.

Third: Congress should require the General Accounting Office to undertake an investigation to determine just how much the Department of Defense is subsidizing contractor advertising costs, and how effective the administration of the Armed Forces procurement regulation provisions pertaining to reimbursement of advertising costs has been.

A more insidious source of information release is through publication by defense agencies and by their contractors of large numbers of unclassified reports and journals dealing solely with military technology. Foreign agents consider this to be the most important means to obtain valuable U.S. technology. On a monthly basis I get a copy of the ——— report entitled ———. For the month of February 1970, this report lists over ——— reports and ——— speeches and new releases purchased by Soviet Bloc personnel from the Clearinghouse for Federal Scientific and Technical Information for \$3.00 a copy or less. We know this information is of value and that its release degrades our military strength, yet it is permitted to continue.

Last year I discussed the order issued by the Chief of Naval Operations in April of 1968, which prohibited open publication of unclassified U.S. Navy technology having potential intelligence value to hostile powers. This was certainly a step in the right direction and it has resulted in improved handling of unclassified strategic information within the Navy. Unfortunately, there are still a number of activities in the Navy that do not fully follow this order and the rest of the Defense Department is, of course, not subject to it.

Over two years ago, you wrote a letter to the Secretary of Defense expressing concern over the volume of valuable U.S. military technology being disclosed in open publications and requested the Secretary's views on what could be done to stop this, particularly as to whether or not the Chief of Naval Operations order of April 18, 1968, should be applied Defense-wide. To the best of my knowledge the response to your letter was that the Defense Department had undertaken to study the problem. I do not know the current status of that undertaking, but I know of no substantive reply that has ever been made to your letter, Mr. Chairman.

I do know that your recommendation has never been implemented and I would hope that you will inquire of the Defense Department as to what action they plan to take, if any. I imagine the matter is still under study even though valuable military technology continues to be given away.

SECURITY AT SHIPYARDS

Mr. MAHON. Last year, you mentioned that the security ——— was being investigated. Can you bring us up to date on what has happened?

Admiral RICKOVER. Yes, sir. As a result of continuing problems with security ——— the Naval Ship Systems Command, at my suggestion, established a special task force to review ——— security in depth, and specify corrective actions. This task force was established in mid-1969 and has to date inspected ——— they issued a formal report that fully documents the observed security deficiencies and specifies the corrective actions that must be taken. In such case deficiencies were found, ———. The audits clearly confirmed that this area has too long been neglected by both ——— and by the Naval Ship Systems Command Headquarters.

Documentation of these security problems is now essentially complete. What is not complete is accomplishment of the corrective actions. There continues to be attempts to delay or in some cases avoid implementing the specified corrective actions.

Mr. MAHON. Why is that?

Admiral RICKOVER. Because it takes work and because in some cases it means changing an established way of doing business. To achieve effective security you inevitably cause some people inconvenience.

Some corrective actions are being taken, however, and I am hopeful that improvements will soon start to show. One area of concern is the need to ——— because of the budget stringencies, this will no doubt be difficult. I would hope, Mr. Chairman, that you would support this effort.

Such ——— I also believe it is essential that all levels of command give security their continuing attention.

Mr. MAHON. Well, I certainly want to say that it is up to the Naval Ship Systems Command to keep on top of this. They are responsible for ——— security as well as in other matters.

AGITATION IN COLLEGES

Mr. MINSHALL. You haven't touched on education yet, Admiral, and we always have at least one question on education.

What would you do about these college disruptions and riots we have been having, and the closing of some of the colleges? What would you do to stop this?

Admiral RICKOVER. You are asking me to solve a problem that has escaped solution by all of the collective wisdom of Congress and the Administration. You pay me a great honor by asking me the question, sir.

Mr. MINSHALL. I am paying you great honor. I am asking an expert.

Admiral RICKOVER. I believe that large numbers of our young people are going to college who shouldn't be there. My personal opinion is that the student demonstration in Washington this past weekend was a high point in student unrest. I think that hereafter the level of protest will be going downhill because of the law of diminishing returns.

Most of the agitation in colleges is not by students who are studying hard subjects such as engineering, mathematics, law, medicine, science, history. It is usually by those in the social sciences—a field which requires no hard study, no exact answers, and in which everyone's opinion, young or old, appears to have equal value. So when a social science professor states that his students know just as much as he does, he is undoubtedly telling the truth. Yet these are the very people who often recommend that candidates for important elective offices be examined and found fit by a panel of psychologists. One must ask, who is to select the members of the panel? By what criteria?

If you, Mr. Chairman, decide to run again for Congress in Lubbock, Texas, you would have to appear before such a group of psychologists and convince them you are mentally and temperamentally fit to run for office. So they, in effect, would decide who is to represent the people. This is what they would like.

I am sure that if you let it be known that in your opinion there should be larger appropriations for the social sciences, this would

help establish your suitability for office. I want to be serious about the educational problem. I recently read an article about the events at Kent State College. The reporter tried earnestly to discover the views of the youngsters. One is struck by their inability to express themselves, their appalling ignorance of history, or the basic principles of our Government, of the alternatives to the "democratic process". They think like infants who believe temper tantrums will secure all they wish. They have the curious notion that the campus "belongs" to them and that they are honor bound to "defend" it against the police—"pigs" is the approved term. They seem unaware that the alternative to control of lawlessness by the police is mob rule, lynching, the right of anyone to rob, injure, kill another if he is "frustrated" by the state of the world. This is adult infantilism.

Last year I testified before the House Education Committee. I believe I was the first one to point out that the concept of a sanctuary in American colleges and universities is an absurdity in this day and age. The sanctuary concept goes back to Medieval Europe when the university was between two millstones, Church and the Crown, and it had to do something to preserve its right to teach as it wanted to. This was all it was.

May I suggest, Mr. Chairman, that you include the statement I prepared for the House Education Committee in the record. It states my ideas more clearly than I do here in impromptu remarks. I would be pleased to provide a copy of it to the committee.

Mr. MAHON. Thank you, Admiral. We will put it in the record.

REMARKS ON CAMPUS UNREST PREPARED BY VICE ADMIRAL H. G. RICKOVER FOR PRESENTATION BEFORE THE SPECIAL SUBCOMMITTEE ON EDUCATION OF THE HOUSE COMMITTEE ON EDUCATION AND LABOR, MAY 22, 1969

I should like first off to disclaim any special expertise in the matter before this committee. I am a layman, albeit, one deeply concerned about the current threat to our colleges and universities. Because of the nature of my work, I am perhaps more aware of the value, indeed indispensability of these institutions. They are rightly called the finest creations of Western man. They deserve the active support of all men of good will.

We cannot allow their unique character to be destroyed by the young barbarians. Without the knowledge universities generate and the qualified professionals they produce, I do not believe this country could long remain a free nation, or for that matter even a prosperous one.

I wish it were possible for me to submit a carefully prepared and thoroughly researched statement on my views. But your invitation to appear here reached me quite recently—as you know, Madam Chairman, I was not notified formally by the Defense Department until yesterday morning that I was to appear here—and the pressure of my regular work has been such that there was simply not enough time for this.

I can offer only certain conclusions I have reached over the last few years; these are based on the factual evidence on record and on careful analyses by men whose knowledge and judgment I value—the sole sources of information open to a layman.

In recent months, thoughtful examinations of the phenomenon of student violence have steadily multiplied. To mention but a few, the writings of Irving Kristol, John R. Searle, Robert Brustein, and Sydney Hook have been illuminating, and I acknowledge my indebtedness to them.

A particularly good selection of essays can be found in the May volume of the English magazine *Encounter*. These essays are particularly useful because they bring out with admirable clarity an aspect of student lawlessness often lost sight of, but which needs to be considered by anyone searching for ways to restore order to the campus. And that is the fact that in the last few years it has become a worldwide phenomenon.

Latent in Latin America and Asia for decades, it did not engulf America and Europe until the student disorders at Berkeley in 1964, whence rebellion spread like wildfire abroad. Last year's assault on Columbia University gave added impetus.

From Berkeley rebellion spread to the Free University of Berlin; from Berlin to the London School of Economics and to Paris; from Paris to Brussels, Rome, Florence, Milan.

Informed by the mass media of events at universities throughout the world, students copy each other, so that we have a pattern of escalating violence that is remarkably uniform, despite the total absence of a unifying ideology or leadership. Any measure proving effective in one part of the Western World will almost certainly become part of the revolutionary strategy everywhere else, unless it is stopped.

What unites the small radical minority responsible for turning campuses into jungles is a common mood compounded of irrational hatred of the adult world and naive faith in their ability to replace it with a world without rules, without restrictions, without standards; where everyone's wish is instantly gratified.

The rebels number only 2 percent or so of the total student population, but they have been able to count not only on the strong generational solidarity which makes every 19-year-old—or 20- or 21-year-old—the brother of everyone else born the same year, but also on the measureless tolerance parents and other adults extend to youth—merely because it is youth.

What then is to be done about lawlessness on the campus? This is the kind of subject that has so many ramifications one easily loses his way in trying to pursue them all. Its roots spread so deeply and widely into the mores of our society that any discussion is likely to lead to recriminations and counterrecriminations ad infinitum—which get us nowhere.

I take it that you are not so much interested in what has caused these sudden and violent students outbreaks—they have been compared with the dancing mania of the Middle Ages or the tulip craze—as with practical ways of ending them. Any chance of success, I submit, rests on clear recognition that the problem has two aspects: the radical students on the one hand, and their supporters on the other.

Both here and abroad, the radicals have made it abundantly clear that they are out to destroy society in its entirety. They attack colleges and universities—as they freely admit—because these are institutions with a built-in weakness toward student violence.

In them students can operate most effectively since it is their home ground. They could not get away with attacking banks or supermarkets. Though these institutions are to them as much anathema as any other part of adult society, they are shrewd enough not to risk the swift punishment that would follow.

It should be noted, however, that the students in Frankfurt, Germany, did set fire to department stores, these being on their list of approved targets. Needless to say, they found it difficult to convince anyone of the "legitimacy" of this kind of revolutionary tactic. It was clearly an error and will presumably not become part of the international revolutionary strategy, for this depends on careful selection of targets that have some merit in the eyes of ordinarily nonrevolutionary students and parts of the faculty. Otherwise these will not play their assigned part in what has been aptly called the "revolutionary scenario". This scenario varies little and is quite simple.

Pick a grievance—humans are imperfect and hence so are their institutions—and demand that it be instantly alleviated; launch a violent attack unless the authorities submit meekly: escalate the attack until the college or university is brought to a standstill, no one is safe on campus, and the police are reluctantly called in.

This is the moment when substantial minorities of otherwise peaceable students and of faculty can be counted on to join the affray, and the victim is suddenly transformed into the aggressor. The original grievance takes second place, and the rumpus is now about academic freedom and police brutality—two burning issues to any liberal.

The whole revolutionary enterprise would collapse but for the inability of the university authorities—as well as of numerous other well-meaning adults—to reconcile themselves to the sight of police on the campus. A girl pulled kicking into a paddy wagon—a young man with blood on his face—it does not matter how viciously they have manhandled professors, how much—sometimes irreparable—damage they have done, how violently they resist arrest, the sight cannot be borne.

But is there any real difference between campus vandalism and lawlessness elsewhere? Is not criminal trespass criminal trespass anywhere—or bodily assault, or theft of personal property, or intimidation of the racketeering kind? Let no one have any illusions, the radicals play it rough.

If they don't like a particular college course, they do not simply stay away but try to close it down so no one else can attend. Pinioning the lecturer or stuffing a banana in his mouth have proved to be effective methods. If a visiting speaker is persona non grata to them, any act of violence—from shouting him, to pelting him with epithets and worse, rocking his car, et cetera—is in their eyes legitimate.

If some students band together in a conservative group it is all right to call up girl members at night and threaten them with rape. So is carting deans out of their offices like so many sacks of flour, stealing their private correspondence, vandalizing their records, breaking up student-faculty panels engaged in disciplinary hearings by shouting obscenities.

For the sake of informing the public I would like to include the litany chanted at such a panel meeting by the radical audience whenever one of the professors asked defense counsel a question about a point of law or fact. I will omit the words which were used at that session that were quite obscene.

The occasion was a disciplinary hearing at Columbia University involving a law student who had tried, together with other SDS rebels, to prevent registration for the fall semester and who had fought with a campus policeman. The SDS audience shouted:

None of this ——— about procedure. Are you cats getting off the bench or not? Murderers! Up against the wall! We want a revolution now. ——— or get off the pot.

According to the transcript, a member of the audience seized the gavel from the desk of the student-faculty tribunal and walked along the desk kicking aside the papers thereon. All this was predictable since the SDS had publicly announced it would break up the panel session.

We are constantly told that the young radicals are the most idealistic and best educated younger generation we have ever had. It needs to be shown that they are the rudest and that they are also foulmouthed. The wilder and more senseless their accusations, the filthier the epithets they hurl at college presidents, deans, and professors. Dr. Andrew Cordier, who took over the thankless task of president of Columbia from Dr. Grayson Kirk, was arraigned in mass meetings as the "murderer" of Patrice Lumumba in 1960 while Cordier was a United Nations official—an accusation quite as absurd as holding all of American society responsible for the assassination of Robert Kennedy by a recently arrived Arab youth. One of the speakers told the crowd:

The Cordier myth has been shattered; the Cordier myth is over. We're gonna say to Andrew Cordier what we said to Kirk—up against the wall ———.

Can a college or university function without the minimum of civility that is found in every viable society? Can there be any effective teaching and learning when the learners are free to fling such manifestly ridiculous accusations and such disgusting epithets at the teachers? I find it incomprehensible that college authorities continue to offer excuses for such intolerable behavior, as if it were justified by the mere fact that ours is a society with flaws—as is every other existing society in the world.

All of this is, of course, in accordance with the teaching of Professor Marcuse who feels that error has no rights, truth being absolute and residing exclusively in the radical left of his own particular persuasion, and that as he put it, "there is a natural right for oppressed and subjugated minorities to resist, to exercise unlawful methods as soon as the lawful ones become inadequate."

The student radicals—the "oppressed and subjugated minority" in this case—are thus given theoretical justification for any act of violence.

It is interesting to note that Marcuse's counterparts in Germany have recently had second thoughts. Thus, when rebellious students marched against his Institute for Sociological Studies—an institute paid for with American money—Professor Adorno accused them of being carried away by "megalomania" and lamented: "All I did was propound the theory. How could I guess that some people would want to realize it with Molotov cocktails?"

It seems to me supremely important we recognize that what goes euphemistically by the mild term of "student unrest" is violence of a kind that would

nowhere else be tolerated. That they tolerate it makes the college and university authorities accessories to criminal conduct. They are not in the position of a private owner who may—if he wishes—submit meekly when his house is burgled, his family subjected to indignities and bodily harm, preferring not to notify the police or bring court action.

College and university authorities do not personally own the classrooms, libraries, and other facilities that are being vandalized. They merely administer the property as trustees; it does not belong to them. They are strictly accountable to the owner, the corporate entity of college or university. I am no lawyer, but I feel certain a trustee has no right to decide on his own whether such property should or should not be protected by the normal processes of the law which assuredly includes calling in the police to oust trespassers. Surely, they do not have the right to decide that professors and peaceful students must bear with personal attacks in the sacred name of academic freedom.

The rioting students are engaged in criminal activities for which anyone else would be punished if caught. To catch them ought to be extremely simple. But it is hard indeed to get parents and university administrators and faculty to admit that under our system of government students have no extraterritorial status, no immunity, no privileged status before the law; that colleges and universities cannot presume to give sanctuary to lawbreakers in the name of academic freedom.

Confusion is rampant on this point. Even so prestigious a body of scholars as the faculty of Columbia University is guilty of muddled thinking. Last year, it struggled for nearly 6 months to bring out a manifesto representing some sort of consensus concerning the Columbia crisis; its title, "The University as a Sanctuary of Academic Freedom", reflects the persistence of the notion that the ordinary means open to any victim of lawless attack—the courts and the police—should not be applied to the student rebels.

It is this confusion which makes student strategy so effective. Possessed of the kind of shrewdness that enables one to plot and plan strategies to bamboozle one's intended victim, the radicals must be credited with remarkable insight into the psychology of the academic intellectual. His bent is almost instinctively toward protecting his students from the Government. Throughout the centuries government has in a sense been the natural enemy of the free inquiry and transmission of truth which is his lifework. Eight hundred years ago, when Europe invented universities, they had to establish themselves as sovereign entities against church and state in order to function at all. Extraterritoriality was then common—witness the extraterritorial rights of foreign merchants, the Hanse cities, and others. But such extraterritoriality is neither granted nor needed in modern democracies. The notion of a sanctuary for offenders is totally alien to American law, as it is to the law of all Western democracies.

The concept of sanctuary continues to have a strong hold on the academic community—on intellectuals in general. This may well be because the university is in a sense the "church" of the intellectuals, repository of their faith, power, and privilege. Consciously or otherwise, they rise to a man when the special status of their temples of learning seems to them to be jeopardized by any intrusion of Government authority on campus.

Once you examine this sanctuary concept, the preposterousness is evident. In this day and age, in a democratic society, we are being presented with the claim that no amount of lawlessness, of bodily injury, of destruction of property, of interruption of the legitimate function of the university justifies calling upon the police or the courts. Beyond this, there is the incredible assertion that Government may not attach conditions in handling out taxpayers' money to the universities or to the students—not even that they obey the law as must everyone else.

No matter how young they are, how appealing they may look to some of us, the radicals who plot and carry out the violent disturbances are lawbreakers pure and simple and should be treated as such. Whether or not they are idealists is irrelevant; whether or not they are right in branding ours a rotten society that must be destroyed is irrelevant; whether or not the changes they intend to bring about would be desirable is irrelevant. They are breaking the law of the land. And this cannot be tolerated.

As Socrates said: "Do you imagine that a State can subsist and not be overthrown, in which the decisions of law have no power, but are set aside and trampled upon by individuals?"

Socrates believed so strongly in upholding the law that when he was condemned to death for alleged impiety and corruption of the young he chose to abide by

what was clearly a miscarriage of justice instead of fleeing Athens and thus flouting the law. The stand he took has been admired for 2½ millennia, for it expresses the deep conviction of mankind that without law there can be no civilized life and that law must be evenly applied, no one being exempt.

It seems to me evident that colleges and universities need to have their backbone strengthened. They deplore violence but cannot bring themselves to use the means at hand for dealing effectively with it. They resemble President Buchanan in the interim between Lincoln's election and his assumption of office. The Union was breaking apart. Buchanan declared secession unconstitutional but could find no constitutional means to preserve the Union. Lincoln, however, persuaded the North that a state has an inherent right to preserve itself.

I believe the majority of Americans are by now convinced that the law must be upheld whether the offender is a student or not, and has given Congress a mandate to act.

You have a number of proposals for remedial legislation before you. I would urge that you disregard any that would involve the Federal Government directly with campus law enforcement. This should be left to State and local authorities. Even here we must bear in mind that the law of an eye for an eye will leave everyone blind.

On the other hand, proposals that would utilize the power unquestionably possessed by the Federal Government to attach conditions when handing out subsidies seem to me eminently desirable. For this there are numerous precedents—restriction of billboards on interstate highways comes at once to mind. Under the 1964 Civil Rights Act, colleges are required to have effective plans for achieving desegregation before they get Federal aid.

I believe it would be constitutional to require that colleges and universities submit plans for controlling campus disorders before any Federal financial help is granted them. It also seems to me constitutional and desirable to deny Federal scholarship aid to students convicted of violating the law by disruptive activities on campus.

Doubtless there will be an outcry from academia and academic freedom will be seen in grave danger. But all that such legislation would do is to say that only those who obey the law of the land will receive help from the taxpayer in the form of institutional or personal subsidies.

It is to be hoped that we will not fashion a straitjacket of academic freedom as we have done of parts of the Bill of Rights, thus rendering ourselves helpless to establish that "domestic tranquility" for which—as the preamble of the Constitution says—this Union was created.

Academic freedom in a democracy can mean no more and no less than the freedom of the professor to pursue truth wherever it leads, and to transmit it to his students; also the freedom of the student to choose the subjects he wishes to study. If he wants the authorities to grant him a degree testifying to a particular level of competence, the student must of course convince them that he has that competence.

The young radicals will grant neither the freedom of the professor to teach, nor the freedom of other students to choose courses which happen to displease the rebels. No one in modern times has violated academic freedom as senselessly and brutally in our country as have these student radicals. Why is there still such hesitation to brand their activities for what they are? And why—most paradoxically of all—do we let them escape punishment for lawless acts in the name of the very same academic freedom they are attempting to destroy?

The young, said Aristotle:

Have exalted notions, because they have not yet been humbled by life or learned its necessary limitations; moreover, their hopeful disposition makes them think themselves equal to great things—and that means having exalted notions. . . . All their mistakes are in the direction of doing things excessively and vehemently. They overdo everything—they love too much, hate too much, and the same with everything else.

It is for this eminently valid reason that the law protects minors against the consequences of their own emotional immaturity and lack of judgment, and that society protects itself by denying the vote to minors whose very youth disqualifies them to practice the art of politics. Politics, it has been rightly said:

Is only for those who are aware of its limitations, who know that radical political change may sometimes be inevitable, but that its result is often not that which their friends hope and their foes fear.

Considering the financial sacrifices made by parents and taxpayers to keep them at college or university, it seems the height of ingratitude when young people with good minds waste their time there plotting and planning revolution. If they had to work to pay the full cost of their education, some of them at least might well come to their senses.

It may be of interest that the New York State Legislature recently passed legislation requiring every college chartered by the regents or incorporated by special act of the legislature to adopt rules and regulations for maintaining order on their campuses.

The rules governing conduct are to cover students, faculty, staff, and visitors. These rules and the penalties for their infraction must be filed with the regents and commissioner of education within 90 days after enactment, which was on April 21, 1969. Failure to file such rules will result in ineligibility for any State aid until they are duly filed.

It is also of interest that in Britain, on May 15 of this year a committee appointed by the Hebdomadal Council of Oxford University brought out a report which included the following proposal on discipline. It is very much like the proposed legislation. This report said:

A clause should be included in the university statutes saying:

No junior member—the honorable name given Oxford students—

(a) engage in conduct likely to disrupt teaching or study or research or the administration of the university or to obstruct any officer or servant of the university in the performance of his duties;

(b) damage or deface any property of the university or of any college, or occupy or use the same otherwise than in accordance with the rules or other provision made therefor by the university or college authority concerned.

There are other hopeful signs that the adult world has begun to gather its wits and to stop being frightened by student "power" which would collapse speedily once the majority decided it had had enough of the lawlessness in the name of a vision of society that has nowhere on earth ever existed. The young revolutionaries know so little history and economics that they believe this vision would appear at once if only the present "rotten" adult world were smashed to bits. They act as if they had direct access to revealed truths.

Yet they have no practical plan for the utopian society of their dreams—where men are to be truly free and equal and there will be no war, no poverty, no frustration of the full expansion of the ego, and "participation" will be universal.

That these are very old dreams, and no revolution has brought us a step nearer to them they do not seem to know or to wish to know. As for their ideas about colleges and universities, these are equally hallucinatory. They want them to be open to all yet unconnected with the Government. Who then is to pay the bills? For bright youngsters, they are fantastically confused as to the nature and purpose of higher education.

Take the demand recently made that Columbia University admit all graduates of four neighborhood high schools, even as Rutgers was forced to do. Does anyone gain anything by transforming a great national university with a long and honorable tradition of scholarship into a continuation high school for youngsters who cannot even meet college standards?

Or take the demand for a voice in choosing professors and setting the curriculum. Dr. Barzun has pointed out that if students were capable of discharging this responsibility, the students would not need to attend college or university; their education would already be complete.

Perhaps the confusion of the students should not surprise us. We are now reaping the fruits of two generations of progressive education with its dogma of democratic equality and the right of children to determine their own educational program.

The progressive notion that the school is society in miniature has been carried through elementary and high school, and has now reached college, and doubtless will invade the graduate university in due time. It is this notion that leads to deprecation of authority based on competence and membership based on special talent—both indispensable if higher education is to be more than a stretchout of common schooling.

It is part of the essential character of a university that both its faculty and its students belong to the relatively small minority of the highly intelligent; and this, too, is true of liberal arts colleges preparing students for entry into graduate levels of higher education. Their very nature and the task they are

expected to perform makes them minority institutions, as are opera companies, symphony orchestras, ballet ensembles, Olympic teams; in fact, any organization operating at the summit of human capabilities.

Nearly everyone can sing a little or play an instrument of some kind, or dance or ski or swim or run. But few qualify for admission to the elite institutions where top performance in these fields is expected. So, too, every normal child, properly taught, is able to complete an education that makes him literate and numerate and gives him mastery of the elements of learning so that he can function on his own in today's complex society. But not all can absorb enough post-elementary education and specialized training to become skilled workers, technicians, or semiprofessionals. And only a minority have the requisite intelligence for academic studies.

Blame nature for this. No species is as diversified in talent as man. There is no way to enforce equality except to depress everyone to the lowest denominator. It hardly needs saying that this way lies madness and eternal conflict, for the able will not buckle under, no matter how greatly they may be outnumbered by those bent on leveling all to a gray mediocrity.

Let me say a word about the ROTC. It would be nice to do without it as it would be pleasant indeed if we lived in the dream world of the student radicals where there is no war and therefore no need for a military establishment. But in the real world of today, unilateral disarmament means national suicide unless there is a strong ally ready to fight our wars for us—as Europe now possesses in America.

Our potential enemies have never confused peace with pacifism. They are formidable in their military strength. In Russia, ROTC begins in high school. Theirs is a citizen army like ours. Their draft is stricter and no one burns his card.

Could we counter them with a volunteer army? I think not. But there is another point worth considering which was expressed by Lt. Gen. Sir William F. Butler, K.C.B., who had a lifetime of experience in waging wars in many lands and under many different circumstances.

"The nation," he said, "that will insist on drawing a broad line of demarcation between the fighting man and the thinking man is liable to find its fighting done by fools and its thinking done by cowards."

And our own Gen. William C. Westmoreland said: "It would be a disaster to have our men lead by ignoramuses. It is essential to have the ROTC continue to turn out the type of educated officers we need."

No one forces the radical students to join the ROTC and we make it quite easy for them to escape military service entirely. The least we can expect of them is to let others serve their country if they so wish.

I recollect having read recently that some American student troublemakers were requested to leave the University of Jerusalem. Israeli students asked why they did not emulate rioting students in America and elsewhere in Europe, are said to have replied: "We must win a war; we have a nation to build. We must first learn or we will not be able to do either."

I regret to say that something not unlike this spirit seems to animate the Russian universities. An NBC commentator recently reported interviewing American students enrolled at Moscow University; they were unanimous in reporting that Russian students appreciated the opportunity to study and would not—even if this were possible in a police state—be inclined to engage in the rioting that is becoming part of the college life in the affluent West. Possibly this is so because, contrary to all expectations, family life seems to be stronger there than here.

It has been remarked that ours is "a generation with little respect for its elders and less patience for those ordinary 'facts of life' that men reared in less affluent and knowledgeable times are apt to accept with varying degrees of cynicism or sadness. It takes a little exposure of today's young people to see that there is in them little of the tragic sense of life, of that long history of struggle and failure and renewal that is the story of mankind."

They do not comprehend that there is no excellence without difficulty.

Our students constantly speak of the need of love and empathy, but they show mighty little love and understanding for their parents whom they judge by faultless moral criteria, never applied to their own behavior. Parents may have erred in spoiling them but they did so out of a natural desire to make them happy. This must be the first generation in history where a substantial minority does not honor its parents.

Let me end by reiterating once more that we must not allow the university to be destroyed. We can go a long way in opening up new institutions for those of modest intellectual ability; we can call them colleges and universities to build up the ego of their students, and we can hand out large beautifully engraved academic diplomas for non-academic work. We can build them elegant dormitories and lovely campuses and let them choose their teachers and courses, hoping that they will learn something. But we must not—in the name of equality or anything else—reduce existing institutions to the level of continuation high schools.

If there is one lesson I have learned it is that when you are confronted by a difficult problem one sure way to help solve it, is to minimize the problem. I would urge our colleges and universities to simplify the disciplinary problem by turning all housing, catering, athletics, and other nonacademic services over to a separate organization thus becoming pure teaching and research institutions. Considerable "participation" in running this separate organization could then be safely granted the students.

But let us not permit our great universities and liberal art colleges to be turned into a shambles, as happened to the Free University of Berlin. We cannot do without the knowledge they generate and the professionals they produce.

CAMPUSES ARE NOT SANCTUARIES

Admiral RICKOVER. I see no evidence that the American public wishes campuses to be sanctuaries where the law of the land does not obtain. There has been a great failure of college administrators to recognize that students, like everyone else, are bound by the law; that the faculty and administration have no authority to declare the campus extra-territorial. The law is the law for everyone, *everywhere* in the country, *including college campuses*.

When college students hurl rocks and other things at the National Guard they are engaging in violence and must accept the likelihood of being hurt. Most National Guardsmen are as young as the student rioters. It is a strange double standard when we expect them to "take" lawless aggression and not hit back when threatened by a mob.

Listening to the confused and ill-informed arguments of the student revolutionaries, one sees that this is a sort of children's crusade—a children's crusade paid for by the parents.

Mr. RHODES. Isn't there a problem with the faculties though?

Admiral RICKOVER. Yes, sir, we do have a problem with them.

Mr. RHODES. Dr. Hayakawa said he could take care of the students but he couldn't take care of the faculties. What will we do about that?

Admiral RICKOVER. You must remember that many of the faculty are also young people who have been brought up in this permissive age. They are the second generation raised in a permissive educational system where everybody must get immediate gratification and nobody is held to a standard. We reap today the consequences of more than 50 years of progressive education, foisted on us by social scientists. Their notions of raising the young strike me as contrary to the laws of nature—no less. Consider the way animals train their young to cope with life. We might learn something from them; after all, we are part animal. The parents teach, the young learn. And after a reasonable time, the young are expected to fend for themselves. But our young today expect to be supported for years on end, yet to feel free to waste their learning time on whatever strikes their fancy as being "relevant" and accepted by their "peer group."

Our young people now mature earlier and, on account of good food, are healthier. Yet in the name of equality, they must—regardless of their ability—all have a chance at college if they so want. Many of

them should not be in college but out earning their livelihood. Congress supports all kinds of educational ventures, good and bad. I doubt you are doing either students or the country any good by financing college for those not seriously concerned with higher education. I fear you do them harm.

SCHOOLS DO NOT TEACH

So, too, at the elementary and secondary levels. Take the District of Columbia. Recently I read an article about some schools in the District which are subsidized by the Federal Government, where the children come to school any time they want, where they can go to any class they want, where they sit on the floor with their teachers and converse with them on whatever subject interests them at the moment. The school glories in not holding the children to any timetable; yet children must be taught that modern society works by the clock. All industry, every activity today works by clock. You catch a bus by the clock. You have to get up in time so you won't miss it. You come to work on time. Yet here are children who have not had the advantage of good home backgrounds, and instead of the school taking over and trying to make up for this, they encourage habits that modern life does not tolerate.

Now, what schools like that are doing is to write those kids off, casting them out. By permitting this sort of thing to go on—and Congress appropriates money for it—you are really doing something most harmful to these children.

Mr. MINSHALL. How would you stop it then?

Admiral RICKOVER. Well, what do you do where the health of a child is involved? There have been numerous cases before the courts where some religious group does not believe in the kind of medical attention the majority believes in. The courts have always ruled that parents have no right to deny their children standard medical attention. The courts have always so ruled. But what are you permitting to go on in these schools.

You are permitting anyone with any half-baked idea to come in and teach these children whatever he wants to, and you are appropriating money for it.

I think you have to put your fist down and say, "If we appropriate money, it has got to be for what society in general thinks is best for our children. We will not appropriate money to permit any Tom, Dick, or Jane to experiment on them. These children are our wards, and we will not let them be harmed mentally any more than we permit them to be harmed physically."

I don't know if you have ever thought of it that way, that you are just casting these children away. When you permit them these "liberties," you are in effect casting them out of society, and no one wants that for his child.

The younger generation may not be any smarter. But it is our responsibility to come up with an educational system that doesn't make it any dumber.

You are permitting all manner of unqualified "teachers" to experiment with the minds, the habits, and the future of our children. And I believe that irreparable harm is being done to them. The children are immature and must be taught that life requires effort, even pain.

Instead, they are being taught that life is all fun and games. They will have to pay for this in future years and many who could have become self-supporting, respectable citizens will grow up believing that society owes them a living; they will also become a burden to the society that tolerates and pays schools that fail to "educate" them to function in the world as it is. Their lives are not likely to be happy. You may be doing this with all good intentions; you may have political pressures on you but I think there comes a time when you ought not to give in to such political pressures.

LIFE'S CALLING IS TO WORK

I believe that the meaning of Genesis 3:19 should be taught to our children; that it remains valid for them today if they are to become worthy and happy human beings. Adam heard the voice of God walking in the garden in the cool of the day, he heard it say: "In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken: for dust thou art, and unto dust shalt thou return."

One should work and work hard, and that work, in the sweat of one's brain as well as of one's face, is a proper, even a noble, occupation for all the sons of Adam. My father had absorbed this tradition and instinctively obeyed it, and I had observed it and again, in my turn, instinctively obeyed it. I have always felt the urge, the necessity, to work and work hard every day of my life. I have looked upon work not so much as a duty, but as a natural function or even law of nature.

Children must be taught, to quote Goethe in "*Faust*": You can only count on the things which you earn by learning.

Mr. MINSHALL. Admiral, I had a very interesting talk—and I will be very brief, Mr. Chairman—with Dr. Ed Harrison, formerly President of the Georgia Tech University.

Admiral RICKOVER. I know him, sir.

Mr. MINSHALL. A very able, fine man. He had these problems at Georgia Tech some years back and the first thing he did was establish lines of communication with the students and put them on their various advisory councils and so forth. But he also got word out to the students that he was not going to tolerate any disruptions or violence on campus and anybody who was involved in such acts would be thrown out right now. And he further warned students not to watch this as spectators or gapers as they called them but instead to immediately go to their rooms and get away from the disruption or go to the study hall or someplace. Otherwise, they would be considered as guilty as those partaking in the actual violence themselves, and it worked.

What finally happened was that a lot of the liberal professors at Georgia Tech didn't like this action very well and they finally forced him out of the school.

Admiral RICKOVER. The faculty in many schools is very young and has also been brought up in the progressive system and they tend to sympathize with the students and at the same time get something for themselves as well. That is one thing.

UNIVERSITIES SHOULD CONCENTRATE ON ACADEMICS

Then we have the administrators. One thing I would do in administration; I would divorce the housekeeping functions of the college or university from its academic functions. If there is any one thing, in my opinion that would minimize much of the campus turmoil it is to take the dormitories, the student council buildings, the football teams, all the extraneous activities and set them up under a separate corporation to be administered by that corporation and not by the academic body that governs the college or university. One thing this would do is to show at once where the large sums of educational money go. Do they go for education or for these extraneous matters? I believe you will be surprised when you learn the facts.

Many of the issues used by the radical core to stir up student unrest have to do with the institutions' non-academic services. If you want to have dormitories, set them up to be run by this separate corporation; do not tie them in with the college or university itself. Let the college and the university be confined to teaching. Then, if the students want to have girls, or liquor, or both in their rooms, all day and all night, let someone other than the college handle that problem. Don't take up the time of faculty and administration with these extraneous matters—matters that have no relation to education.

A word about college and university presidents. So far they have been sacrosanct, but I subscribe to the theory that today in every society, every part is just about as good or bad as any other part. I don't think our university presidents have shown up any better than any other group in our society, although we had expected they would. Some of their glamor has been tarnished. The President of Yale has involved himself with an impending federal court trial in New Haven. I ask myself whether it is part of his responsibilities to see that justice is done. I cannot imagine that the trustees who appointed him to his job envisaged this extension of his official activities.

So through the President and the faculty you have the university as a whole committed to invasion into the judicial process through support of student demonstrations.

The purpose of colleges and universities is to *teach* and at the university level to engage in basic research. These are the tasks for which they have been established and for which they are financially supported. They cannot do these tasks—as the example of many Latin American and Asian universities shows—if they commit themselves as institutions to extra-legal confrontation politics under pressure of part of the student body.

The university is a corporation with limited authority. It is not an elective body accountable to the will of the people. It is not part of our political system. As individuals, its members have, of course, the rights and duties of citizens. But I doubt that any university charter gives any member the right to use the university for political ends.

Further, it is a fact that any organization engaging in activities extraneous to its purpose will serve this purpose inefficiently. The glamorous, extraneous activities will take precedence over its proper function which in the case of colleges and universities is *teaching*, and, at the graduate level, basic research.

In this connection our university authorities should ponder the long history of the politization of universities in Latin America, many

of which have been rendered ineffective in their proper sphere of competence by being made the staging area for radical attacks on government.

I see all this going on. I say to myself, well perhaps I don't understand these present tendencies. But I do know there is one lesson all mankind must learn. To have a viable society, we must have law and order. That was emphasized and exemplified by Socrates. He had the chance to escape when he had been condemned to death—the authorities were willing to let him leave Athens and go into exile. He said, "No. It is more important that the law be obeyed than to have absolute justice." Several years ago I spoke to present-day Athenians from the Hill of the Pnyx, from the very spot where Socrates was tried and found guilty—unjustly so, as history holds. Therefore, I make this observation about law and order with some personal feeling.

I think society must have order if it is to continue. You cannot tolerate these groups pulling away at society all the time. You cannot throw away the "democratic process" in favor on confrontation politics.

Mr. ANDREWS. How about that old adage, Admiral, "spare the rod and spoil the child?"

Admiral RICKOVER. You apparently haven't the latest books on child upbringing. Nowadays, one year the books tell mothers to feed their babies by the bottle and spank them; next year they are instructed to feed them at the breast and never say "no" to them. Take your choice.

Mr. RHODES. Isn't this the Spock generation.

Admiral RICKOVER. It has been called that. Not only the Spock but others. Babies are appealing little creatures but, truth to say, barbarian, self-centered, and the world's worst tyrants if you let them have their way. Raising them means guiding them toward more mature and responsible conduct. I was like that; I don't know about you though.

Mr. RHODES. I wasn't. There is no doubt about that.

Mr. MINSHALL. He waited until he got to Congress.

Mr. MAHON. Off the record.

(Discussion off the record.)

SERVICE ACADEMIES

Mr. MINSHALL. Admiral, do you see a need to change the role of the service academies in the years ahead?

Admiral RICKOVER. No, sir, not their *role*. The role of our federally supported service academies, as it has always been, is to produce officers capable of defending the United States. However, as I have testified on numerous occasions, I do not believe they are adequately preparing our young men to do this. I can see changes being made teaching more and more of the humanities and management and less capable than they are now to do their jobs.

INADEQUATE TECHNICAL EDUCATION AT NAVAL ACADEMY

I will restrict my observations to the Navy alone because it is there I can see and know what is going on. Since World War II the Navy has become dependent on the use of highly technical equipment. This is true for ships, aircraft, weapons, sonar, radar, and the like. The

high degree of sophistication of these equipments require both officers and men to be highly competent in their ability not only to operate and to maintain this equipment but also to understand the implications of their use. Unfortunately I find the Naval Academy teaching more and more of the humanities and management and less of engineering and science. If we keep this up, we will have a Navy composed of officers who are capable of reciting Portuguese sonnets while standing on the bridge of a ship that can't get underway because its machinery won't operate, and whose missiles won't fire because the guidance systems aren't working. You may think this is funny but there is some wry truth in what I say.

Today the trend at the Naval Academy is to permit midshipmen almost complete freedom in selecting the courses they will take. The Academy in turn provides more and more courses which are irrelevant to the needs of a naval officer—courses such as Computer Systems Management where a midshipman learns how to plan and procure a computer system under Department of Defense rules. That subject in itself is not so bad if the midshipmen were also learning the things he will need to be an effective naval officer.

And yet when I once interviewed a midshipman whose major was in Portuguese, he could not answer who Camoens was, nor identify the *Lusiads*.

Let me make it quite clear that I am not advocating that a midshipman study no humanity subjects. I do maintain that a midshipman today and in the future must be well-grounded in science and engineering if he is to do his job. I also maintain that a young midshipman is not capable of deciding on his own what courses he should take to satisfy the needs of the Navy. This would be analogous to a medical student being given the freedom to take whatever courses were offered in a university just so long as he received the required number of credits.

NAVY NOT COPING WITH TECHNICAL COMPLEXITIES

If I saw our ships being operated proficiently; if I saw our equipment being maintained in good shape; if I saw a true professional navy officer corps, I would not complain. But I don't see this; I see just the opposite. I see more and more young officers and men leaving the Navy because of dissatisfaction. In my opinion much of this dissatisfaction stems from the lack of professionalism. Young officers are not taught the necessary tools of their trade; they see superiors who are not capable of coping with the highly technical aspects of their job and they soon become disillusioned and dissatisfied.

They naturally turn to avenues of escape such as obtaining post-graduate education in esoteric subjects as international relations, management, systems analysis, oceanography, etc. These are programs which contribute to the officers' eventual resignation from the Navy. The enlisted men also see this clearly and soon conclude that they are not in an organization where technical competence is expected or required. One result is that smart young enlisted men are also leaving the Navy. In my opinion, this entire cycle starts at the Naval Academy; from what I can see it is steadily growing worse, not better.

While all this is happening, the adumbrations from the Naval Academy administration profess the opposite. Claims of increased pro-

fessionalism are "substantiated" with examples of more courses in leadership, management, system analysis, etc.

In the course of my duties I interview each year hundreds of first-class midshipman and graduating students from civilian colleges for entry into the nuclear propulsion program. I have done this for ten years. Based on these interviews and the record of performance of these men during the one-year nuclear power training program I conduct, it is clear to me what is happening:

POOR PERFORMANCE BY NAVAL ACADEMY GRADUATES

First of all, I see the Naval Academy midshipman being less mature than his counterpart from civilian colleges. I attribute this immaturity to the way midshipman are being treated at the Naval Academy. In contrast to the so-called academic freedom they are being given, their non-academic life is over-regimented to the point that after four years they are less capable of mature judgment than their civilian counterparts. They have been subjected to an over-dose of stereotyped and sophomoric "leadership". They have been taught that all problems can be solved by memorizing a few simple rules of management. They have not been taught that the essence of leadership is first and foremost to know your job.

Second, I find that the graduates of the Naval Academy generally have more trouble academically passing our courses in the nuclear power-training program than do those from civilian colleges. This is particularly disturbing because you would think that the Navy should be better capable of training a midshipman to handle such courses than a civilian college where there is considerably more academic freedom. After all, the taxpayer is paying a great deal of money to educate a Naval Academy midshipman—about 10 times as much as it costs the government at a civilian college—and if that system does not provide the nation with a better naval officer, something is wrong.

The comments I am making are not new; I have made them many times in the past. Sometimes people have countered my views by pointing out that each year Congress has a Board of Visitors that looks into the affairs of the Academy, and that their reports have little but glowing praise. Each year I carefully study these reports and I find they are based almost entirely on information supplied by the Academy officials. Congress is being told just what the administrators want them to be told. The members of the Board of Visitors are intelligent and well-meaning. However, they are extremely busy and cannot devote the time it takes to dig beneath the surface to find out what is really going on. As long as the Naval Academy remains a choice tourist attraction, a good showplace for parents and alumni—as long as it remains an island, akin to a monument, which can be pointed to with national pride, it will survive casual congressional or other scrutiny. It is obvious that the general public does not know whether the education the midshipmen have been given serves the real purpose of the Navy.

NAVY POST GRADUATE EDUCATION

In this same connection I earlier mentioned post-graduate education given by the Navy. This is another subject that needs to be looked into to find out if it also is serving the need for which it was originally

created. There is no question whatsoever that today post-graduate education is being used primarily as a device to retain officers in the Navy. The facts and statistics can support no other conclusions. In the past, post-graduate education was provided by the Navy to officers who had completed several years of sea-duty and whose academic background and performance warranted the expense and effort of additional formal education. Courses were offered in subjects relating directly to the needs of the Navy, courses where officers possessing such additional education were required to operate the Fleet. Today this has all gone by the board. The requirements a naval officer must meet today to be eligible for post-graduate education are so lax that anyone can apply and be accepted. As you know, the Navy's post-graduate program is run in conjunction with a number of civilian colleges. If a naval officer applies for post-graduate education at one of these civilian colleges, there is no assurance he will be academically acceptable. If he is not, and many fall into this category, the Navy solves the problem by sending him to its own post-graduate school at Monterey, California.

POST-GRADUATE EDUCATION CAREER REQUIREMENT

Post-graduate education in the Navy has become another milestone or "requirement" in the career advancement of all naval officers. Present naval personnel policy expects every officer to have attended post-graduate school before he reaches the rank of Lieutenant Commander. It makes no difference if the individual officer wants it or not—he is expected to program post-graduate schooling into his selection of duties. This means that attending the school becomes a necessity. For those whose duties do not permit attending the post-graduate school, it means a black mark, a hindrance to promotion. This is what has happened in the nuclear submarine program.

Due to the scarcity of young officers qualified in nuclear submarines, it has not been possible to provide all of them the opportunity to attend post-graduate school. These officers are at the top in the Navy academically and are far better qualified to pursue post-graduate study than any other group of naval officers. But, as I said, it is not possible to send many of them to school because their services are vitally needed to man the nuclear ships. However, since the Navy has set a quota for the PG school, it assigns officers of lower caliber to the school. The mere fact that the lesser-qualified officers have attended PG school makes their records look better. It also makes no difference whatsoever what degree the officer gets—it has no bearing on what he has done or will do subsequently in the Navy. A number of studies have been made on this; they show that most of the graduate studies have little relation to the needs of the Navy; that they are mostly useful in preparing the young officer to *leave* the Navy.

I should point out that this graduate education is not cheap. It costs the taxpayer a total of over \$70 million a year to provide it to naval officers and to those in the other services. It amounts to \$16,000 to \$22,000 per year per officer—exclusive of his pay and allowances.

In my opinion few jobs in the Navy require a graduate degree. There are some, but I would generously estimate this to be less than 10 percent of what we now provide.

I have talked with many officers who have attended these schools. They all say they enjoyed the opportunity for two or more years away

from their work. But they admit they didn't learn very much that is of use to them in the Navy.

If a graduate degree is necessary as a prestige item then I suggest you authorize the Naval Academy to grant every graduate a masters or even a doctors degree immediately upon graduation. At any rate it will have about as much merit or prestige as a Masters Degree from the post-graduate school at Monterey has today; it would cost much less and would serve the Navy's needs just about as well.

I feel that the whole subject of the handling of personnel within the Navy has not kept pace with the changes in today's highly complex ships and equipment. We are still essentially using the personnel policies of World War II in order to meet the needs of the 1970 Navy. Everyone can see the far-reaching changes in the ships and equipment, but few recognize the need to have people trained to cope with these changes. As I said earlier, we will end up with a Navy whose officers and men are socially adjusted in accordance with the latest concepts of the social scientists but with ships, planes, and weapons that do not operate properly.

DEFENSE PROCUREMENT PRACTICES

Mr. MAHON. Admiral, I have a few questions on the subject of defense contracting. In the past before this committee you have been very candid in giving us your views of what should be done to improve our defense contracting.

Admiral RICKOVER. Yes, sir. In response, I too have a question. I am beginning to question whether Congress really does want efficiency and economy in defense procurement. I question this because despite my testimony over many years pointing out serious and fundamental deficiencies in defense procurement practices, the Congress has taken little action to correct these problems. I have told you many times that you will not have improvement in defense procurement unless Congress itself takes the lead and forces the Department of Defense to improve its procurement operations. Now I put it up to Congress to do so. As I have many times, I believe very deeply that the supervisory function of Congress is just as important, perhaps more important, than its lawmaking role.

The Department of Defense could take action to resolve its own procurement problems. It certainly has the authority to do so. But my experience has been that it will not. This being so, we should be able to turn to the General Accounting Office; but I am afraid little will be done there, either. The General Accounting Office has relegated to itself relatively minor matters, in an attempt to avoid controversy. It appears unwilling to undertake important issues except at the specific request or direction of Congress.

With both the Department of Defense and the General Accounting Office essentially abdicating their responsibility in this regard, the burden must fall on Congress. Congress will have to take the initiative to see that Defense procurement practices are put on a sound, economical basis.

In the press, in Congress, practically anywhere you look, you find the military being castigated about wasteful spending. Everyone blames the military. But when you stop to think about it, who directs

defense procurement? Is it the military or is it the civilian procurement officials in the Department of Defense? I think the answer is clear. So who should be castigated—the military people who carry out policy or the civilian procurement officials who establish the policies which control military procurement? I think you should keep that question in mind, sir.

I agree that the military is inept in some areas, particularly in its assignment of personnel; we are shifting people around much more than we should. In this connection I hope that you might do something through legislation to require longer tours of duty. But the military is not responsible for inadequate Department of Defense contracting policies and procedures. Contracting is run by the civilian procurement officials in the Department of Defense.

Each year, for many years, I have pointed out fundamental deficiencies in defense procurement. Year after year, I have cited example after example of how we are being overcharged. When these matters are brought before the civilian procurement officials in the Defense Department, nothing is done. The civilian procurement officials will not oppose industry. The Pentagon's attitude toward the Truth-in-Negotiations Act is a case in point. That Act was passed by Congress to help the Department of Defense obtain the items it needs in an economical manner. Industry has always opposed it. Now I find that the law is not being observed, that it is being evaded, and defense procurement officials are not enforcing it. When I raise this issue, their answer is to deny that there is a problem. Everything is just fine.

I also pointed out serious problems caused by the lack of uniform accounting standards. Under today's accounting rules it is virtually impossible to tell how much defense equipment actually costs the manufacturer or how much profit the contractor makes in producing it unless the Government spends months reconstructing each supplier's books. Again, the response of industry and the civilian procurement officials in the Department of Defense was to deny that there was a problem. They opposed any action to establish uniform standards of accounting for defense contracts. Only now, when the feasibility of and need for uniform standards have been recognized by the General Accounting Office and the professional accounting associations, has the Department of Defense announced its grudging approval. However, the Department of Defense has taken no action to begin development and implementation of such standards for defense contracts, even though the need has been clearly shown. They seem content to wait and see what Congress will require them to do.

All of these cases fit a standard pattern. First, these high ranking officials claim there is no problem. Second, they fight corrective legislation. Third, when legislation is passed, they undermine it. And fourth, if any good comes out of the legislation, they claim the credit. Their actions have shown that they are incapable of understanding the fundamental faults in defense procurement, and too closely tied to industry to act in the government's interest.

They show maximum power with minimum responsibility; a profound reluctance to appreciate the importance and seriousness of constructive criticism. It is as if it were divinely ordained that only those who hold the position of responsibility are capable of understanding what is going on; that they are performing their duties perfectly, or

nearly so. And so the facts keep on marching in one direction and the platitudinous tangled deviations and excuses in the other.

I have pointed out that the Renegotiation Act is full of loopholes and is not effective in protecting the taxpayers' money. I have pointed out that the Government is not equipped to protect itself against large claims from suppliers. I have pointed out that the DOD's regulations are loose and outmoded and not suited for today's complex procurement. I have substantiated all these points with facts and figures from my own experience. Despite my testimony in these areas over many years, nothing is being done by the Pentagon's civilian procurement hierarchy to correct these fundamental faults. And so I ask you again: who is to blame—the military?

There has been an aversion among the "decisionmakers" in the Department of Defense to take specific action on specific problems. Every decision contains dangers, but lack of decision is even worse. They have a persistent urge to seek universal formulae with which to justify particular actions.

These officials dislike to discriminate. They want to find some general governing norm to which, in each instance, appeal can be taken so that individual decisions can be made, not on their particular merits, but automatically. They resort to directives that are more useful in protecting those who write them than in instructing those who receive them. And they cling to the word of these directives with almost religious fervor—regardless of the special circumstances of any particular situation. They are like the Moslem who said that if the Alexandrian library contained the same things as the Koran it was superfluous, and if it contained things contrary it was harmful. The entrenched forces of bureaucracies are stronger than those of kings and emperors, states and establishments, principalities and powers.

Of course, this constant resort to directive, and constant disregard of actual facts, has resulted in a general ignorance of the contracting situation among many defense procurement officials. They have been lulled into a state of sleepy unawareness; that is why I call these directives "chloroform in print".

The failure to understand the distinction between abstract principles and specific problems tends to mute action; those responsible hide behind a screen of rhetoric to hide their indecision and lack of action.

I, on the other hand, have to deal with specific situations day after day. In the course of this experience I have been made painfully aware of these issues. It is another example of the truth of Napoleon's dictum: "On s'engage et puis on voit"—One gets involved and then one sees. Procurement problems affect my ability to do my job, and they require that I spend far more time than I should on contractual rather than on technical matters. And in my daily work I find the same issues coming up again and again, repeating like a metronome. I have pointed out these issues to this Committee because they represent fundamental weaknesses in Government procurement policies and procedures. I believe that correction of the problems I have identified would not only save the taxpayers many millions of dollars but would also enable technical and project managers to spend their time on their primary technical responsibilities rather than being forced to spend valuable time on other matters because of inadequate Government contracting policies and procedures.

NEEDED IMPROVEMENTS IN CONTRACTING

Mr. MAHON. Admiral, why don't you begin by giving us your specific recommendations as to what should be done to improve defense procurement, and then discuss each recommendation in more detail.

Admiral RICKOVER. My recommendations are as follows:

1. Congress should insure that uniform standards of accounting are established as quickly as possible so that there will be a sound basis for contracting and the Government can readily identify actual cost and profits. In this regard Congress should require the Comptroller General to establish such standards within 18 months for use on all negotiated defense contracts in excess of \$100,000.

2. Congress should insist that the Department of Defense develop an effective self-appraisal program in the area of procurement. The numerous examples I have found in a limited review of two major shipyards and my experiences in procuring nuclear components indicate that the Department of Defense appraisal program has not been effective.

3. The Truth-in-Negotiations Act should be strengthened by requiring contracting officers to obtain, and contractors to provide, cost data on all contracts in excess of \$100,000 unless such contracts are awarded as formally advertised procurements. Congress should prohibit waiver of the Truth-in-Negotiations Act for contractors doing in excess of \$1 million of business with the Government annually. These contractors should be required by law to provide cost and pricing data on any negotiated procurement.

4. The Department of Defense should be required to revise the Armed Services Procurement Regulation so that procurement policies reflect the real situation wherein competition in defense procurement is the exception and not the rule. The rules of noncompetitive procurement should apply to all contracts that are not formally advertised procurements.

5. Congress should require the General Accounting Office to undertake a comprehensive review of defense procurement and contract administration. Such a review should include a critical look at the fundamental basis and assumptions of defense procurement. The General Accounting Office should get into major issues from which general principles can be developed for Government-wide improvements in procurement. This comprehensive review would be in lieu of the fragmentary approach that has characterized its efforts in the past.

6. The General Accounting Office should study the impact of the Industry Advisory Council and other industry groups on defense procurement policies and whether the interest of the public requires additional safeguards in such arrangements. The General Accounting Office should look into the interchange of personnel between industry and Government to determine whether additional legislation is needed to restrict the ability of procurement officials to represent Government and industry alternately.

7. Defense contractors should be required to report costs and profits upon completion of each order in excess of \$100,000 regardless of the type of contract. Such reports should be submitted in accordance with the uniform accounting standards and should be certified by an authorized official of the company. Criminal penalties should be provided for those who submit false or misleading data.

8. Defense procurement regulations should be revised so that return on investment is considered in establishing profits on defense contracts.

RENEGOTIATION ACT SHOULD BE STRENGTHENED

9. The Renegotiation Act should be strengthened. Specifically:
- a. Congress should make the Renegotiation Act permanent legislation. There are two reasons for this: to give the Renegotiation Board a better chance to attract competent, dedicated career Government employees of the type needed for so important a function, and to make it more difficult for industry lobbies to further weaken the act.
 - b. Contractors should be required to report costs and profits in accordance with uniform standards of cost accounting. One standard should not be used in pricing contracts and another, more lenient standard, for renegotiation. Today the Renegotiation Act provides that contractors report their costs and profits in accordance with Internal Revenue Service rules. Such rules are inappropriate for this purpose because they have nothing to do with the way the contractor assigns costs and profits to Government or to non-Government work.
 - c. Detailed Government audits of contractor reports of costs and profits should be carried out rather than accepting contractor cost-and-profit statements at face value as is the present practice.
 - d. The Renegotiation Act should require renegotiation of contracts by individual commodity groupings—as the groupings described by the Federal supply catalog—rather than basing renegotiation on total company sales. This would help prevent large corporations from hiding excessive profits in the average figures they report to the Renegotiation Board.
 - e. Congress should eliminate the “special interest exemptions” such as the “standard commercial article” exemption, the “durable production equipment” exemption, the “personal services” exemption, the “stock item” exemption, and other exemptions which give preferred status under the act to certain special interest groups. Elimination of these exemptions would insure more equitable treatment of all firms and would expose to renegotiation many articles for which the probability of excess profits is high.
 - f. The operations of the Renegotiation Board should be thoroughly reviewed by an agency such as the General Accounting Office. The agency should be given authority to look into all areas and aspects of the Board’s operations, including its dealings with Government contractors. The review should establish proper manning levels and the organization necessary for the Board to carry out its responsibilities effectively.
 - g. The Renegotiation Board should be required to report in greater detail to Congress. Reports to Congress should include a listing of firms filing with the Renegotiation Board together with the total amount of Government sales each does, the total amount of its renegotiated sales, and lists of items that qualify as an exemption under existing legislation. Also, the Board should provide Congress a list of contractors found to have made excess profits in the past year, and the amount of such excess.

h. The status of the Renegotiation Board should be enhanced so that it will be able to operate freely and independently of outside pressures. The Renegotiation Board should be given status comparable to an independent regulatory agency. Board members should be given long-term appointments. The Chairman should have a statutory 15-year appointment similar to that of the Comptroller General of the United States. In order to carry out its duties, the Renegotiation Board should be insulated from outside political considerations. As it is now, Board members are subject to removal from office at any time.

i. *Nolo contendere* pleas or consent decrees should not be allowed in cases where contractors have submitted false or misleading cost or profit information to the Renegotiation Board. Those charged with violations of the law should either be found guilty or not guilty.

Defense procurement regulations should be modified to prohibit any payment of contractor independent research and development costs except where the Department of Defense contracts directly with a contractor for that portion of his independent research and development program which the Government chooses to support as being directly beneficial to defense work. All other contractor research and development work should not be allowed as cost on Government contracts. Such work should be paid from profits.

UNIFORM COST ACCOUNTING STANDARDS

Mr. MAHON. Admiral Rickover, you have stated that a considerable amount of money could be saved by the Department of Defense by establishing uniform cost accounting standards.

Admiral RICKOVER. Yes, sir. For many years now, I have testified to Congress that the lack of uniform accounting standards is the most serious deficiency in defense procurement. Since nearly all defense procurement involves little or no real competition, cost becomes the primary consideration in determining how much the Government pays for defense equipment. The Government, however, must rely on contractor cost estimates and cost records in pricing its contracts. Here the Government encounters great difficulty because contractors may account for costs in almost any manner they choose. As a result, under today's accounting rules, it is virtually impossible to tell how much defense equipment actually costs the manufacturer or how much profit contractors make in producing it—unless the Government spends months reconstructing each supplier's books.

The lack of uniform accounting standards militates against economy in defense procurement. Accurate cost information is seldom quickly available for use in making timely decisions. Costs cannot be relied upon as a measure for use in making timely decisions. Costs cannot be relied upon as a measure of contractor efficiency because of differences in accounting practices. Contractors often account differently from one contract to the next—or between Government and commercial work—or between cost type and fixed-price contracts. Costs on some contracts are not considered as costs on other contracts. Contractors can price contracts under one accounting system, yet charge costs under a different accounting system.

On most defense contracts there is no requirement that the contractor keep meaningful cost records. Under these circumstances it becomes virtually impossible to determine true costs. Based on my testimony over the past five to six years, Congress, in 1968, took the initiative and enacted a law which required that the General Accounting Office study the feasibility of establishing uniform cost accounting standards for all negotiated defense contracts in excess of \$100,000. The Department of Defense, the General Accounting Office, the defense industry associations, and the professional accounting associations opposed such a study. Nonetheless, Congress passed the law and the General Accounting Office conducted the study.

In January, 1970, the General Accounting Office issued a report; its affirmative conclusion was that uniform accounting standards are both feasible and necessary.

LOBBYISTS ATTEMPT TO WEAKEN STANDARDS

The Department of Defense and professional accounting associations have now conceded that such standards should be established. The Senate Banking and Currency Committee presently is considering legislation to require that the General Accounting Office establish uniform cost accounting standards for negotiated defense contracts in excess of \$100,000. Defense industry associations are, of course, still lobbying extensively in opposition to uniform cost accounting standards. However, in view of the General Accounting Office report, the industry lobbying tactics are now directed towards incorporating loopholes or escape clauses to weaken the proposed legislation, much as the Renegotiation Act and other protective legislation has been emasculated. I am concerned that this extensive effort by defense industry may result in meaningless or watered-down legislation.

One of industry's major points has been that the standards themselves should be established by a commission with heavy representation from defense industry officials and their accountants. It is argued that only industry can do an effective job of creating appropriate standards, because no one else is familiar with the problems of accounting for defense contracts. This argument, of course, ignores the fact that a commission of industry officials would have an obvious interest in making the standards as weak as possible. Further, the argument brings to mind a famous comment by Sir James Stephen.

In the British Parliament in 1831 Sir James answered the contention that slave owners would be the best authors of legislation proposed to ameliorate the condition of the slaves in the crown colonies of Trinidad, St. Lucia, and Demerara. He said: "It is one of the inveterate illusions under which the resident West India Body labours, to suppose this proximity of observation an infallible and necessary guide to sound conclusions."

This legislation will be an interesting test to see if the Congress is really serious about economy in defense procurement, or whether it is merely cheerleading.

Mr. Chairman, Congress, the President, and the Defense Department are constantly exhorting us and cheerleading us to be more efficient and more competent. This is rhetoric, of course. You know the pen is mightier than the sword, that rhetoric is more powerful than action.

We hear, day in and day out, that we ought to be more efficient. This is like drawing water in a sieve. You cannot cheerlead people into improving their efficiency. The only way you can improve contracting is to shun cheerleading and require those responsible to perform their duties effectively—to cease getting by merely by exhorting their subordinates to do better and to start penalizing those, high and low, who do not perform their duties properly.

DEFENSE DEPARTMENT RELUCTANT TO ACT

Mr. MAHON. Admiral, let me ask another question about accounting standards. You have said this is something Congress should do and cannot expect the Department of Defense to do it. How do you explain the Defense Department's reluctance to act?

Admiral RICKOVER. The Department of Defense is in the same situation the British Navy was in the early 1700's. They found they had to shoot an admiral once in a while to keep the Royal Navy efficient. I think that is what you might do with the Department of Defense. Once in awhile you might impeach an official of the Department of Defense for not doing his job. I believe this would have a very salutary effect on defense management—particularly on those who remain in office.

Of course, impeachment is too time-consuming a proposition. You would have the House tied up impeaching him, and you would have the Senate tied up in trying him. You cannot do that.

But the history of defense procurement in this country has been a series of complaints about overcharging on defense contracts. George Washington himself wrote about profiteering in the Revolutionary War. We had it in the War of 1812. We had it in the Mexican War. We have all read of the contracting scandals in the Civil War. You remember the steel scandals of the War of 1898 which resulted in the first Federal legislation specifically intended to regulate war profiteering. Congress finally recognized it could not depend on the executive agencies to do this job and enacted laws to take care of overcharging.

The initiative came from Congress, not the executive. The fact that you set up the General Accounting Office is an illustration. Congress set up that Office for this same very reason—to investigate public spending and make recommendations looking to greater economy and efficiency in public expenditures.

Congress had no trouble during World War II in setting up a Renegotiation Board—a Board with teeth in it. But today the Board has been so denuded of power that it has become a weak reed; it is no longer effectively carrying out its purpose.

I say with as strong a conviction as I can, if Congress does not take the lead and require by law the establishment and implementation of uniform cost-accounting standards for defense contracts, economy in defense contracting cannot be achieved.

Now, if you do not do so, then I think it is time for members of Congress to stop holding hearings, making speeches, and exhorting the military to be more efficient. The military cannot be more efficient or more economical unless Congress gives us the tools to do the job.

LACK OF COMPETITION

Mr. MAHON. There is always a lot of talk about getting more competitive in defense contracting. Has there been any significant progress in that regard?

Admiral RICKOVER. No, sir. Not really. And, I do not expect to see much more competition in defense contracting.

The very nature of the equipment being produced for the Department of Defense and the large investment in technology and production facilities to do the work for the most part preclude effective competition in procuring complex defense equipment.

The real problem is the Defense Department's unwillingness to face up to the lack of competition in defense procurement and take the necessary steps to protect itself and the public against overcharging. In 1969 the Department of Defense spent over \$40 billion for military procurement. Of this, \$36 billion was spent in negotiated procurement. Negotiated procurement means that the bidding is limited to a very small number of firms—often only one. More than half the \$36 billion was sole source procurement.

"COMPETITIVE NEGOTIATED" CONTRACTS

The Department of Defense categorizes nearly all the rest of its negotiated procurements as "competitive-negotiated" contracts. In competitive-negotiated procurements, the Department of Defense can select which firms may bid on the contract, and then award the contract based on the bids received, as if it were a formally advertised procurement.

Competitive-negotiated procurements enjoy the simplicity of formally advertised procurements without having to bother with the safeguards that protect the Government in non-competitive procurements. For example, contractors under the competitive-negotiated procedures, do not have to provide cost and pricing data required by the Truth-in-Negotiations Act. There are virtually no pricing safeguards in these procurements.

True competition in defense procurement is the exception, not the rule. Because of the highly complex technology and expensive facilities required for weapons production, it is difficult for new firms to obtain major defense contracts. Moreover, on major weapons programs, the Department of Defense can sustain only one or two suppliers for a particular weapon. This is why the Defense Department is tied to a small number of contractors for the major portion of its equipment, regardless of their efficiency or pricing policies. The competition obtained among two or three large defense contractors does not ensure reasonable prices.

Despite this situation, defense procurement regulations are primarily oriented toward treating most defense procurements as competitive. Contracts for major weapons often are handled as if the Defense Department were buying bread or flour instead of complex defense equipment that only one, or two, or at most three giant corporations can produce. Such actions are not conducive to an efficient and economical defense effort. I believe the rules for non-competitive

procurement should be applied to all contracts that are not formally advertised.

Here again, Congressional attention will be necessary to effect the necessary changes in the regulations. It is next to impossible to change the Pentagon's procedures from within. The DOD contracting system seems ideally designed to resist change. It succeeds in combining the rigidity of military service and the fragmentation of small business, without either the centralized authority than can make the military move or the initiative and flexibility of response of the innovative entrepreneur.

Not only are major defense contracts awarded and priced as if there were true competition, the contracts are also administered on that basis. The Department of Defense has adopted a policy whereby Government personnel tend to rely on the contractor himself and alone to act always in the Government's best interest. As a result, in many large defense plants you will find that Government officials charged with responsibility for surveillance and administration of defense contracts do not exercise effective checks on the contractor to ensure that he is managing the job properly, procuring materials economically, operating efficiently, controlling costs, and so on. This policy is applied even in situations where Government business absorbs all or nearly all of the costs the contractor incurs.

SHIPBUILDING CONTRACTS AND COST CONTROLS

Mr. MAHON. Admiral, several weeks ago Jack Anderson in the Washington Post mentioned a report that you apparently issued concerning accounting and procurement problems at a large shipyard. Is this report available to this committee?

Admiral RICKOVER. Yes, sir. That report has been published in connection with the House Government Operations Committee's recent hearings concerning the Renegotiation Board.

Mr. MAHON. Would you mind telling us how this situation came to light?

Admiral RICKOVER. No, sir.

About a year and half ago I decided to look into how Navy shipbuilding contracts were being administered—to see if anything could be done to slow the constantly rising costs of Navy shipbuilding programs. I sent two of my people to one major shipyard for two weeks. They found that although more than ninety percent of the work in this yard was being charged to Government contracts, there was no effective Government surveillance of the contractor's procurement or cost control operations.

The shipyard had no effective means of cost control. In fact, effective cost control was impossible under the shipyard's system. Moreover, Government representatives were being denied access to portions of the contractor's financial books and records essential to determining the reasonableness of costs charged to the Government.

There was no effective surveillance of the procurement function, either. The contractor could place subcontracts of any dollar amount without prior review and approval by the Government, even in cases where the costs were passed on directly to the Government. The shipyard relied extensively on sole source subcontracts, but had not been complying with the Truth-in-Negotiations Act. There was little or no

shipyard justification of the prices paid to its suppliers. All this was going on in the presence of Government representatives who were supposed to be administering the Government's contracts.

Mr. MAHON. Weren't they checking the procurements?

Admiral RICKOVER. No, sir. Under Department of Defense rules, if a contractor has an "approved" purchasing system—which most of them do—the Government contract administrators do not review and approve subcontracts awarded by a defense contractor, regardless of amount. Despite the major deficiencies my people found at this shipyard, the contractor's purchasing system had been approved by Government representatives—in fact, the Navy had commended the contractor for its purchasing system!

In this situation, the contractor had no incentive nor does he yet have any, to work hard to lower his costs. This problem is not unique to shipbuilding. When competition is limited, as it is in shipbuilding and most other defense industry, the contractor who increases his efficiency may, in the long run, under the present system of determining profit as a percentage of estimated costs, actually lose profit. For example, if it costs \$100 to do a job and the contractor gets a 10-percent profit, he earns \$10. If he reduces the cost to \$90, he will get only a \$9 profit. In defense business, the higher the cost, the more profit he makes. So he has no incentive to invest in new machine tools and in other facilities which would make defense work more efficient and less costly. Thus, from the taxpayers' standpoint, the present system provides exactly the wrong incentive to contractors.

I sent one of my people to another shipyard. He found the same sort of problems. The contractor's Government-approved purchasing system did not ensure the lowest prices to the Government. There was excessive and unwarranted sole source procurement. About 60 percent of the shipyard's procurements were sole source. Even ship furniture was procured on a sole source basis. The contractor was not implementing the Truth-in-Negotiations Act. His purchasing people did not seem to be indoctrinated in its requirements. Often there was no justification for the prices paid.

There were numerous other deficiencies. The contractor did not handle competitive procurements in accordance with formal bid procedures. He was making large procurements from other divisions of the parent corporation without the Government's prior knowledge or approval. There had been no verification by the Government that the charges by the other divisions were reasonable and proper.

There was a noticeable double standard for contracting. The president of the shipyard could not approve a procurement over \$10,000 if corporate funds were involved. He had to get approval from his corporate headquarters. However, if Government funds were involved, any supervisor in the purchasing department could approve a procurement up to \$250,000.

Ninety-eight percent of the work at this shipyard is under Government contracts. About half of this work is under cost-type contracts under which the Government reimburses the contractor in full for his actual costs. The other half of the Government work had been awarded in situations where the shipyard was either a sole source supplier or where there was little or no effective competition. Government surveillance of the contractor's operation was minimal. At this

shipyard too, Government auditors had been denied access to a number of financial reports which were needed to determine the reasonableness of charges to Government contracts. No one in the local Government office seemed to be thoroughly reviewing whether the costs being incurred at the shipyard were reasonable or necessary. For example, I found that the shipbuilder had undertaken a million dollar development program for a commercial product, then charged the costs to overhead so that the Government would have to pay 98 percent of the costs.

Although the Government pays for 98 cents of every dollar spent at this shipyard, Government representatives here too were not checking actual procurements. Instead, the Government representatives were relying on a once-a-year, three day review of the contractor's purchasing system even though his purchases account for about one-third of the cost of the ship, the rest being due to labor and overhead costs.

Shortly before my representative made his investigation, the contractor's purchasing system had been reviewed by a Government procurement review team. In contrast to the numerous deficiencies which my representatives found, the Government team found nothing wrong. The team reported:

"The contractor's procurement system affords the maximum protection of the Government's interest and assures procurements of material at the lowest prices consistent with quality and required delivery schedules."

"It is recommended that the contractor's purchasing system be approved without limitation, and no purchase orders be submitted for approval, other than such approvals as may be required by non-standard contract clauses * * *"

The Government's representatives at the shipyard then went so far as to commend the contractor. He wrote:

"You are to be commended that your procurement system merits Government approval, and you are urged to continue your efforts to maintain an acceptable system."

I reported the situation at these two shipyards, to my Navy superiors, pointing out, in addition, that these shipyards are probably no worse than any others.

Mr. MAHON. What action did they take?

Admiral RICKOVER. It has been a tragicomedy. As I would raise an issue, those responsible for the area in question would be told to conduct an investigation. They always concluded everything for which they were responsible was well under control and that I was wrong. As I persisted in pointing out shipyard deficiencies, special teams of experts were formed. These teams tended to confirm grudgingly most of the problems I pointed out but implied that these problems had been known and were being worked on at the time, that my criticism was overstated; that the contractor had technical deficiencies in his procurement and cost.

I will read you a letter I recently wrote to my superiors concerning this problem. It illustrates the difficulties in trying to get some corrective action.

"1. On September 13, 1969, I forwarded to you a comprehensive report, reference (a), pointing out many serious deficiencies in cost control and procurement practices under Navy ship design, construction and overhaul contracts with Shipyard A. This report shows that the Government is paying more than it should for the work being

done; there are wide-spread deficiencies in procurement practices; there is inadequate control over labor and material costs charged to Government contracts and inadequate Government surveillance of contractor operations. I pointed out that the situation at this shipyard warranted further investigation by experienced procurement and cost control specialists to establish the full facts and to develop comprehensive corrective measures to preclude such waste of Government funds in future. I gave several specific recommendations for corrective action at this shipyard and at other shipyards.

"2. On November 24, 1969, Commander, Naval Ship Systems Command (COMNAVSHIPS), by reference (b), forwarded to you reports on these deficiencies from the Resident Defense Contract Audit Agency (DCAA) Auditor and from the Supervisor of Shipbuilding (SUPSHIPS). On January 20, 1970, COMNAVSHIPS, by reference (c), forwarded to you six enclosures summarizing NAVSHIPS review of the issues I had raised and presenting his conclusions and planned actions with regard to my recommendations.

"3. In their reports, the Resident DCAA Auditor and SUPSHIPS took exception to many of the issues I had raised. COMNAVSHIPS also expressed disagreement with several of my conclusions and recommendations. In those cases where COMNAVSHIPS indicated agreement with me, he cited at some length NAVSHIPS actions which have been or were being taken, indicating that most or all of these actions were taken or would have been taken regardless of my report. In sum, the conclusions of the Resident DCAA Auditor, SUPSHIPS, and COMNAVSHIPS are that my report is in error with respect to many basic facts; that in those areas where my report is correct, the cognizant officials were already well aware of the problems and were taking appropriate actions to correct them; and that the thrust of many of my recommendations would be to treat shipyard A as a 'captive' plant, contrary to the Department of Defense (DOD) policy of 'disengagement' which contemplates minimal interference in a contractor's operations. In reference (c) COMNAVSHIPS states:

" * * * Our SUPSHIPS offices are staffed in an austere manner in accordance with the DOD policy of disengagement; tightening control and surveillance over the Contractor would require increased SUPSHIPS personnel. Nowhere in any of the recommendations made by the Deputy Commander is it contended that a better ship would result, only that the contract cost would be lower. I am unable to determine that the short-range costs of closer surveillance of flexibly-priced contracts, due to increased contractor overhead and increased SUPSHIPS staffing will be offset by the savings that are implied by the suggestions of reference (a) * * * "

"4. COMNAVSHIPS statement that 'nowhere in any of the recommendations made by the Deputy Commander is it contended that a better ship would result, only that the contract cost would be lower' is not germane to the issues I raised. Of course I am interested in obtaining high quality ships. I am also interested in carrying out Presidential, Congressional, Secretary of Defense, Secretary of the Navy, Chief of Naval Material, COMNAVSHIPS and your own instructions to see to it that work is done in the most economical manner.

"5. Shipyard A is a 'captive' plant by its own choice: more than 98 percent of all business at the yard is Government work. Most of

this work is under sole source, negotiated contracts under which the Government bears all or a substantial portion of any cost overruns. Since profits on these contracts are negotiated as a percentage of estimated costs, in the long run, result in higher profits. Thus the contractor has little or no incentive to keep costs down. In these circumstances the Government cannot afford to rely on the shipyard to protect the Government's financial interests—as my report amply shows.

“6. Instead of thoroughly investigating the issues I raised, COMNAVSHIPS has simply referred my report to the very people who for years have had the responsibility for administering shipbuilding contracts—the very same people who are responsible for the unsatisfactory conditions at this shipyard. Their response, of course, is that everything is under control and being well-handled by the existing organization. Thus, there have been no significant improvements in any of the problem areas I pointed out.

“7. Enclosure (1) through (5) contain my detailed comments on each of the principal issues covered by COMNAVSHIPS in references (b) and (c). I strongly disagree with the conclusions drawn by COMNAVSHIPS and with those of the Resident DCAA Auditor and of SUPSHIPS. For example:

a. In enclosure (1) to reference (c) COMNAVSHIPS states that the procurement deficiencies I reported were known prior to my 13 September 1969 report; that Government approval of the shipyard's procurement system was permitted to lapse on 1 October 1969; and that the Supervisor of Shipbuilding will take ‘continuing action’ to correct contractor procurement deficiencies.

The procurement deficiencies at another major shipyard (shipyard B) should have been known long before September, 1969. My November, 1968, letter to your predecessor and my follow-up letters to you in February and March, 1969 concerning the need for improvement in ship procurement practices were attempts to bring the problems in this area to the attention of the responsible Navy officials. However, it is obvious that little has been done to improve shipyard A's procurement practices. Attachment A to enclosure (1) of this letter is a current example of poor procurement practices by the shipyard resulting in NAVSHIPS repeated rejection of one shipyard procurement recommendation. Most significant is the failure of shipyard management to recognize the seriousness of the deficiencies in their procurement practices. Obviously NAVSHIPS has not been effective in getting contractor management to work constructively to correct procurement practices.

b. The Resident DCAA Auditor states that the contractor's system for the accounting and control of labor costs is adequate and that the Government's surveillance of the contractor's labor charging practices has also been adequate. I can ascertain no factual basis for this conclusion. These areas have not been reviewed adequately. Numerous deficiencies still exist in the contractor's material control system; as of 31 December 1969, the Government was still being denied access to pertinent financial information. I do not know whether the Government auditor has yet been able to obtain access to such information.

c. COMNAVSHIPS reports that the present progress payment procedure which allows the shipyard to obtain payment from the Government for materials before the shipyard actually incurs the cost and before materials are issued from inventories is ‘acceptable to NAV-

SHIPS and DCAA.' COMNAVSHIPS further points out that progress payments on fixed priced type contracts are based on physical completion rather than incurred costs. The implication is that the shipyard's mischarging of material costs has no impact on shipbuilding contract payments.

Again I do not believe NAVSHIPS has looked adequately into the issues I raised. The contractor certainly considers that advance charging of materials costs to the Government has a significant effect on shipbuilding contract payments. For example, the shipyard recently paid one of its employees an incentive award of \$1,231 for suggesting that certain miscellaneous inventories of stock be charged off to the Government before they are used, so that a progress payment could be collected. The employee, in his suggestion, stated:

'Presently the Government cannot be billed until the material is actually used. By adopting an allocated type inventory for this material, the Government can be billed when the material is paid for because it is bought for use on a specific contract. Then, in effect, the Government finances this inventory for the shipyard. This suggestion generates funds for the shipyard.'

Thus, in this case the Government will not only be paying higher progress payments, it will also have to pay 98% of the incentive award which led to the higher progress payments by the Government.

d. COMNAVSHIPS considers present procedures for handling claims and contract changes to be adequate. I cannot understand how such a conclusion could be reached when contractors are allowed to commingle costs of changes with other work such that there is no firm basis for the Government to verify the costs claimed by contractors.

e. Present hiring practices by the Supervisor of Shipbuilding are acceptable to NAVSHIPS even though about one-third the personnel representing the Government at the shipyard are former shipyard employees. While the practice of staffing Government contract administrative offices with former contractor employees may be permitted by law or regulation, such action surely cannot be in the Government's interest.

f. The lack of detailed Government surveillance of the contractor's operations at the shipyard is attributed by COMNAVSHIPS to DOD's policy of 'disengagement', under which the Government relies on the contractor to control costs under Government contracts. Such an approach, particularly in a shipyard doing 98% of its business with the Government, makes no sense. With respect to this question of contractor-Government relationships there is no question but that the Navy has been complying fully with 'the DOD policy' of minimal interference. As a result, the contractor is engaging in a wide variety of practices which are no doubt beneficial to him, but costly to the taxpayer.

"8. The issues I raised are fundamental to sound administration of the Navy's shipbuilding program. They are not minor procedural matters as one might infer from reading the referenced COMNAVSHIPS letters to you. I believe that the seriousness of these issues and their adverse impact on the Navy is not yet understood. Unless we take prompt action to bring costs under control, the Navy will not be able to get funds from Congress to build all the ships it needs.

"9. The NAVSHIPS actions on the issues I raised in reference (a) reminds me of a similar experience more than 10 years ago. In 1959, I pointed out several overcharges on Government contracts by another shipyard to the Comptroller of the Navy. His response was to tell me that I should mind my own business and that I could rest assured his auditors were seeing to it that the Government was being treated fairly. It was not until the GAO two years later investigated the issues I raised that the Navy finally took action to recover these overcharges. The result was a GAO report to Congress and severe criticism of the Navy—criticism which could have been avoided had Navy officials taken corrective measures when I raised the issues, instead of defending their past actions. Moreover, it took the Navy 7 years to settle these issues on an after-the-fact basis. The Navy then had to settle for 50 cents on the dollar for money it wasted because of inadequate contract administration. I hope the Navy will not again wait for the GAO to raise the issue with Congress before it takes action to correct procurement and cost control deficiencies at shipyard A as well as at other shipyards.

"10. Over the years, I have worked hard to improve administration of our shipbuilding contracts. I have spent a great deal of my time and that of my leading people in pointing out deficiencies that come to my attention to cognizant naval authorities. Invariably the response to my comments by the officials concerned is to deny that real problems exist, and to cloud the issue with bureaucratic policy and procedural comments in defense of what they have been and are doing. Little or no action is taken. Inevitably, however, the facts come to light. I do not make comments and recommendations lightly or without careful consideration of the facts.

"11. In my opinion these issues warrant your personal attention and direction. Without such personal involvement, nothing will be done; references (b) and (c) clearly attest to this. I recommend that you take these issues up with the parent corporation's management and obtain commitments for prompt and effective corrective actions. Further, I recommend that you assign a competent and qualified person to keep track of the progress made in correcting these deficiencies and keep you advised of progress. Finally, I recommend that steps be taken to thoroughly review the administration of Navy shipbuilding contracts. Our SUPSHIPS organizations devote much time to the review and inspection of technical data, plans, ship construction and so forth. Their effort is also needed to review and monitor cost control, procurement, and management of contractor operations."

As a result of my reports, there have been many other reviews and reports. However, reports and letters are not, in themselves, means for solving problems; these can only be solved by action.

To date little has been accomplished to correct the basic problems. The vast bureaucracy moves with glacial slowness. Those who time and again point out and report obvious contracting wrongs are pervaded with a sense of helplessness at the widespread negligence in correcting those obvious wrongs. It seems that no one whose responsibility it is will do anything but "study" the situation—never take action. "Whatever is, is right", as Alexander Pope said.

NO FORGIVENESS IN BUREAUCRACY

Time has not yet taught me how dangerous it is to tell the truth to sovereigns; if they can sometimes forgive it, their courtiers never do. In a bureaucracy there is no forgiveness. There is no respite or pity; you do not hear a gentle voice come down from heaven, announcing to Faust forgiveness for sinful Gretchen.

I have never endorsed the idea that you don't do anything on the off chance you might be criticized. You'd end up like a living cabbage, and it's pointless. You've got to stick up for something you believe in. I have presented a concept and proposed action which will make it possible to correct some of the deficiencies that now exist.

Mr. MAHON. Admiral, are you continuing to look into the question of shipbuilding accounting and procurement practices? Do you have other reports of a similar nature?

Admiral RICKOVER. Yes, sir.

Mr. MAHON. Admiral, would you provide us copies of all these reports for the record?

Admiral RICKOVER. They cannot be released without the prior approval of the Department of Defense.

Mr. MAHON. I would like to request that copies of these reports be obtained for insertion in these hearings when the transcript goes to the Department of Defense for declassification.

Admiral RICKOVER. I will be glad to make the information available to my superiors.

(The reports referred to appear beginning on page 127 in the appendix to this volume.)

Admiral RICKOVER. I have tried in my reports not only to state the facts correctly but to give an analysis of why these facts are so and what can be done to improve them.

But do you imagine that once a thing has been said, it is enough? That a new idea will be accepted straight off? You are mistaken. It has to be dinned into people, it has to be repeated, repeated over and over again, in order that the mind may no longer be surprised by it, that it may be not merely understood, but assimilated, and obtain real rights of citizenship in the brain.

And, what is most mortifying, people seem to understand you; they agree, in principle, but your ideas remain like aliens in their heads, always irrelevant, never passing into that spontaneous part of consciousness which lies at the undisputed foundation of our acts and opinions. As Bismarck said:

"When you say that you agree to a thing in principle, you mean that you have not the slightest intention of carrying it out in practice."

PENTAGON MUST CHANGE PHILOSOPHY

To correct the problems I have pointed out, the Department of Defense will have to change what appears to be its basic philosophy in administering Government contracts: "Leave it to the contractor—rely on contractors to purchase materials economically and to establish effective cost controls over production."

In my years of experience in procuring equipment for the Naval nuclear propulsion program, I have found that this philosophy just does not work. A contractor's basic objective is to make as much money

as he possibly can from a defense contract. This is inherent in our free enterprise system. With so much sole-source or limited source procurement the Department of Defense has a responsibility to see to it that defense contracts are carried out economically. However, the Department pays little attention to the way a contractor manages his work once he obtains the contract.

There is a certain euphoria in this ignorance of what the contractor is doing. So long as there is no clash, no conflict, so long as neither effort nor sacrifice is demanded, all seems to go splendidly—for years at a time. One can spend a whole lifetime in the safe cowardice of not engaging in controversial matters. In fact, however, things are not what they seem, and the Defense Department's lethargy in overseeing its contractors leads to the waste of vast sums of money. There seems to be an absence not merely of new ideas, but of any ideas at all.

When the Department does criticize a contractor it does not seem to be aware that the corporation requires loyalty first and always, its top executives reserving to themselves the decision as to what is constructive criticism and what is not.

Until and unless Department of Defense officials start taking action against contractors when overcharges or inefficiencies are pointed out to them—instead of issuing instructions and memoranda urging improved performance by Government personnel, which they know will not be carried out—there cannot and will not be improvements in Defense procurement. Where there is no will to face up to industry, there can be no results.

The Department of Defense has not managed its weapons programs efficiently or economically. However, a substantial improvement could be made if major defense contractors were no longer treated as if they were suppliers of beans or bread or flour in a highly competitive market. The Department of Defense should be required to institute effective controls over the pricing and administration of major defense contracts.

TRUTH-IN-NEGOTIATIONS ACT

MR. MAHON. What has been your experience with the Truth-in-Negotiations Act?

ADMIRAL RICKOVER. The problem with the Truth-in-Negotiations Act is that the Department of Defense has not been enforcing it. This law has been in effect for about eight years. I know of no other law Congress has enacted—with the exception perhaps of Prohibition—which has been so widely and blatantly bypassed or violated. The law is applicable to subcontracts as well as prime contracts, but few defense contractors have implemented it except in the most casual way.

A number of industries have been effectively exempted from the Truth-in-Negotiations Act. In other cases entire industries have taken a united stand in refusing to comply with the requirements of the Act. Many large material suppliers, steel suppliers, forging vendors, computer manufacturers, ball bearing producers, electronic tube suppliers, and other firms do not comply with the Act. They are the "sacred cows" of defense procurement.

In some cases these firms are granted waivers as provided for by the law. More frequently, however, contracting officers find some way to conclude that competition is "adequate" so that the Truth-in-Negotiations Act does not apply. Under the Truth-in-Negotiations Act con-

tractors and contracting officers are not required to obtain supplier cost and pricing data if it is decided that there is adequate competition. In dealing with industries refusing to comply with the law, it is more expedient if the contracting officer concludes that the competition is adequate than it is for him to process a waiver through the chain of command in the Defense Department.

Mr. MAHON. Then you believe the Department of Defense must be more diligent in enforcing the Act?

Admiral RICKOVER. Yes, sir. Their actions are like the soldier's haversack on parade; it only looks as though it were stuffed full. There is less there than meets the eye.

As a result of my testimony before the Joint Economic Committee Senator Proxmire wrote the Department of Defense raising specific questions concerning the lack of industry compliance with the Truth-in-Negotiations Act. The Department of Defense response was that, generally speaking, defense contractors and subcontractors have provided cost or pricing data when required by PL 87-653 except in selected cases; that, with the exception of two firms, the Department of Defense does not know of any industries or companies that refuse, across-the-board to provide cost and pricing data; and that since the passage of PL 87-653, DOD has entered into well over 100 thousand transactions which were subject to the Act with only a minuscule number of waivers—all of which were reviewed at high levels in accordance with proper administrative procedures.

The Department of Defense response went on to state that it was always seeking improved methods of administering the Truth-in-Negotiations Act; that a task group had been recently created to study alleged contractor resistance in supplying cost and pricing data in specific instances; and that the Department would take actions as necessary to improve its implementation of this law.

Senator Proxmire has asked for my comments regarding the Defense Department's response and I will soon send him my detailed comments. But it is inconceivable to me that the top defense procurement officials do not know of any industries or companies, other than two specifically mentioned, that refuse across-the-board to provide cost and pricing data. Their response indicates the extent to which defense procurement officials have been insulated from procurement problems.

It appears that the Defense Department has been relying too much on its "management systems" to bring problems to their attention rather than actually checking into its procurement operations.

INDUSTRIES REFUSE TO COMPLY WITH LAW

The refusal of industries and companies to provide cost and pricing data in accordance with the Truth-in-Negotiations Act is well known to officials of other Government agencies and to those involved in day-to-day procurement. A few minutes' checking would have confirmed this. For example, I can immediately think of four specific areas I have encountered where people have not been complying with the requirements of the Truth-in-Negotiations Act.

Computer suppliers have not been providing cost and pricing data to the Government as required by the Truth-in-Negotiations Act. Defense procurement officials should know of the problem; the Depart-

ment of Defense has waived the Truth-in-Negotiations Act in connection with computer procurements. The issue has been well documented within the Government.

I pointed out this particular problem in testimony to Congress for the past several years. The Administrator of the General Services Administration also raised this issue in Congressional hearings and took it up with the General Accounting Office. The Atomic Energy Commission recognized this problem, too, and has been working with the Bureau of the Budget and the General Services Administration to try to get it resolved. The problem is a matter of concern at the highest levels within the Atomic Energy Commission, as is evident from the following statement from a recent Atomic Energy Commission staff paper concerning failure of computer manufacturers to comply with the Truth-in-Negotiations Act:

"In summary, the problem has been brought to the attention of the Congress and the General Accounting Office, to the attention of the Government's central ADPE procurement agency (GSA), and to the attention of the Bureau of the Budget. We received a great deal of sympathy, but no solution. It would appear, therefore, that in the absence of getting the law amended either (1) to make submission of cost or pricing data mandatory, with penalties for failure to do so, or (2) to exempt computers from the present requirements of the law, we have no alternative but to continue waiving the requirement for cost or pricing data on a case-by-case basis."

The Defense Department has also waived the Truth-in-Negotiations Act in connection with computer procurements. It is inconceivable to me that defense procurement officials could have gotten involved in these procurements without becoming aware that the problem was industry-wide.

Raw materials, particularly steel, are another example where an entire industry has not been required to comply with the the Truth-in-Negotiations Act. Despite the many special purpose materials developed and procured strictly for military application, very few material suppliers have been required to provide cost or pricing data. Because material procurements often take place at the second, third, or lower level of subtier supplier, non-compliance with the Act in the area of material procurement is less apparent than it is in the case of computer procurements. However, a little checking would show that material suppliers generally do not provide cost and pricing data in accordance with the Act.

WAYS TO CIRCUMVENT THE LAW

I found that in some cases considerable effort and ingenuity have gone into finding ways to circumvent the law. Here are some ways defense contractors and Government officials have been able for eight years to procure materials from companies that refuse to comply with the Truth-in-Negotiations Act without having to obtain an official waiver of the law.

You can determine that two or three bids constitute adequate competition regardless of the circumstances. Then the law does not require submittal of cost and pricing data.

Procurement of HY80-HY100 armor plate for shipbuilding is a good example. This specialty steel was developed at Government ex-

pense and is used almost exclusively in the construction of nuclear submarines and other naval vessels. In 1965 the GAO issued a report concerning Navy procurement of HY80 steel pointing out that the limited competition available did not insure reasonable prices; the two suppliers were making profits of 14 to 27% on costs.

The Navy replied that in future, the Navy and its prime contractors would discontinue procurement of this material by formal advertising and would obtain certified cost and pricing data as required by the Truth-in-Negotiations Act.

In December, 1969, I pointed out to Navy officials that shipbuilders had not been obtaining cost and pricing data on HY80 and HY100 steel procurements despite the assurances the Navy had made to the General Accounting Office. Further, it turned out that responsibility for direct Navy procurements of this material had been assigned to the Defense Industrial Supply Center. This Center had not insisted on cost and pricing data either. The shipyards and the Defense Industrial Supply Center had decided that competition was adequate and that no cost and pricing data were required.

The fact is that no one has yet been able to obtain the steel companies' agreement to provide such data. The Navy is now working on this problem; I understand that as of this date all the steel suppliers still refuse to provide cost and pricing data on these procurements.

Another way around the law is to conclude that the price is based on standard catalog prices.

The Truth-in-Negotiations Act provides that supplier cost and pricing data need not be obtained where prices are negotiated based on established catalog or market prices of commercial items sold in substantial quantities to the general public. Material suppliers, therefore, establish standard catalog prices for basic material, and separate add-on factors for additional specification requirements. The result is that prices for specialty materials peculiar to defense equipment can be "based on established catalog or market prices of commercial items sold in substantial quantities to the general public". The Truth-in-Negotiations Act is thereby avoided.

Another way around the law is to break procurements into small orders that do not exceed \$100,000.

Procurements under \$100,000 are exempt from the Truth-in-Negotiations Act. As a result, some contractors divide their total requirements into several smaller orders to bypass the Truth-in-Negotiations Act. I found that a shipbuilder recently procured on a sole-source basis \$3.4 million of specialty steel for a single ship under 1200 separate purchase orders, none of which exceeded \$100,000.

You can also disregard the law and chance that no one in the Government will find out.

SHIPYARDS FAIL TO IMPLEMENT LAW

This tends to be encountered more in the second or third tier sub-contract level. However, in 1969, I found that two of the Navy's major shipbuilders, most of whose Government business is under Navy prime contracts, had not implemented the Truth-in-Negotiations Act seven years after its enactment.

I read recently that the Justice Department was considering another investigation of the Drug Industry for price fixing. Why don't they look into steel? Why don't they look into other basic materials, such as nickel? I believe they would find plenty to concern them.

Forging suppliers also generally refuse to provide cost and pricing data. For years, the Department of Defense and its contractors have bought specialty forgings based on a determination that competition exists and without examining supplier cost and pricing data. Actually, some forging suppliers frequently have substantial competitive advantages over their competitors, either in the area of production facilities or capabilities, or by virtue of having obtained the initial order. The practice in the forging industry is to charge off the tools, dies, and special fixtures in the price of the initial order. In bidding on follow procurements, competitors are automatically at a disadvantage since they have to absorb these one-time costs which the firm having the initial order does not face. Nonetheless, it appears that the Department of Defense and its contractors have nearly always determined competition in the forging industry to be adequate. I believe these judgments have been influenced by the fact that forging suppliers have taken a united stand in refusing to provide cost and pricing data.

PROBLEMS RAISED WITH DEFENSE OFFICIALS

I decided to make an issue of the forging suppliers' refusal to comply with the law. There are many cases where two or three forging suppliers bid on a given requirement and you do not really have effective price competition. However, I raised with senior defense procurement officials 4 cases involving sole source procurements. In that way there could be no question that supplier cost and pricing data was required by law. Neither the forging suppliers nor procurement officials could cloud the issue by arguing there was adequate competition.

In the four cases I raised, each of the four forging companies stated that their policy was not to provide cost and pricing data. Navy procurement officials had to devote considerable time and effort in trying to convince these companies, some eight years after enactment of the Truth-in-Negotiations Act, that they should start complying with the law. The results were less than satisfactory but they were the best the Navy could obtain in the circumstances without further jeopardizing project schedules. The following is a summary:

Forging supplier A: Time spent by the Government in trying to get agreement to provide cost data—2 months. Final resolution—forging supplier A refused to provide cost data. The Assistant Secretary of the Navy had to waive the law to avoid delay to an important project.

Forging supplier B: Time spent by the Government in trying to get agreement to provide cost data—6 months. Final resolution—forging supplier B finally agreed to provide cost data on this one procurement only on the basis that the Navy could get no bids from another source. The cost data showed an unsupported contingency factor such that the supplier stands to make a 23% profit on this order. The supplier, however, has refused to reduce his price.

Forging supplier C: Time spent by the Government in trying to get agreement to provide cost data—7 months. Final resolution—the Government had to agree to a cost-type contract rather than a fixed-price

contract before forging supplier C would agree to provide cost and pricing data on this procurement. The Government is left with the problem of administering a cost-type contract through two higher tiers of contractors, one of which is operating under a fixed-price order. This is not an acceptable long-run solution to the problem.

Forging supplier D: Time spent by the Government in trying to get agreement to provide cost data—7 months. Final resolution—Shortly after a member of forging supplier D's management was appointed to the Holifield Commission on Government Procurement, the company provided cost data. These data are being audited. Since then, however, forging supplier D has been unable to obtain the required cost and pricing data from its traditional steel supplier on an order for steel to be used in the Navy forgings. Forging supplier D is now seeking a bid from another steel supplier so that his lower tier procurement of steel can be classified "competitive."

The extensive effort required to obtain cost data from these forging suppliers made it very clear to me that the forging industry has not previously been providing cost and pricing data to the Department of Defense in similar situations. Had the Defense Department been actively policing the Truth-in-Negotiations Act, it would have been aware of this problem many years ago.

My testimony to Congress has been based on what I have seen in the course of my technical duties. I find it very hard to believe, however, that the problems I see are unique to my work. Computers, steel, and forgings are not peculiar to nuclear work. My opinion is that there has been a general laxity in the implementation of the Truth-in-Negotiations Act. I have testified on numerous occasions to that effect.

I am convinced that effective implementation of the Truth-in-Negotiations Act would lead to greater economy in defense procurement. I also believe it is wrong to apply a double standard such that some companies and some industries must comply with the law while others do not.

As I have testified many times, I believe the Department of Defense should be required to face up to the lack of effective competition in contracts and subcontracts for complex defense equipment and to implement the Truth-in-Negotiations Act. However, from the Department of Defense response to Senator Proxmire's questions, it appears that the Department is unwilling to do so. In my opinion, Congressional action will be needed if Congress intends full compliance with the Truth-in-Negotiations Act. If it does not, it should stop blaming the military for poor procurement practices.

PERSONNEL INTERCHANGE BETWEEN GOVERNMENT AND CONTRACTORS

Mr. MAHON. Admiral, you mentioned the problems of the interchange of personnel between the Government and its contractors.

Admiral RICKOVER. Yes, sir. You should understand that the problem is not confined solely to high level political appointees or flag rank officers. It extends down to contracting officers, contract administrators, and inspectors. Earlier I described what I consider to be the poor contract administration practices in one of our major shipyards. It turned out that about 110 of the Government representatives charged with responsibility for administering the work at this

shipyard were ex-shipyard employees. Navy officials have defended such practices on grounds that former contractor employees are more familiar with the contractor's operation than an outsider would be.

We have similar problems with former Government personnel—contracting officers, negotiators, procurement lawyers, senior procurement officials and the like—who now work for the very firms they used to deal with. They now represent these firms in dealings with their former colleagues in the Government. This is commonplace. At some negotiations it is difficult to keep track of who is representing which party. The rules on interchange of Government and contractor personnel in contract-related areas need to be strengthened to preclude such situations.

In my opinion, the Department of Defense is too much influenced by the industry viewpoint. This industry influence is obvious in much of today's defense procurement rules and practices. The Defense Department's approach to contract administration is one example of industry influence. Industry representatives have lobbied extensively to cut back on Government surveillance of these contracts. Several years ago, the Department of Defense instituted a weighted guideline system of profit determination, the overall result of which was to increase profits paid on defense contracts by 25 percent.

In another case, Congress and the General Accounting Office pressed the Defense Department into reserving a contractual right to examine supplier's books and records during and after completion of contract performance to determine whether cost or pricing data submitted by the supplier were accurate. The Department of Defense finally agreed to add such a requirement. But to make the change palatable to industry, it published a letter assuring contractors it would not use its audit authority to evaluate how much profit the contractor would make.

The Department of Defense will not institute a profit reporting system that show costs and profits on firm fixed price contracts. Yet, these contracts amount to about half of the total defense procurement dollars expended.

Industry influence is exerted in a number of ways. However, two that I consider to be most damaging are the Industry Advisory Council—formerly the Defense Industry Advisory Council, before the words "Defense-Industry" had their present connotation—and the extensive interchange of personnel between the Department of Defense and its contractors.

THE INDUSTRY ADVISORY COUNCIL

The Industry Advisory Council has considerable influence on defense procurement policy. The Council is a group of high level industry and Defense Department executives which meets regularly to discuss procurement policies and other matters concerning weapons acquisition. It is one of industry's most effective forums for influencing defense procurement policies. This group probably has more influence on defense procurement policies than the Armed Forces Procurement Regulation Committee itself.

Industry is represented on the Industry Advisory Council by the chief executives of many large defense contractors. The Department of Defense is represented by secretaries and assistant secretaries of military departments and by other top level military officials. There

is no public record of the meetings of the Industry Advisory Council. No one but the members know exactly what goes on in these meetings.

For most Government officials the Industry Advisory Council is their only real contact with the procurement world. As a result, their viewpoint is influenced by what they hear from industry executives during these meetings. Government officials would probably have a different outlook on defense procurement problems if regular meetings were held with working level Government contracting officers, Government auditors, and technical personnel who have to deal with industry on a day-to-day basis.

In my opinion, defense-industry meetings at which Government policy for business is being formulated, such as the meetings of the Industry Advisory Council, should not be conducted without a public record. I also question whether such groups should exist without specific statutory authority from Congress.

RENEGOTIATION ACT DEFICIENCIES

Mr. MAHON. I also read that you recently testified to the House Government Operations Committee regarding deficiencies in the renegotiation process. It would be helpful for this committee to understand this problem because the subject of the Renegotiation Board comes up from time to time in the course of our work. Would you summarize your views on the subject?

Admiral RICKOVER. Yes, sir. The Renegotiation Act is not nearly as effective as it has been or as it should be. The Act has been watered down by Congress and contains many loopholes. As I mentioned earlier, defense industry associations are presently engaged in a similar effort to convince Congress that similar loopholes should be included in the uniform cost accounting standards legislation.

The Renegotiation Act is no longer a deterrent to overpricing on defense contracts. Congress established renegotiation in 1951. Then the renegotiation process was considerable stronger than it is today. The Congress itself has weakened the process by repeatedly adding exemptions and loopholes to the Act. Every year or two a little more is given away. Thus re-examination of the statutes and the amendments enacted over the years is necessary. We need a basic law without all the special amendments that have weakened it. The way to do this is not to add even more amendments to the patchwork piece of legislation we now have, but rather to set it aside and start over again.

As you mentioned, I recently testified in detail concerning specific deficiencies in the Renegotiation Act and in the way it is being administered. (Committee Note—See "The Efficiency and Effectiveness of Renegotiation Board Operations—Part 1", Hearing before a Subcommittee of the Committee on Government Operations, House of Representatives, Ninety-first Congress, First session, September 23, 1969.)

Here are some of the problems with the present renegotiation system. First, contractors are not required to report cost and profits in accordance with any uniform standard of cost accounting. The Renegotiation Act requires only that contractors report their costs and profits in accordance with Internal Revenue Service rules. Such rules are inappropriate for this purpose. They have nothing to do with the way the contractor assigns costs and profits to Government or non-Government work.

Second, contractors can average their costs and profits in renegotiation. They can charge excessive profits in one line of work to finance their entry into other defense markets. This gives the large corporations a substantial advantage over small companies in competing for new work and in being able to come up with reasonable-looking profit figures to show the Renegotiation Board.

Third, the Renegotiation Board accepts contractor cost and profit figures at face value. I have pointed out, and the GAO has confirmed, that there can be great disparity between cost and profit figures provided by contractors and what can be confirmed by Government audit. The Board, however, has only about 7 accountants to check out the cost and profit figures of the entire defense industry. Although the Board has access to the audit services of the Department of the Treasury and the Defense Department, however, it has not availed itself of these services.

Fourth, the Renegotiation Act is fraught with special interest exemptions; for example, there is a "durable production equipment" exemption, a "personal services" exemption, a "stock item" exemption, a "commercial article" exemption, and other exemptions which give preferred status under the Act to certain special interest groups. The Chairman of the Renegotiation Board has testified that these exemptions include a number of items that are sold only to the Government. There is no need for all these exemptions. If contractors now qualifying for the exemption are not making excessive profits as they claim, they should have no objection reporting profits to the Renegotiation Board.

Fifth, no agency in Government, such as the General Accounting Office, does a thorough review of the Renegotiation Board's operations. I understand that even the General Accounting Office does not have authority to look into all areas and aspects of the Board's operations.

Sixth, the Renegotiation Board is not staffed sufficiently to carry out its responsibilities. The Board has only about 200 employees to check costs and profits in all Government contracts subject to renegotiation. The Defense Department has about twice that many people assigned to look after contract matters at one major shipyard alone. Even then, they did not know what was really going on at the shipyard. It is obvious that 200 people cannot effectively administer the Act.

Seventh, the Renegotiation Board is not completely free to operate independent of outside pressures. Board members are subject to removal from office at any time. The Board should be given status comparable to an independent regulatory agency.

Eighth, the Renegotiation Act is not permanent legislation. It has to be reviewed every two or three years. Each time it is renewed, more loopholes are added to the Act as a condition of extension. The temporary nature of the Board also makes it extremely difficult for it to attract the competent, dedicated career employees needed for so important a function.

Today the Renegotiation Board is little more than a facade. We have the semblance but not the substance of effective renegotiation. Unfortunately, those unfamiliar with the Renegotiation Act and the operations of the Renegotiation Board are often misled. They believe that the Renegotiation Board is the protection against overcharging in defense contracts and tend to rely on the Board as the last ditch insurance against contract abuse. In truth it offers little or no protection.

Industry publicly objects to the Renegotiation Act each time it is up for renewal. I believe that privately it very much wants to maintain a Renegotiation Board essentially in its present weak state. The ritual of Renegotiation tends to sanctify company operations in the public eye.

In summary, the important fact to remember about the Renegotiation Board in its present form is that it in no way assures only reasonable profits on defense contracts.

CHANGES IN CONTRACTUAL RELATIONSHIPS

Mr. MAHON. Thank you for this explanation, Admiral. The committee will review with interest your recommendations on the renegotiation process.

Admiral RICKOVER. I would like to discuss another situation which makes it difficult for the Government to obtain the goods and services it needs from industry at a fair price. When I first became involved with Government contracting, over 40 years ago, a contract was a contract. Business was carried on between the Government and industry essentially on the same basis as business was carried on between two commercial firms. A contract reflected the agreements between the parties and each party to the contract was expected to carry out his agreements pursuant to applicable contract law. There was, of course, the consequence of damages if either party failed to carry out his agreement.

In more recent years there have been substantial changes in the contractual relationships between the Government and its commercial contractors. And these changes have been going one way—against the Government. They have not been induced by any basic contract law. Rather, small groups of lawyers and others, acting for the Government in such roles as hearing examiners or appeals board members, have been dispensing “mountain justice,” or so-called “equity” as they see it, rather than deciding issues based on applicable law. Invariably, these equity decisions favor the contractor; such decisions can not be in the Government’s favor and stand, because the “disputes” articles in Government contracts under which they are rendered do not provide for judgments based on “equity” or “fairness.” The contractor would take issue with any decision against him based on “equity,” “fairness” or any other extra contractual considerations. But the Government has accepted such decisions against itself and now is having to live with the consequences.

I am not against equity or fairness. But I don’t think contract law should be undermined by extra-contract considerations or that an “equity” system should work only one way. Today equity seems to mean in simple terms, “Let’s see how much more we can get from the Government than is provided for by contract.” And so you have claims of every description for constructive changes, acceleration of performance, Government interference, alleged acts or failures to act. Naturally, it is to the contractor’s advantage to develop an extensive “laundry list” of claims against the Government. With the rash of unfounded and exorbitant claims being submitted against the Government by contractors today, it is obvious that they have exploited this weakness in Government contracts to the fullest.

CLAIMS AGAINST THE GOVERNMENT

Claims against the Government have become very big business. Hundreds of millions of dollars are involved. The increasing number of claims in recent years is a direct result of the encouragement contractors have received from Government representatives who persist in the philosophy that the Government should give the contractor relief from the provisions of his contract for almost any conceivable reason. Claims against the Government are upheld not only when an appropriate legal basis exists, but also when there is no appropriate legal basis—as long as the Government's appellate authority thinks it is "fair" to give the contractor relief.

The Government's interest is being undermined, too, by efforts of Government representatives to build more "fairness" into Government contract clauses. Key clauses, such as the "changes," "suspension of work" and other articles, have been considerably altered during recent years to benefit the contractor and to make it more difficult for the Government agency to obtain what it thought it had bargained for. These changes have facilitated contractor claims for "extras," "acceleration of performance" etc. But this isn't the complete picture. A new vehicle has been found to squeeze the last conceivable ounce of "fairness" out of a government contracting officer. In 1958, Public Law 85-804 was created to provide "extraordinary contractual actions to facilitate the national defense." This means that the Defense Department can grant contractors financial or other relief to which they are not entitled under the terms of their contract if, in the judgment of the Department, such action is necessary to facilitate the national defense. Thus, if a contractor somehow cannot recover as a claim costs under the very liberal "disputes" system, he can always look with a high degree of optimism toward a "bail out" under Public Law 85-804.

I should point out that normally it is not the small contractors who benefit from this derogation of the integrity of the Government contracts. It is the giant corporations doing much Government work who usually can hire the lawyers who know every nook and cranny of this total systematic weakness of Government contracting. And they do a good job. Paper is not spared. The supporting documentation for just one claim may easily fill 20 or 30 filing cabinets. The Government simply does not have the people to defend itself in these situations. Frankly, the odds are stacked against the Government before the dispute even gets underway.

I am no lawyer and I can only look at this situation from the standpoint of someone who has seen the Government's contractual position steadily deteriorate over the years. I hope that Congress will look into this situation where the Government on the one hand is entitled to the fulfillment of obligations undertaken by a contractor only on the basis of applicable law, but the contractor, on the other hand, is entitled additionally to the benefit of "fairness," "equity", and the opportunity to obtain an extra legal settlement where he can persuade a Government official of the merits of his case.

Mr. Chairman, I have told you a few of the major problems. They prevent maximum economy in defense procurement. Further, they

tend to undermine the Defense Department in its efforts to provide adequately for the national defense. Lax procurement practices and poor contract administration encourage inefficiency. They divert the attention of contractor management away from the task of managing their business efficiently.

OPERATIONS OF CORPORATE CONGLOMERATES

Today, with the growth of the large conglomerates, the problem is aggravated. The growth of the conglomerates and other developments are changing the face of the defense market. Under these circumstances, it is essential that we scrutinize our procurement rules to be sure they keep pace with the changes. For example, last year one of my laboratories recommended placing a \$5 million contract with a subsidiary of a large conglomerate. Before committing important work to the company, I arranged to visit the plant and meet with the president of the subsidiary. In the course of the discussion, I naturally inquired as to the extent of support to be provided by the parent corporation. The president of the subsidiary stated that the parent company controls the operations of the subsidiary but takes great pains to maintain "a corporate veil" between itself and its subsidiaries. The president of the subsidiary could not make even minor decisions which affect his company; he had to get approval from corporate headquarters for minor capital expenditures. Yet the subsidiary president was ultimately responsible for the performance of his company. That is what "a corporate veil" is—the parent corporation makes the decisions, gets the profits, but does not hold itself responsible. The Government has no recourse to the parent corporation if the subsidiary fails to meet contract requirements. I refused to do business on this basis.

As things worked out, the subsidiary was brought by another conglomerate. I was able to get the new parent corporation to guarantee unconditionally the timely performance of all obligations of the subsidiary. In addition the corporation agreed to provide all management technical backup support necessary to assist the subsidiary in the performance of these orders. However, these were special arrangements I had to make.

Certainly we cannot do without corporations. They serve an essential purpose. But does this justify the lopsided development which has brought us to a point where corporations—artificial persons—are granted virtually all the "rights" enjoyed by natural persons? And without being held, as a *quid pro quo*, to all the "obligations" the law imposes on real human beings?

Proportionate to their income, middle-class Americans pay far more in taxes than do the wealthy. The middle class bears the greatest burden of taxation and supplies most of our troops. Yet, they feel left out and ignored by the political process. The wealthy can take advantage of numerous tax loopholes: capital gains, leasing arrangements, pension, stock options, income averaging, interest on State and municipal securities, profit-sharing benefits, and so forth. Lower income people do not have the advantage of these loopholes. They have to pay their taxes.

RESENTMENT IS FELT BY YOUTH

There also is resentment by the youth of this country. They feel that there is a double standard. Of course we older people know that one cannot always adhere to a rigid stand and that sometimes one has to compromise. But I don't see any reason why corporations should be given more favorable treatment than individuals. Why should they have preferential treatment? I think this country is going to have to face up to these issues.

For some 80 years now, the Supreme Court has held that a corporation is a "person" in law and therefore intitled to the protection of the 14th amendment.

Speaking as a layman, I submit that if a corporation is assumed to be a natural person for purposes of protection under the 14th amendment, then all the obligations incumbent on "natural persons" ought also to be binding on the corporation. And, since the corporation acts through its officials, these should be held personally liable for illegal corporate acts. Woodrow Wilson stated the issue most clearly:

"I regard the corporation as indispensable to modern business enterprise. I am not jealous of its size or might, if you will but abandon at the right points the fatuous, antiquated, and quite unnecessary fiction which treats it as a legal person; if you will but cease to deal with it by means of your law as if it were a single individual not only, but also—what every child may perceive it is not—a responsible individual."

I have had experience with corporate behavior which by a "natural person" would be considered illegal. Again speaking as a layman, it would seem to me that where officials of a corporation, acting for it, commit the corporation to illegal acts they should be held personally accountable.

I cannot see how a corporation can be compelled to act as a "responsible individual," to use Wilson's phrase, unless this responsibility is attached to the human beings who speak and act for it.

The special rights of corporations under the law and the various loopholes that have been incorporated into the protective legislation such as the Renegotiation Act and the Truth-in-Negotiations Act, tax legislation, regulatory directors, and so on have placed a premium on managers skilled in financial and legal manipulation, rather than those who are skilled in producing quality equipment, etc., efficiently and economically.

I have recommended that *nolo contendere* pleas or consent decrees should not be allowed in cases where contractors have submitted false or misleading cost or profit information to the Government.

When a defendant pleads *nolo contendere* he is penalized for his actions, but he is never officially convicted of a crime. In a consent decree the Government obtains the agreement of the defendant to cease the alleged illegal actions, but without the latter admitting guilt to the charges.

A consent decree in effect says "we didn't do anything and we won't do it again."

These devices permit a defendant to avoid a criminal record, even though he may be guilty of the charges. Where the submissions of false and misleading data to the Government is concerned, I believe defendants should be found either guilty or not guilty.

DEFENSE BUSINESS NOT EFFICIENT

Today most of the corporate officials in the defense industry spend much of their time in financial manipulation, stock issues, running around and lobbying to influence this person or that. They pay very little attention to the conduct of their business. Most defense business suffers because it is not being run as efficiently and economically as it could.

I grant that it is difficult and expensive to operate a large defense business, particularly in view of the vast technological changes that have taken place in the last 20 years. For a company to be able to obtain contracts for difficult and complex defense equipment, it must have large and expensive facilities, either its own, or furnished by the Government. The facilities often have been furnished by the Government. But the company must maintain a large staff of experienced scientists and engineers.

If the Government does not use the facilities and the trained people at optimum capacity, there is bound to be inefficiency. This type of inefficiency is inherent in the defense business. The uncertainties of most of our major defense programs means these inefficiencies are inevitable.

We also have higher costs due to the Government's social programs, such as those to control pollution and to further social goals. The people in the government agencies who require these programs to be established as a prerequisite to receipt of government contracts have the authority to make demands upon the contractors but have no responsibility for the increase of costs these programs entail. Working out agreement on these social programs can divert top management for long periods of time from their job of running their companies in an efficient manner. Further, the programs themselves can result in less competent individuals being assigned to more responsible jobs on defense contracts thus further reducing efficiency beyond the control of company management.

But there are other unnecessary inefficiencies. These inefficiencies arise because the talents of top management are also being devoted to seeing how much they can eke out of defense contracts as additional profit or to further their own purposes. This then, becomes a very important function of management. They would engage in whichever business gave them the most profit. And you cannot blame them. If they do not do that, they lose their jobs.

You know what happens to the president of a company who does not make large profits. He will be replaced. The stockholders are interested only in the profits.

NEED FOR UNIFORM ACCOUNTING STANDARDS

Accounting standards would help to show things as they are. The defense industry would not need large batteries of lawyers and accountants to find loopholes in the law or to devise self-serving accounting systems. Defense contractors would then have to be more concerned with the efficiency of their business. Inefficiency can beget further inefficiency. When a giant defense contractor begins to stumble, he is likely to be wrapped even more tightly in the Government's embrace,

fed with subsidies and protected from harsh reality. The large defense contractors seem to feel they have a right to these subsidies. One large firm recently asked the Department of Defense for large sums of money to resolve its financial difficulties. The president of the company stated that his request was based on "recognition of the interdependence of the company and the Department of Defense." If this "interdependence" gives industry the right to Government subsidies, why doesn't it give Government the right to know actual costs and profits on Government work?

Why should we—the customer—always be placed in the position of having to prove what the profits actually are? Let us shift the burden of proof to those who claim that their profits are too low. The Defense Industry is making massive demands on the Government; it should make some minimal demands on itself.

NEED FOR MUTUAL CONSIDERATIONS

The Government and some members of the defense industry have become adversaries; the one desires a satisfactory product at a reasonable price while the other appears to desire the greatest price the traffic will bear. What we are witnessing today in defense procurement is the expression of these conflicting interests in violent terms.

These antipathies will continue to the detriment of both the defense industry and of the Government unless there is developed a self-disciplined manner of dealing with one another. What we need between these two hostile groups is the greatest courtesy and consideration. We need a moderation and mutual consideration in their behavior that is not evident today.

Such mutual consideration cannot be achieved as long as members of the defense industry make it standard practice to use every possible strategem against the Government: their dubious accounting practices, their large number of lawyers and accountants whose sole objective is to prosecute large claims against the Government, their monopoly position, and their superior bargaining power. They operate on as if they have nothing to lose and everything to gain by these actions. But our Government, on the other hand, cannot treat its citizens in this same amoral manner; it cannot operate on the basis that men live by bread alone.

Men's attitudes and their consequent ways of dealing with one another are open to wide change. Change in attitudes can be brought about quickly by new ways of normative thinking, since social behavior is based on the notions men have in their minds. Our relations with industry can be bettered only in this manner. Legal or institutional devices can help as well, but these are rarely primary. They are necessary, but they are generally secondary in that they can only mirror changes of a more basic cultural character—changes that have already taken place in men's minds.

The inefficacy of various acts of Congress—such as the Truth-in-Negotiations Act—to limit defense profits is ample proof of this.

INDEPENDENT RESEARCH AND DEVELOPMENT

Mr. MAHON. What about this question of independent research and development expense, Admiral? What are your views on that?

Admiral RICKOVER. This is another area where I disagree with the

way the Department of Defense is carrying out Government business. Each year the DOD spends directly about \$8 billion for its own research and development programs. In addition, the Department of Defense pays in overhead charges on defense contracts about \$700 million a year for independent research and development work by defense contractors. This independent research and development work is performed without any Government direction or control. Under current procedures, the Department of Defense does not even get any rights to technical data and inventions resulting from the independent research and development work of its contractors, though in some cases the Department of Defense may be paying the major portion of the cost of such work.

Contractors, under their independent research and development programs, can undertake whatever research or engineering development work they choose. Such work may be directed toward a specific objective such as development of a new product or solution of a particular problem, or it may be general research. The Department of Defense accepts the cost of such work in overhead on the theory that defense work benefits from new ideas developed by contractors under independent research and development programs. Of course, contractors for years have benefited from Government-financed research and development contracts without participating in the cost of such work. In fact they have already been paid a profit to perform such work for the Government.

Under present practices, the Department of Defense has no way of knowing whether the benefits it receives from contractor independent research and development are worth the cost paid in overhead on defense contracts. In my opinion, a far better practice would be for the Department of Defense to contract directly for that portion of a company's independent research and development program which it chooses to support.

The Government pays directly for its own research and development programs. Contractor independent research and development programs may or may not be of sufficient value to warrant Government support. I consider that the Government should be able to decide whether or not it will participate in a contractor's independent research and development and the extent of such participation. If the Government desires to participate in a particular contractor-sponsored independent research and development program, it should arrange for such participation by means of a direct contract with the company involved, not through overhead charges on defense contracts. All other contractor research and development work should not be allowed as cost on Government contracts. Such work should be paid from their profits.

PRIORITY OF RECOMMENDATIONS

Mr. MAHON. Admiral, you have given us a long list of recommendations for the Congress. If you had to assign a priority to the recommendations, which would you categorize as most urgent?

Admiral RICKOVER. They are all important if you want to achieve economy in defense procurement. However, the establishment and mandatory use of uniform cost accounting standards in defense contracting should be first on the list. Second, Congress should regularly

review the Pentagon's contracting practices and procedures to make sure that legislation relating to defense procurement is being properly implemented. Third, Congress should strengthen the Renegotiation Act as I have indicated. Fourth, Congress should require the Department of Defense to enforce the Truth-in-Negotiations Act. It is a sound law, but it is not being implemented by the Department of Defense and many of its contractors. Fifth, Congress should require the Department of Defense to stop treating non-competitive procurements as if they were competitive.

I consider these to be the most urgent problem areas.

Mr. Chairman, I hope you will consider the issues I have raised today, not only in the light of the money involved, but also with respect to the deeper social and political considerations I have touched on. I do not imagine that my words carry weight except as they might persuade committee members present at this hearing who find them challenging.

If I may paraphrase the Talmud, it is not for me to complete the task, but neither have I the right to desist from it. What is left for the patriotic citizen is the consciousness of being right, and hope for coming generations.

Those who congratulate themselves on the sacrifices they make in "public service" are pulling the public's leg. I can never repay or do enough for our country, which has done so much for me—a country which has the best Government there has ever been—a country which offers greater opportunity to its citizens than has been afforded in all of history.

In the past I may not have given some of my superiors in the Department of Defense as much respect as they expected, but I did try to give them good service. A good bureaucrat, on the other hand, gives little service and great respect.

Mr. MAHON. Admiral, thank you very much for your views and recommendations on these complex and troublesome problems. Now, Mr. Wyman has some questions.

SUBMARINE CONSTRUCTION PROGRAM

Mr. WYMAN. Admiral, it is an honor for me to be present upon the occasion of your testimony and to have the privilege of asking you some questions. I would like to comment that I think this country can ill-afford to disregard the recommendations that you have made because of the accumulated wisdom and experience that you have, which is matched by very few, if anyone, in the entire United States.

You have said this morning and in previous testimony that by the end of this year the Soviet Union is going to be ahead of us in the total number of atomic submarines. Bearing this in mind, do you feel that our building program for nuclear attack submarines is adequate?

Admiral RICKOVER. I said it was not adequate. I do not say that we must have as many as the Russians have for our purposes. I am not advocating that we build up to their number, but I think we need more High Speed submarines immediately.

Mr. WYMAN. In your testimony last autumn you mentioned that, among other things, the Soviets used covered sheds to permit sub-

marine work regardless of weather. How many covered shipways do we have in the United States?

Admiral RICKOVER. We have four shipways at Portsmouth Naval Shipyard enclosed in one building. Other yards use portable enclosures they erect over building ways as necessary to provide protection from the weather.

Mr. WYMAN. Do you consider this to be important?

Admiral RICKOVER. It is desirable. The weather where the Soviets build their submarines is far more severe than where we build ours.

Mr. WYMAN. You have previously testified regarding comparative emphasis on submarine design work in the Soviet Union and the United States and you have commented on the adequacy of in-house design capability within the Naval Shipyard Complex. I would like to ask you, should we retain the design capability we now possess in our Naval shipyards? If we were to depend solely on private shipyards for this type of work, what assurance do we have that we would have an adequate capability of this type in times of emergency?

Admiral RICKOVER. The difficulty in our design capability does not stem from the fact that our naval yards do not have design capacity. I have been talking about a lack of design capability in the headquarters organization. This is where we have fallen down. We have enough design capacity in shipyards right now with the two private yards.

Navy yards are no longer designing submarines, and it is no longer necessary for them to do so. Their people are not qualified for this type of design work. They do design work for alterations and repairs, but not for new submarines. I don't know any reason why the private yards building submarines today would get out of building and designing submarines in wartime. In fact, in wartime the Government could require the private yards to remain in this type of work. I do not see that as a problem.

Mr. WYMAN. With regard to alterations and repairs, we have a substantial planning and engineering function for alteration and repair for submarines in the Naval Establishment, do we not?

Admiral RICKOVER. I think that was put into navy yards more to keep them going, not because it was essential that it be done in Navy yards. That same work could be done by private yards and more cheaply, in my opinion.

IN-HOUSE TECHNICAL CAPABILITY

Mr. WYMAN. In 1968, Admiral, you testified before the Joint Committee on Atomic Energy that:

The temptation is to rely on private industry, not the Navy's internal capability, to do technical work nowadays and it is thus absolutely necessary to keep a strong technical capability within the Navy."

Admiral RICKOVER. I was referring to keeping a strong technical capability in headquarters, not in navy yards. I was not talking about design capability in either private or navy yards. I was referring to the need for a strong in-house technical capability at headquarters, such as my organization.

Mr. WYMAN. Do you feel it is necessary for the navy to retain under its control an in-house capability sufficient to guarantee the maintenance and repair of our nuclear submarines?

Admiral RICKOVER. Yes, sir, and we do that in the reactor plant area; we do that right in headquarters. The issue is not navy yards. The lack of design proficiency is at headquarters.

Mr. WYMAN. Well, the function that is performed by the so-called PERA-SS operation relates to various classes of submarines in various yards all over the country, does it not?

Admiral RICKOVER. I think you are referring to planning for overhaul.

Mr. WYMAN. That is right.

Admiral RICKOVER. We could have that done at the private yards. I believe it would be easier and cheaper, in fact. Electric Boat does it right now.

Mr. WYMAN. Isn't the PERA-SS program in operation at the present time saving any money in the Naval Establishment?

Admiral RICKOVER. Based on my experience with Portsmouth in other areas, it is probably costing us extra money to have it at Portsmouth.

Mr. WYMAN. Would you at your convenience for the record supply the reasons why you say that?

Admiral RICKOVER. If you want me to.

(The information follows:)

PERA refers to overhaul planning and engineering for repairs and alterations to naval ships. This function for submarines, referred to as PERA(SS), is assigned to Portsmouth Naval Shipyard and involves certain advanced planning, material procurement, and engineering functions for overhauls of submarines assigned to other shipyards as well as to Portsmouth.

A direct comparison of the costs of Portsmouth's PERA(SS) work with engineering and planning work performed by other shipyards is not practicable because the same work is not done by two yards. Therefore, only indirect comparisons are possible to show how the cost of engineering work at Portsmouth compares with costs for similar work in private yards. For example, a comparison of recent data shows that the average basic cost of a nuclear engineering man hour at Portsmouth is higher than at either of two private yards performing submarine design work. Furthermore, experience with other types of work which have been performed by other yards as well as by Portsmouth is indicative of Portsmouth's performance. Since 1961, Portsmouth's costs for building nuclear submarines have been 25% to 125% higher than the costs for building comparable nuclear submarines in private yards. Likewise, Portsmouth's costs for overhauls of nuclear submarines have been 15% to 65% higher than for comparable overhauls in private yards.

Admiral RICKOVER. I know you are interested in Portsmouth—in fact, the Portsmouth newspaper said you were going to ask me questions about the Portsmouth Navy Yard. You are interested, as I understand, in whether the yard is to be closed or kept open. I don't make that decision. That is made by the Defense Department.

If you ask me my opinion about it, I will tell you. I would be careful though before you ask.

SHIPYARD CERTIFICATION FOR NUCLEAR PROPULSION WORK

Mr. WYMAN. Admiral, would you explain the rationale behind the certification of Naval and other shipyards as nuclear capable?

Admiral RICKOVER. Yes, sir. In deciding whether a shipyard can perform Naval nuclear work on ships, the Atomic Energy Commission has to review a number of aspects relating to the locality; what the risk is to the local population and other areas such as that. Next, the yard must have requisite facilities and third, trained people—that part of it is the most difficult.

Mr. WYMAN. Which Naval shipyards are so qualified? Qualified in nuclear capability?

Admiral RICKOVER. There are six. Norfolk, Charleston, Bremerton, Mare Island, Portsmouth and Pearl Harbor.

There are three private yards. Electric Boat, Newport News and Ingalls.

Mr. WYMAN. Could you explain for the record what is involved in granting such accreditation?

Admiral RICKOVER. I will amplify that for the record. There isn't much to amplify.

(The information follows:)

Three basic things must be done before a shipyard is considered capable of performing naval nuclear propulsion plant work. First, since testing and operation of nuclear reactors is involved, the Navy must review and obtain the comments of the Atomic Energy Commission on the shipyard site. Many factors such as the geographical location and the nature of adjacent bodies of water are reviewed to ensure the public health and safety. Second, the yard must acquire the necessary special facilities and equipment. Third, the yard must select, properly train, and qualify personnel, including engineers, technicians, and craftsmen. Once these actions have been completed, the yard is basically qualified to perform naval nuclear propulsion plant work. The most important and most demanding of the three elements mentioned above is personnel training. The yards have found that a continuous training program is necessary for the personnel engaged in nuclear work.

Mr. WYMAN. There are plans for the eventual acquisition of more nuclear vessels such as carriers, cruisers, frigates, as well as submarines. Isn't it a fact we need to retain all of the nuclear capability facilities that we have in order to keep abreast of the continuing requirements for the maintenance and operation of an expanding nuclear fleet?

Admiral RICKOVER. No, sir.

Mr. WYMAN. Why not?

SHIPYARD COSTS

Admiral RICKOVER. Because some places are more inefficient and cost too much. For example, the cost growth on the last two nuclear attack submarines built at Portsmouth is nearly equivalent to the entire \$85 million investment in the whole yard. Just two ships. The cost growth on these last two ships built at Portsmouth is roughly equivalent to the entire amount spent on the yard.

Mr. WYMAN. They were new construction jobs, were they not?

Admiral RICKOVER. Yes, sir.

Mr. WYMAN. In which there were people pulled off repeatedly for R&O jobs at the yard, isn't that a fact?

Admiral RICKOVER. I will answer that question in a general way. I will tell you this: Since 1961, nuclear submarines have cost more and taken longer to build, have been subject to longer delays and greater cost growth during construction, and, with one exception, have cost more to overhaul at Portsmouth than at any private yard or other Navy yard currently building or overhauling comparable ships. Portsmouth is the most expensive yard we have.

Mr. WYMAN. Do you make that statement in respect to new construction or with respect to repair and overhaul?

Admiral RICKOVER. I make it with respect to repair and new construction.

Since 1961, with one exception, it has cost 15 percent to 125 percent more than at private yards and 10 percent to 40 percent more than

at other Navy yards to build and overhaul comparable nuclear submarines at Portsmouth. These are facts.

Mr. WYMAN. Would you supply for the record the figures?

Admiral RICKOVER. This is right in the record. However, I will amplify the record.

(The information follows:)

COMPARISON OF COSTS TO CONSTRUCT AND OVERHAUL COMPARABLE NUCLEAR SUBMARINES AT PORTSMOUTH
VERSUS OTHER SHIPYARDS SINCE 1961

Nuclear submarine type	Construction or overhaul	Amount in percent that costs at Portsmouth are more than costs at private yards for comparable ships	Amount in percent that costs at Portsmouth are more or less than costs at other Navy yards for comparable ships
Polaris.....	Construction.....	25 to 50 percent more.....	About 20 percent more.
Attack.....	do.....	45 to 125 percent more.....	About 40 percent more.
Polaris.....	Overhaul.....	15 to 65 percent more.....	10 percent less to 40 percent more.

For new construction, the above table is based on a comparison of costs to build first submarines of the same class authorized in the same fiscal years at Portsmouth and other yards. Comparable ships completed at Portsmouth and other yards since 1961 are included. Similarly, for overhaul, the table is based on a comparison of costs of first overhauls of POLARIS submarines of the same class at Portsmouth and other yards. In only one case was the cost of a comparable overhaul at Portsmouth less than the cost at another yard; this case of a POLARIS submarine overhaul completed in 1967 is discussed below. In all other cases, the cost of comparable POLARIS submarine overhauls at Portsmouth was at least 10% greater than at any other yard. Not included in the above table are attack submarine overhauls, since different types of such submarines have been overhauled by Portsmouth and other yards.

Many factors make it difficult exactly to compare costs of nuclear submarine construction and overhaul between yards. However, based on contrasting performance on only the most comparable ships, the rough numbers in the above table are considered a valid indicator of Portsmouth's performance relative to other yards. These numbers show that it costs more to do work at Portsmouth.

Some of the high costs, cost growth, and delays at Portsmouth and other yards have occurred for reasons beyond the yards' control. Navy yards, including Portsmouth, have relatively higher fixed overhead costs than private yards because of the extent of services they provide the fleet. Navy yards are subject to external constraints and policies which affect their performance. Added work and unanticipated problems have caused some delays and cost growth at both Navy yards and private yards. The above table however shows that Portsmouth's relative cost performance has been worse than that of other Navy yards or private yards.

SHIPYARD PERFORMANCE

Admiral RICKOVER. I can tell you this. The one exception I mentioned, a POLARIS submarine overhaul completed at Portsmouth in 1967 is frequently cited by the Portsmouth yard as the example of its performance. That overhaul was completed by Portsmouth at about 10 per cent lower cost than for a ship of the same class at one other Navy yard which was doing its first major work on a POLARIS submarine. Even so, the cost of that overhaul at Portsmouth was about 15 percent greater than the cost at a private yard for the overhaul of the first ship of the same class, and about 35 per cent greater than the average cost at that private yard to do comparable overhauls of ships of the same class.

Also, Portsmouth's performance on that one overhaul was achieved at the expense of long delays and increased costs for two nuclear attack submarines under construction at the same time. Delivery of each of these two attack submarines slipped about 6 months while that POLARIS submarine overhaul was in progress at Portsmouth. By

comparison, overhauls of three other POLARIS submarines of the same class at a private yard did not delay completion of seven nuclear attack submarines under construction at that private yard. Thus, this one exception where Portsmouth costs for an overhaul were less than at one other Navy yard, was obtained only at considerable cost to the Government for other ships at Portsmouth.

I have been associated with submarines for about 40 years and I have frequently visited private yards and Navy yards during that time. My observation over that time is that Portsmouth Naval Shipyard is the most inefficient nuclear submarine yard, private or public, I have ever seen. I have observed more loafing there than at any other yard. I understand independent checks by other people in the Navy have confirmed by observations.

Since 1961, compared to other yards presently in the attack submarine construction business, Portsmouth has taken one year longer than the next slowest yard to build comparable nuclear attack submarines and three years longer than the best yard.

New construction nuclear attack submarines completed at Portsmouth since 1961 have experienced delays in completion of 28, 54, 42 and 44 months and cost growths of 25, 42, 34 and 45 million dollars respectively.

Since 1961, Portsmouth has experienced more cost growth in nuclear submarine construction than any other private yard or Navy yard for comparable ships. The last attack submarine being constructed at Portsmouth is now nearly four years late and has a projected final cost of more than 80 million dollars, a figure which is 40 to 125 per cent greater than the costs of comparable ships authorized in the same fiscal year and built at other yards.

The cost growth to date is about \$45 million on this one ship, which is a cost increase of over 125 per cent. The cost growth on the last two attack submarines built by Portsmouth is nearly equal to the Navy's total investment in that yard, about \$85 million.

Mr. WYMAN. You are aware of the fact that the role of that yard at the present time is no longer for new construction?

Admiral RICKOVER. I understand that, but the yard is no more efficient in repairs than it is in new construction, considering the higher priority that overhauls receive.

Mr. WYMAN. Admiral, how can you say that after the record at Portsmouth on the SAM HOUSTON.

Admiral RICKOVER. I have already explained that. The SAM HOUSTON is the POLARIS submarine I referred to; the one Portsmouth completed in 1967. That ship was overhauled for ten per cent less cost than for one ship of the same class at one other Navy yard, but two attack submarines then under construction at Portsmouth were delayed for about six months, and their cost increased. The SAM HOUSTON overhaul cost more than comparable overhauls at a private yard. Further, subsequent POLARIS submarine overhauls at Portsmouth cost more than at any other yard, private or Navy. This is true in spite of Portsmouth's practice of devoting disproportionate attention to the higher priority POLARIS submarine work in that yard. I suggested at the beginning that you not ask me these questions.

Mr. WYMAN. I am anxious to get these questions and your views on the record, Admiral.

Admiral RICKOVER. Well, you have them, sir.

PROGRESS ON SSN688 CLASS

Mr. WYMAN. With regard to the new nuclear attack submarine, the SSN688 class, what is the current progress? Are the design details satisfactory?

Admiral RICKOVER. The preliminary design and detailed construction specifications have been finished. The formal request to prospective shipbuilders for proposals to construct ships have been issued. The Navy expects to award the construction contracts in the Fall of 1970.

Mr. WYMAN. Would you say that we have an excess of nuclear capable shipyard capacity in the United States at the present time?

Admiral RICKOVER. We have enough capacity; it would be cheaper for the Navy to get rid of inefficient yards and do the work in the remaining yards. The Navy must do its work in the most efficient way it can today. It simply costs too much to do work at Portsmouth.

For example, if the Navy assigned construction of one of the new High Speed submarines to Portsmouth, it would probably cost 40 to 70 million dollars more than construction in a private yard. What you ought to do is have a heart to heart talk with the chairman here and get him to authorize extra money for these ships so the Navy could put them at Portsmouth and take the two to three years delay and extra cost in building them.

Mr. WYMAN. If Portsmouth were to be phased out, how would the workload now there and contemplated to be assigned there, in repair and overhaul and missile conversions, be distributed?

Admiral RICKOVER. It could be shifted to other Navy yards or to private yards. Consistent with the Defense Department order to close Portsmouth, Navy workload projections show work terminating at Portsmouth before 1975. I understand these projections do not indicate a need to keep Portsmouth open.

Mr. WYMAN. Would you supply that for the record?

Admiral RICKOVER. I have said it. There is not much more for me to supply. I don't make that decision. That is up to the Navy and the Secretary of Defense. I have not participated in that decision. I am not talking for the Navy or Defense Departments.

You have asked for my opinion and I have given you my opinion. I hoped you would not ask, then I would not have had to say all this. I have never made public statements on this matter, nor do I intend to. I have stated my opinions in this hearing only because you asked me to.

Mr. WYMAN. Has the certification "nuclear capable" been lifted for any of the other yards at the present time, Admiral?

Admiral RICKOVER. No. We have had two cases where authorization for certain aspects of the work have been held up.

Mr. WYMAN. How about Mare Island?

Admiral RICKOVER. In one of these cases, Mare Island presently is held up for certain radiological work, but that should be cleared up in the near future.

Mr. WYMAN. Did Pearl Harbor also have trouble?

Admiral RICKOVER. Yes, sir. They had trouble. Every yard has had trouble. Over the years, Portsmouth has had more trouble than the others.

I am sorry, sir. I really hoped you wouldn't ask these questions.

Mr. WYMAN. No, I think it is important, Admiral, to have this on the record. If these things are being stated within the Naval establishment, I think it is important to have them stated before this committee so that I can present these to other witnesses before this committee and within the Department and have an analysis of them, because it is my understanding that the statement you made with respect to cost overruns do not apply to repair and overhaul or conversion functions.

Admiral RICKOVER. As I indicated before, I did not participate in the decisions within the Navy and Defense Departments regarding whether the Portsmouth Navy Yard should be closed. I do not know all that was considered in arriving at those decisions. I am giving you the facts as I know them and my own views of Portsmouth's performance over the years. With respect to costs, I believe when you refer this testimony to the Navy, you will find that the statements I have made to you will be corroborated.

Mr. WYMAN. I am not for one moment undertaking to be critical of your integrity, Admiral. We all respect you and I think the whole country does, but what I am trying to say is that with the SAM RAY-BURN for example, in there at Portsmouth now for a conversion, and with the ongoing programming for R.&D. work that is scheduled to come in there, it does seem to me that the record the Portsmouth Naval Shipyard has been making in recent years is a positive accomplishment in a constructive direction in terms of cost. The future requirements of the nuclear submarine fleet in being, as you envision it and as we are going to expand it, means that we should retain the existing deep drydock facilities that are there for repair and overhaul of the nuclear submarines.

REDUCTION IN SHORE ESTABLISHMENT

Admiral RICKOVER. We will have to put these facilities in elsewhere but in a few years we will more than make up for them and we will start saving money for the Navy.

I can imagine a situation where one day the Chief of Naval Operations presses the buzzer and his aide comes in. He says to his aide, "Captain Jones, you know that last ship in the Navy? We have a job for it to do," and the aide clicks his heels, salutes and says, "Sir, we just had to lay up that ship to take care of the Navy shore establishment." That is the issue we are faced with.

Our main job is not to protect the Navy shore establishment or particularly inefficient yards. We can not. The Navy has not been able to obtain the money it needs to build and to maintain its ships deemed essential for the fleet. In fact, the Navy is being required to reduce its forces. There is going to have to be a reduction in the Navy shore establishment too.

May I amplify my remarks for the record, sir?

Mr. WYMAN. I wish you would, surely.

Admiral RICKOVER. I will try to give you fuller answers in the record. If you have additional questions—

Mr. WYMAN. They will be furnished you by the reporter.

Mr. ADDABBO. Before closing, I wish the committee to know that on May 23rd Admiral Rickover will be honored by the National Steuben

Society of America with such people as former President Hoover and General MacArthur and I want to congratulate him at this time.

Mr. MAHON. We want to join in that.

SPEECH TO NAVY LEAGUE IN CHARLESTON, WEST VIRGINIA

Mr. Slack said he would be present today. He was in West Virginia for a primary election and wasn't able to return.

Admiral RICKOVER. I had a very enjoyable time in his district. I delivered a speech there about defense and with your permission I would like to have that included in the record.

Mr. MAHON. We will be pleased to have you place it in the record. (The speech follows:)

"AN EFFECTIVE NATIONAL DEFENSE—WHY?" VICE ADMIRAL H. G. RICKOVER, U.S. NAVY, GIVEN AT THE JOINT MEETING OF THE CHARLESTON EXCHANGE CLUB AND THE NAVY LEAGUE OF CHARLESTON, WEST VIRGINIA, TUESDAY, APRIL 27, 1970

(This speech reflects the views of the author and does not necessarily reflect the views of the Secretary of the Navy or the Department of the Navy)

Congressman Slack has asked me to speak to you and to give you an estimate as to where we are and where we are going and what needs to be done in a military way in these times of turmoil and peril. There is, as you know, a division of opinion among the American people regarding the necessity of reinforcing our military strength.

The first point I would like to make is that in judging between conflicting views on this matter, the deciding factor must be their relevance to the world at it is, not as we would it to be. Granted the hideousness of modern war, can we deduce therefrom that mankind is now wise enough to forego recourse to arms? A look at history should put us on guard against those who claim that humanity has now reached a state where, in formulating national policy, the possibility of armed aggression can be safely disregarded.

I am reminded of the intense opposition to the Navy's 15-cruiser bill in 1929. It was argued by many that with the signing of the Kellogg Peace Pact the year before it was no longer necessary to build new warships. And this in light of the lessons of World War I which erupted despite the various Hague peace treaties. These ships were of inestimable value in helping us win World War II. The war itself was prolonged because Congress—heeding the "merchants of death" argument—in 1939 prohibited shipment of war materials to Britain and France.

Then, too, weight must be given to the credentials of those propounding opposite views. Are they public servants charged with the awesome responsibility to secure our country against foreign conquest, or are they private individuals not accountable to anyone for the consequences of their opinions; are they private individuals who feel free to express their personal abhorrence of war and to agitate, within the screen of rhetoric for a reduction of the financial burden that military preparedness imposes on the taxpayer? Would the majority of the electorate accept their argument that, given our unmet domestic needs, we cannot afford an effective defense position vis-a-vis our potential adversaries? Or that war is so horrible that it is better to suffer defeat than to fight?

There can surely be no doubt that the overwhelming majority of the American people are opposed to relinquishment of our defense capability, recognizing full well that there will then be no one left to prevent the takeover by Communist power. Whether one takes the optimistic view that a permanent East-West detente can be negotiated, or the pessimistic view that ultimately we shall have to fight for our liberties, this Nation has no future if it allows itself to be out-matched militarily.

As for the high cost of preparedness, the \$70 billion dollars allocated to defense for the fiscal year 1971 is the smallest percentage of our Gross National Product in 20 years—just 7.2 percent. Defense expenditures in this upcoming fiscal year will represent only 37 percent of our total Federal budget outlays, compared to 44 percent in fiscal year 1969. Omitting the costs of the Vietnam war and allowing for inflation, our Armed Forces have less buying power today than they had two decades ago. In the Soviet Union, on the other hand—according to a

report of the Congressional Subcommittee on Foreign Economic Policy issued in June 1968—resources have been diverted from the farm sector to defense, where outlays rose dramatically in 1966 and 1967, after remaining static since 1962. The report talks about their new preoccupation with national security. And you must bear in mind that actual war costs absorb but a small portion of their expenditures while we are spending many billions of dollars a year in Vietnam.

If history teaches anything it is surely that weakness invites attack; that it takes but one aggressor to plunge the world into war against the wishes of dozen of peace-loving nations if the former is militarily strong and the latter are not. Yet there are those who deprecate the need to maintain military supremacy or at least parity with the Communist empires, on the grounds that other nations have accepted a decline from first to second or third rank and that we ourselves for most of our history were militarily a second-rate power yet secure enough within our borders. They forget that we then profited from the Pax Britannica, even as the former great powers of Europe who have lost their defense capability enjoy political freedom today only because we are strong enough to defend them and ready to do so. What it means to be weak and without American protection should be evident to all who observed the tragic drama of Czechoslovakia "negotiating" with Russia the continuing subjugation of her people.

The concept that a "weapons race" is the cause of war was a widely held theory prior to World War I. Many historical studies of the causes of that war have disproved this fallacy. And certainly it cannot be claimed that World War II was caused by an armaments race. In fact that war might well have been prevented had Britain, France, and the United States been better prepared. It was for this very reason that at the end of World Wars I and II we vowed never again to be caught unprepared. Whether or not to use our military forces is decided by our civilian leaders, not by the military. The military is asked for advice, but the decision is that of the civilian leadership.

Our Navy is not a direct threat to any country. Its strength lies in its ability to be deployed rapidly at distances from the United States. Its very existence as a "fleet in being" serves to deter those who might otherwise think lightly about starting hostilities.

Many valuable lessons for today can be drawn from our experiences in past wars. For example, when Germany decided to invade Russia in 1941, their staff studies showed that the Soviet Union would be defeated in eight weeks, ten weeks at most. Our military attaché in Moscow advised the War Department that the war would be over in three months. I well remember that the German estimate for the length of World War I was also three months.

These estimates should place us on guard against those who believe that long, worldwide wars are no longer possible. Even the present "minor" Vietnamese war has endured for longer than the foremost defense civilians and our military leaders predicted. Having served in both World Wars, I may perhaps be forgiven for not being as optimistic about permanent peace, the beneficence of unilateral disarmament, and the current belief held by many—especially our "intellectuals"—that the sheer horror of a long war will compel its avoidance.

A brief look at some of the grim statistics of World War II will show why the prevention of war is an order of magnitude less costly than engaging in it. The money we save today in lowering our defenses will surely be but a pittance compared to what it will cost us if we are not strong enough to deter war.

Russia was invaded in June 1941. By winter of that year the cost of the war was already truly colossal. To the 6 million, possibly as many as 8 million military losses in killed and captured were added millions of civilian casualties, a million or more dead of starvation alone in Leningrad during the winter of 1941-1942.

By the end of 1941 the Soviet Union had lost 47 percent of her inhabited places, territory in which 80 million persons had lived. That territory had produced 71 percent of the Soviet pig iron, 58 percent of its steel, 63 percent of its mined coal, and 42 percent of its electricity. By the end of their 1941 offensive the Germans had occupied areas that had produced 38 percent of the grain and cattle and 84 percent of the Soviet sugar.

The total military service deaths on the Soviet side reached more than 12 million. The West German estimate of Soviet military losses is 13.6 million, including 1.75 million permanently disabled. The war also cost the Soviets some seven million civilians. The losses, civilian and military, of Finland, the Baltic States, and of eastern and southeastern European countries added millions more.

The German military dead in World War II number between three and 3.5 million; their civilian dead 1.5 million.

The figures I have stated are vastly increased by the military and civilian dead of Great Britain, France, the United States, Austria, Hungary, Italy, Japan, China, and of many more countries. Poland lost one-quarter of her entire people. The total of all soldiers killed in World War II was 26.8 million.

Unfortunately, few people study history, which accounts for the truism that history repeats itself. In fact, not many of our people understand the devastation wrought by World War II. That war ended a quarter of a century ago. Half the people in the United States were not alive then; they, as well as people then in their early teens had no direct connection with the war. I believe it is not too farfetched to say that 75 percent of the American people have no vivid memory of what a world war really means. The lesson of that war, its page of history, is worth a book of logic.

You may remember Blackstone's statement that security of the person is the first, and liberty of the individual the second "absolute right inherent in every Englishman." Just so, the first right of every American is to be protected against foreign attack, and the first duty of Government is to keep our Nation alive. Given the world situation, this calls for maintenance of a defense capability adequate to discourage potential aggressors. President Nixon has said: "... it is essential to avoid putting an American President, either this President or the next President, in the position where the United States would be second rather than first, or at least equal to any potential enemy." He has also said, in discussing the Cuban Missile Crisis: "I do not want to see an American President in the future, in the event of any crisis, have his diplomatic credibility—impaired because the United States was in a second-class or inferior position. We saw what it meant to the Soviets when they were second."

Let me also quote from the speech President John F. Kennedy took to Dallas with him on November 22, 1963, but which an assassin's bullet kept him from delivering. "Our adversaries have not abandoned their ambitions, our dangers have not diminished, our vigil cannot be relaxed."

Turning back to the present, you may ask what needs to be done in these times of turmoil and peril. The blunt situation facing us is that Soviet Russia is actively working towards a military might superior to our own. Moreover, we ourselves are deliberately putting brakes to our economic expansion. Our two basic assets are thus diminishing simultaneously.

However, as I am most familiar with the threat posed by the Soviets to our naval power, I would like to confine myself to this area, and specifically to submarines. But the logic of what I say is valid for our land, sea, and airpower as well.

The Soviets are embarked on a program which reveals a singular awareness of the importance of seapower, and an unmistakable resolve to become the most powerful maritime force in the world. They demonstrate a thorough understanding of the basic elements of seapower: knowledge of the seas, a strong modern merchant marine, and a powerful new navy. They are surging forward with a naval and maritime program that is a technological marvel.

At the end of World War II, the Soviet Union had a fleet of 200 diesel-powered submarines. They then embarked on a massive building program, producing over 560 new submarines through 1969, at least 70 of which are nuclear-powered. During the same period, the United States built 104 submarines, 87 of them nuclear-powered. The Soviets have scrapped or given away all their World War II submarines as well as some built since. They now have a new submarine force of about 350; we have 146, which includes 59 diesel submarines most of which are of World War II vintage. Thus the Soviets have a net advantage of about 200 submarines. It is estimated that by the end of this year they will have a numerical lead even in nuclear submarines.

To achieve this the Soviets greatly expanded and modernized their submarine building facilities. Just one of their numerous submarine building yards has several times the area and facilities of all U.S. submarine yards put together. They use modern assembly line techniques under covered building ways, permitting large scale production regardless of weather conditions.

In the single year 1968, the Soviets put to sea a new type ballistic missile submarine as well as several new types of nuclear attack submarines—a feat far exceeding anything we have ever done. We, in fact have developed only one new type in the past ten years. In looking to the future, it is estimated that by 1974, they will add about 65 nuclear-powered submarines to their fleet, whereas we will add but 23—further increasing their numerical superiority. In the

case of the ballistic missile submarine the Soviets have undertaken a vigorous building program to surpass our own Polaris fleet of 41. They have completed seven of their new Polaris-type submarines, and have the capability to turn out one a month. We have no Polaris submarines under construction or planned. We must assume that by the 1973-74 time period they will be up to us in Polaris submarines.

Numerical superiority, however, does not tell the whole story. Weapon systems, speed, depth, detection devices, quietness of operation, and crew performance all make a significant contribution to the effectiveness of a submarine force. From what we have been able to learn during the past year, the Soviets have attained equality in a number of these characteristics, and superiority in some.

In order to achieve the results so far attained in all areas of modern technology the Soviets had to develop their most important resource—technical and scientific personnel. The Soviet educational program enjoys the highest national priority. The statistics on the total numbers of Soviet degree graduates are extremely impressive. The U.S. National Science Foundation data indicates that in 1966 alone, 168,000 Soviet engineers were graduated; the United States, on the other hand, produced but 36,000. With specific application to the Navy, the Leningrad Shipbuilding Institute, just one naval institute of several, had over 7,000 students in 1966 studying naval architecture and marine engineering. I doubt we had over 400 enrolled in these subjects in all U.S. colleges.

While we cannot specifically count the number of Soviet scientists and engineers devoted to naval work, it is apparent that they have created a broad technological base. They have committed extensive resources to support development of their naval forces. The steady build-up of the Soviet submarine Navy from an ineffective coastal defense force at the end of World War II to the world's largest undersea navy today deserves admiration; also it should deeply worry every American. By the end of this year we face the prospect of losing the superiority in nuclear submarines we have held for many years. The threat posed by their submarine force—with their new ballistic and cruise missile launchers and new attack types, is formidable. If more sophisticated types are added in the near future, as is likely considering their large number of designers and their extensive facilities, the threat will rapidly increase.

The Russians are in the Mediterranean. They operate regularly and continually in the North Atlantic and the Norwegian Sea. Russian naval units now are being seen with regularity in the Indian Ocean and off both coasts of Africa. They are in the Pacific, the Arctic, and the Antarctic. The swimming Russian bear is not yet 10 feet tall, but he is 5 feet, 8 inches, and growing rapidly. He has not yet wrested supremacy of the seas from the free world but he is making a very determined effort to do so. If we are not alert, we may find tomorrow that our strength has been checkmated at sea.

In this situation, a critical question is whether our Polaris deterrent will remain effective in the mid-1970's in the face of this mounting Soviet threat. To this question, there is no simple answer.

Let me first say that based on the best evidence available, I believe that today our Polaris submarines are safe from a massive, neutralizing blow. Further, I am not aware of any valid information indicating that the Soviets possess a means to track and destroy our Polaris submarines while they are on station. However, there is no assurance that this situation will prevail for long.

There is, in fact, evidence that the Soviets are actively engaged in a determined effort to acquire the capability to neutralize or destroy our Polaris force. They have developed and they continue to develop faster and quieter submarines. They are experimenting in all phases of submarine and antisubmarine warfare. We are not.

It is clear that a major objective of their naval progress is to invalidate our own Polaris system.

Given the recent Soviet progress in undersea warfare and the sheer magnitude of their nuclear submarine program, the conclusion is inevitable that, unless we are willing to match their effort, they will surpass us in this during the 1970's.

Of course, in the present era of rapid technological change accurate prediction of future military developments is difficult, if not impossible, even for such a relatively short period as five to ten years. It is equally difficult to predict the outcome of future military engagements, since these are dependent on successful exploitation of the latest technological advancements. All we can do is learn what we can of the progress being made by other nations in the areas related to submarine and antisubmarine warfare and then to compare this with our own progress.

The superiority of a given weapon system is never static. The history of warfare is an ever changing contest between weapon and counterweapon. Whenever man invents a new weapon, two things happen immediately. First, his potential adversaries start to develop a counterweapon. Second, improvements are made in the original weapon to make it even more effective. This was the case with the bow and arrow, gunpowder, battleships, airplanes, rockets, et cetera.

The battleship is a good example. In 1907 when the British DREADNOUGHT, the world's first modern battleship put to sea, it was hailed as "invincible." It had armor plate thick enough to stop any naval shell then in existence. Soon afterward other countries built their own battleships with large guns and heavy armor. The British then developed the destroyer to protect the battleship by firing torpedoes against opposing battleships. The other side, of course, soon had its own destroyers. The battleship then was given the capability of carrying airplanes to increase its range of visibility; this added the new element of airpower to the battleship.

Although it became evident during World I to farseeing officers like General Billy Mitchell that aircraft constituted a new and formidable weapon against the battleship, it nevertheless took a long time for those who had faith in the battleship to accept this and prepare against the danger. Even as in 1907 it was impossible to predict how long the battleship would remain "invincible", so is it today impossible to predict how long the Polaris submarine will remain invulnerable.

As in the case of the battleship, the competition between the submarine and its foes has seasawed, ever since the submarine proved its worth in World War I. As advances have been made in submarine design since that war, progress has also been made in developing antisubmarine warfare.

Submarines have the protection of the ocean depths. When submerged they cannot be seen by the human eye or by radar. The only way we know at present to detect a submerged submarine is by the sound it makes. For years, groups of scientists and engineers have tried to make submarines quieter, while other groups have worked just as hard to develop more sensitive listening devices. This technological battle continues.

With the advent of nuclear propulsion, the submarine has been able to operate submerged at high speeds for long periods of time; this gave the nuclear submarine the edge. However, great strides are being made in the mobility of anti-submarine forces and in their capability to detect and destroy submarines. In fact, the nuclear attack submarine itself is now being used as an antisubmarine weapon.

We do not know, of course, how these developments will work under actual war conditions; nor do we know how effective our Polaris submarines would be in an encounter with an enemy antisubmarine force—be it air, surface, or subsurface—or how effective our own antisubmarine forces would be against the latest Soviet nuclear submarines.

The answer to the question concerning the survivability of our Polaris submarines in the mid-1970's depends on whether we can regain the advantage we had in the past. Will our progress in undersea warfare during the 1970's match that of the Soviet Union? Can we assume that our Polaris system will be the first weapon in history to remain invulnerable? The developments I have cited should caution us against making such an assumption.

The Soviets have frequently announced their intent to be the preeminent world power. Why do we not believe them? Hitler in "Mein Kampf" plainly announced his intent to dominate the world. We did not believe him either—until it was nearly too late. Admiral Gorshkov, commander in chief of the Soviet Navy, said recently: "The flag of the Soviet Navy now flies proudly over the oceans of the world. Sooner or later the United States will have to understand that it no longer has mastery of the seas." And just recently the Russians announced a projected 50 percent increase in the size of their merchant fleet. These facts should be weighed when assessing the judgment of those who argue for a reduction of American military power while Soviet military power is rapidly expanding.

Today it is fashionable to advocate a reduction in defense and to use the money saved for domestic purposes. Those who so advocate do not test their theories or their deductions by events. While men are perishing from the eruption of a volcano they are blissfully beating time and listening to the music of the heavenly spheres and marveling at the harmony. Meanwhile Soviet Russia is preparing a military establishment which, by 1975, will be ahead of ours in

virtually all respects. And given the existing sentiment and political conditions, there is nothing we can do about it.

The bearer of bad news is always punished. In ancient times, he might be put to death. Today he becomes "controversial" and unpopular. But if there is one subject on which the American people must know the truth, however unpalatable, it is our position vis-a-vis the Soviets.

"Peace in our time!" declared Neville Chamberlain. And what was to follow was six years of one of the bloodiest conflicts ever experienced by mankind—a conflict that nearly wrecked Western Civilization. Let us hope the lessons of appeasement and unpreparedness have not receded into the dim shadows of past victory.

CONCLUSION

Admiral RICKOVER. I am sorry Mr. Flood isn't here. He was honored Sunday at Georgetown University by award of the degree of Doctor of Science. I was hoping he would be here today so that I could offer him my personal congratulations.

Mr. ANDREWS. Mr. Chairman, before I go I would like to say I have been on this committee for many years and one of the highlights of the committee hearings, Admiral, is your appearance here. I think you are a great American. I admire you and I thank you for coming up.

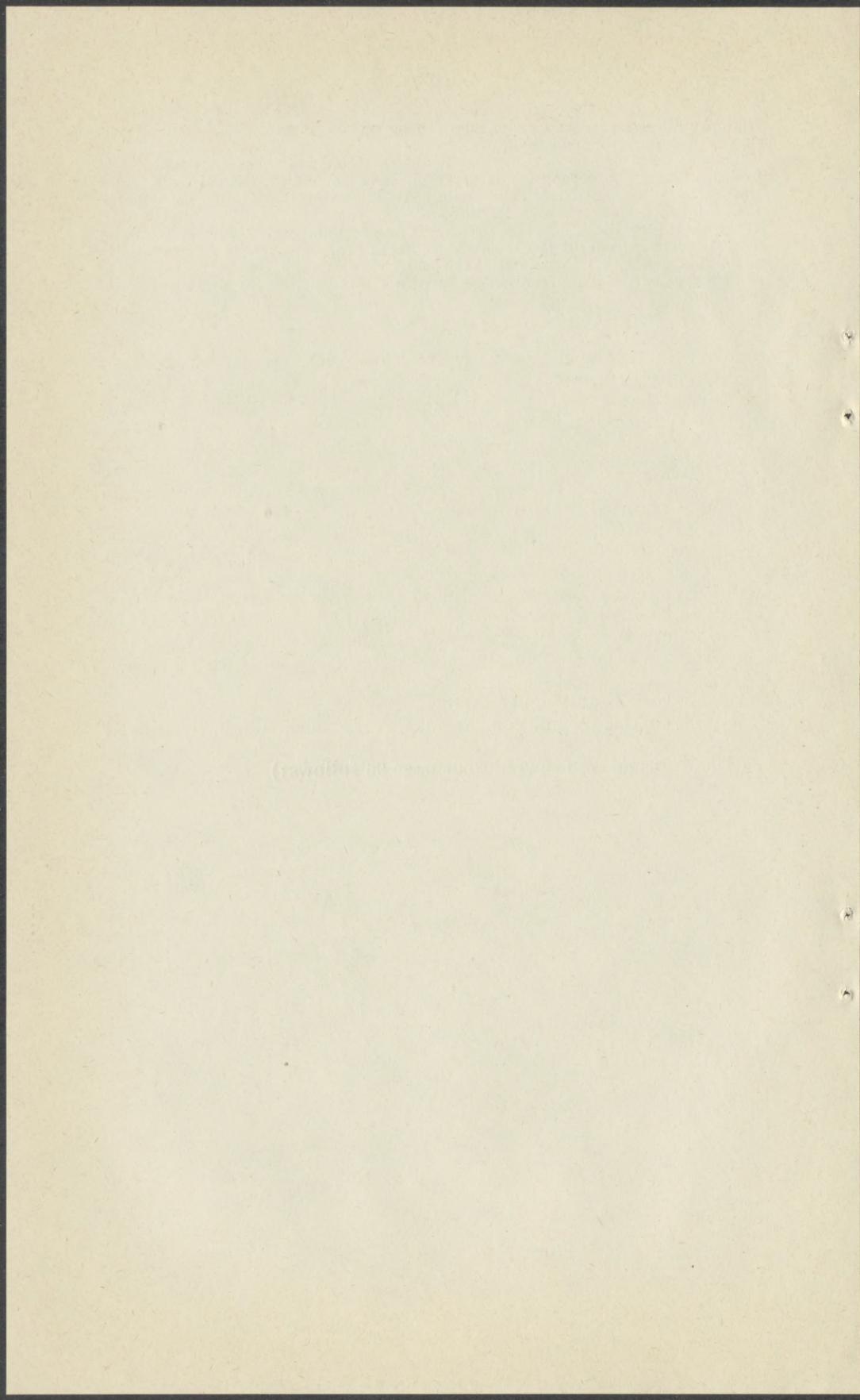
Mr. MAHON. We all thank you, Admiral, for your appearance here.

Admiral RICKOVER. When you read words in cold print, I don't think they convey the feeling that I have for you and for all members of this committee. I believe you know that. It is the greatest privilege I have to be able to come before this body and for you to devote the time you take from your busy lives and listen. I wish I could do better. I am trying to do the best I can. I regret I haven't been more successful.

Mr. MAHON. Thank you very much.

Mr. MINSHALL. Thank you, Admiral, very much. We have enjoyed it.

(The information referred to at page 96 follows:)



APPENDIX

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C. 20360.

[In reply refer to OSH Ser 1337, 30 Apr 1969]

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS & LOGISTICS).

Via:

- (1) Commander, Naval Ship Systems Command.
- (2) Chief of Naval Material.

Subj: Review of Controls over Construction Costs of Nuclear-Powered Ships at (Shipyards B).

Encl: (1) NAVSHIPS 08 Trip Report dtd 25 April 1969.

1. The Naval Ship Systems Command is presently involved in (several) long term nuclear shipbuilding programs at (Shipyards B). These programs are expected to result in negotiated contracts for a large amount of Naval nuclear ship construction work over the next several years. (Shipyards B) is presently constructing (several ships) under a fixed-price incentive contract. In addition, under letter contracts, (the shipyard) is building (one ship and) procuring long leadtime components for a (number of other ships).

Since the Government bears nearly all the risk of cost overruns under these contracts, I recently had two of my representatives conduct a limited review to find out how (the shipyard) controls shipbuilding costs on Navy contracts. A report covering this review is attached as enclosure (1).

2. This enclosure indicates the following deficiencies in controls over shipbuilding costs at (Shipyards B):

a. *Cost Controls.* The present (Shipyards B) cost control system cannot be relied upon to control costs adequately under Navy shipbuilding contracts. A recent (shipyard) internal report stated "there is evidence of widespread mischarging of costs." There seems to be no comprehensive system of labor checks to ensure that work is charged properly. These deficiencies are important, particularly in connection with cost-type contracts, fixed-price-incentive contracts, and letter contracts. The Government bears most if not all the risk of cost overruns under these types of contracts. (The shipyard) management acknowledged that their present cost control system is deficient and indicated that this problem had been recognized as early as 1966. Nevertheless, (the shipyard) has not yet established an effective cost control system for naval ship construction. Enclosure (1) indicates that implementation of an improved cost control system for (ship construction) has been deferred until 1970. Meanwhile, construction of these ships and work under other Navy contracts where the Government bears the risk of cost overruns are proceeding without effective cost controls.

b. *Procurement Practices.* (Shipyards B's) procurement system cannot be relied upon to obtain minimum prices for material and equipment. (The shipyard) tends to use competitive procurement procedures in non-competitive situations. For example, (the shipyard) recently submitted for NAVSHIPS 08 technical review sole source procurements totaling \$1.7 million for which they had not obtained and evaluated supplier cost and pricing data in accordance with requirements of the Truth-in-Negotiations Act (PL 87-653). As a result of the NAVSHIPS 08 review, (the shipyard) was required to obtain the necessary data. After obtaining cost and pricing data, the company was able to negotiate price reductions totaling \$230,000 on these procurements—13% less than the original prices it had recommended and which were forwarded without any recommendation by the Supervisor of Shipbuilding. Enclosure (1) indicates that (the shipyard) is still not obtaining and using supplier cost and pricing data in all cases where this is required by current Department of Defense procurement regulations.

c. *Navy Review of (Shipyard B's) Procurements.* The Navy's procedures for reviewing (Shipyard B's) procurements have been ineffective. Even though materials and equipment account for about 40 percent of the costs of the shipbuilding contract, the Navy does not review individual subcontracts, regardless of dollar amount or degree of competition. Instead, about once a year, the Navy reviews the (the shipyard's) procurement system and based upon these reviews, has invariably authorized (the shipyard) to place subcontracts without specific Government review and approval of individual subcontracts.

In November, 1968, a special Naval Ship System Command audit team reviewed the (the shipyard's) procurement system and concluded:

The contractor's procurement system is *adequate, affords maximum protection* of the Government's interests and assures procurement of materials at the *lowest price* consistent with quality and required delivery schedules. (Emphasis added.)

My experience, to the contrary, is that the (the shipyard's) procurement system cannot be relied upon to obtain minimum prices for material and equipment. Considering the deficiencies found in recent months, I consider that Government review of individual subcontracts is essential if the Navy is not to be charged considerably higher costs than warranted for equipment and material.

d. *Pricing and Administration of Change Orders.* Neither (Shipyard B) nor the Government is presently able to determine the actual cost of changed work on ship construction contracts. Change orders have generally been found to increase shipbuilding contracts by 12 to 16 percent. Yet there is no way of verifying whether change orders have been over-priced. This is so because there is no record of actual costs for the work required to accomplish the changes. Further, as much as two-thirds of the estimated cost of a change is composed of standard "add-on" factors such as supervision, overtime, and general and service labor although it may not be proper to change all of these "add-ons" to every change.

e. *Internal Audits and Appraisals.* (Shipyard B) does not appear to have a centralized program for systematic examination and appraisal of its internal operations. Their internal auditors seem to be concerned primarily with financial type auditing such a payroll accuracy verification, rather than with the efficiency of shipyard operations or effectiveness of cost control procedures.

3. Competition for nuclear-powered ship construction contracts is limited and in many cases non-existent. Since profits on shipbuilding contracts are computed as a percentage of costs, high shipbuilder costs result in higher profits in the long run. Under these circumstances the Navy cannot, in my opinion, afford to rely on shipbuilders to reduce ship construction costs.

4. Government contracts account for about 80 to 85 percent of the total work at (Shipyard B). Since 1962, (the shipyard) has received over \$1.2 billion in Navy prime contracts. From my experience and as confirmed by the findings in enclosure (1), it appears that (shipyard) management, the Supervisor of Shipbuilding, and the Defense Contract Audit Agency have not taken adequate action to protect the U.S. Government against higher than necessary costs.

5. In view of the large value of Navy shipbuilding contracts (at (Shipyard B)) I consider that as a minimum the following action should be taken:

a. (The shipyard) should not be permitted to delay until 1970 implementation of effective cost controls for construction of (the current ships) and for other contracts where the Government bears the risk of cost overruns. Further, (the shipyard) should be required to establish an effective system to insure that charges for naval ship construction work are valid and accurate.

b. The Navy should review each major purchase order over \$100,000 and smaller orders on a spot check basis prior to order placement to insure that prices are reasonable and that (the shipyard) is complying in all respects with the requirements of the Truth-in-Negotiations Act.

c. The Navy should require (the shipyard) to maintain records of actual costs of work to accomplish change orders, particularly in situations where the change must be accomplished before a final change order price can be negotiated. (The shipyard) should also be required to keep cost records which adequately support the reasonableness of pricing factors used in estimating the cost of changed work.

d. The Navy should require (the shipyard) to establish an effective program of internal reviews and appraisals of its operations. The Supervisor of Shipbuilding should be required to review and monitor this program. In addition the

Supervisor should establish his own independent program of formal appraisals of (shipyard) operations that affect prices of Navy contracts.

6. The conditions described in the attached report should be of serious concern to the Navy. These problems are not unique to (shipyard B). If reviews similar to this limited review at (this shipyard) were conducted at other shipyards, the findings would be substantially the same.

7. It is becoming more difficult for the Navy to obtain authorizations for the ships it needs in view of the criticism by the Secretary of Defense and various Congressional committees over the constantly increasing costs of constructing naval warships. They have made repeated statements expressing dissatisfaction with the Navy's management of its shipbuilding programs and the resultant delays and cost increases. I am concerned that unless immediate steps are taken to improve control of shipbuilding costs, authorization of needed Navy ships will be curtailed.

H. G. RICKOVER,

Deputy Commander for Nuclear Propulsion.

Copy to Assistant Secretary of the Navy (Installations & Logistics), Chief of Naval Material.

[Enclosure (1) to NAVSHIPS 08H, Memo Ser 1337 of 30 Apr 1969]

APRIL 25, 1969.

TRIP REPORT

Subject: Review of (shipyard B's) Cost Controls, Budgeting Procedures and Procurement Functions.

Dates of Visit:

9-19 December 1968.

7-11 April 1969.

Place: (deleted).

Persons making trip:

(Deleted)

(Deleted)

Naval Ship Systems Command, Nuclear Power Directorate.

Organizations visited and persons contacted:

1. (Deleted)

a. Financial:

(Deleted) Vice President & Comptroller.

(Deleted) Computer Center Director.

(Deleted) Asst. Mgr. Data Collection & Control.

(Deleted) Internal Auditor.

b. Operations:

(Deleted) Asst. General Mgr., Production and Budget Control.

(Deleted) Budget Control Supervisor.

(Deleted) Manager of Nuclear Construction.

(Deleted) Asst. Superintendent, Machine Shops Division.

(Deleted) Asst. Foreman, Production Control, Machine Shops Division.

(Deleted) Purchasing Agent.

(Deleted) Buyer.

(Deleted) Buyer.

(Deleted) Buyer.

c. Atomic Power Division:

(Deleted) Chief of Nuclear Engineering Operation.

(Deleted) Chief Engineer Nuclear New Design.

(Deleted) Operations Staff Design Supervisor.

d. Production:

(Deleted) Production Manager.

(Deleted) Contracts Division Manager.

(Deleted) Cost Engineer.

(Deleted) Industrial Engineering Division Manager.

(Deleted) Asst. Cost Engineer (New Construction).

2. SUPERVISOR OF SHIPBUILDING, USN

(Deleted) Commanding Officer.

(Deleted) Contracting Officer.

(Deleted) Deputy Contracting Officer.

(Deleted) Contract Negotiator.

3. DEFENSE CONTRACT AUDIT AGENCY, RESIDENT OFFICE, (Deleted)
 (Deleted) Resident Auditor.
 (Deleted) Auditor.
 (Deleted) Auditor.
4. PITTSBURGH NAVAL REACTORS REPRESENTATIVE (USAEC), (Deleted)
 (Deleted.)

1. *Purpose:* The purpose of these trips was to perform a limited review of how (shipyard B) controls shipbuilding costs on Navy contracts, how costs are charged, and what controls are in effect for procurement of materials and equipment for these contracts.

2. *Background:* NAVSHIPS is presently involved in (several) long term nuclear shipbuilding programs at (shipyard B) which are expected to result in negotiated contracts for a large amount of naval nuclear ship construction work over the next several years. On 13 June 1968 (shipyard B) received a negotiated fixed-price-incentive-type contract from the Navy for construction of (two) naval nuclear ships of one class and work on these ships is in progress. Also, (the shipyard) is constructing (one ship of another class) under a letter contract which was awarded on 31 March 1967. Under another letter contract (the shipyard) is procuring long leadtime components (for a third class of ships). Under the terms of these contracts, the Government bears nearly all the risk of cost overruns. In view of this assumption of cost risk by the Government, Vice Admiral H. G. Rickover requested that we perform a limited review of (the shipyards) cost controls and procurement practices to determine whether these controls could be relied upon to ensure economical ship construction.

3. *Summary:* Our review disclosed several areas where (the shipyard) may not have effective cost controls over shipbuilding work and where procurement practices may be resulting in ship construction costs that are higher than necessary. In addition, we believe that the Supervisor of Shipbuilding, USN, and (the shipyard's) practices in pricing and administering change orders are not adequate to ensure reasonable prices or effective cost control for changes to ship construction work. Finally, it appears that (the shipyard) has no centralized internal audit and appraisal program to review and report on the effectiveness of its operations. These areas are discussed in greater detail in the following paragraphs.

4. *Cost controls:* We reviewed payments made on several existing firm-fixed price Government contracts to see whether (shipyard B) was experiencing cost overruns where the full risk of such overruns was borne entirely by the company in accordance with the terms of the contract. Contracts for construction of (several previous ships) were included in the contracts reviewed. We found that as of March 1969, projected costs for (deleted) exceeded current contract price by about \$5 million. A December, 1968, internal (shipyard) report on direct labor budgets showed a projected 311,000 hour overrun on (deleted) and a 150,000 hour overrun on (deleted). Based on discussions with the Vice-President for Finance, the Assistant General Manager for Production, and Operating Division management personnel and our own limited review of cost control by (shipyard) management, it appears that:

a. The (shipyard's) budget control system does not effectively use the cost estimates developed for negotiating ship prices as budgets for controlling actual costs during ship construction. Further, under the present budget system, it is possible to meet all working level budgets and still overrun the ship construction contract.

b. About 50 percent of all (shipyard) construction work is presently being performed without any form of cost budgeting.

c. About 70 percent of ship construction costs are allocated to the various ship contracts by shop working level supervisors. A recent (shipyard) internal report stated there is evidence of widespread mischarging of costs. There seems to be no comprehensive system of labor checks to ensure that work is costed properly.

d. Approximately 7 percent of total construction labor costs for naval ships are charged as miscellaneous labor. Further, there is a labor category called "general and service labor" which can be allocated to contracts as either direct or indirect charges. There appears to be no accurate way to determine whether these labor costs are correctly charged and whether these charges are reasonable.

Based on our limited review, it appears to us that the present (shipyard B) cost control system cannot be relied upon to adequately control costs under shipbuilding contracts. This deficiency is particularly important in connection with

cost-type, fixed-price-incentive, and letter contracts where the Government bears most if not all the risk of cost overruns.

As early as 1966 (shipyard B), appears to have recognized that there were serious deficiencies in their cost control procedures. Discussions with management personnel indicated that a revised budget control system is presently being tried in a few of the operating division shops. (The shipyard) had planned to fully implement this revised budget control system for (ships under construction) by August 1969, but this has now been delayed until 1970. Meanwhile, there appears to be no effective cost control system for the (ships under construction).

We consider the observed (shipyard) cost control deficiencies to be particularly serious, warranting immediate attention by high level management at (shipyard B), the Defense Contract Audit Agency, and the Supervisor of Shipbuilding, USN—all of whom have responsibility for insuring effective cost controls on Government contracts. It did not appear to us that this matter is receiving adequate attention from the Supervisor of Shipbuilding, USN, or the DCAA Resident Auditor at (the shipyard). No one in these Government offices that we talked to appeared to have a detailed knowledge regarding (shipyard) studies and planning with respect to improving its cost controls and no one appeared to be pressing (shipyard B) for progress in establishing effective cost control procedures.

5. *Government Reliance on Approved (shipyard B's) Procurement System:* Under the terms of NAVSHIPS cost-type and incentive contracts with (shipyard B), the company is required to submit for Government review and approval all proposed subcontracts for materials and equipment in excess of \$100,000. This requirement has been waived at (shipyard B) on the basis that the Supervisor of Shipbuilding (SUPSHIPS) reviews the (shipyard's) procurement system periodically. Based on these reviews SUPSHIPS has approved the (the shipyard's) procurement system and appears to rely almost entirely on this approved procurement system to ensure reasonable prices on subcontracts. Accordingly, the Supervisor's Office does not review proposed subcontracts regardless of the dollar amount and does not have a regular program to review in detail individual procurements on a spotcheck basis. The Contracting Officer at SUPSHIPS indicated that he had no practical alternative but to rely on an approved (shipyard) procurement system because he did not have sufficient personnel to review subcontracts over \$100,000.

In November 1968, a special NAVSHIPS audit team reviewed the (shipyard's) procurement system and concluded that:

The contractor's procurement system is adequate, affords maximum protection of the Government's interests and assures procurement of materials at the lowest price consistent with quality and required delivery schedules.

As will be discussed below, we do not consider the (shipyard's) procurement system adequate, nor do we believe that it can be relied upon to insure reasonable prices to the Government for subcontracted work.

6. *Procurement Practices:* In 1967 (shipyard B) placed approximately 38,000 purchase orders amounting to over \$104 million for materials, equipment, and other subcontracted work. About 40 to 50 percent of the cost of a typical shipbuilding contract is for outside purchases; for this reason, procurement practices at (the shipyard) could have an appreciable effect on the cost of a naval ship. Much of (the shipyard's) outside procurement is for complex equipment from a limited number of suppliers. Despite this lack of true competition for many items of shipboard equipment, (the shipyard) tends to rely on bid prices as if they were competitive without obtaining cost and pricing data as required by the Truth-in-Negotiations Act of 1962 (Public Law 87-653).

It appears to us that (shipyard B) has not adequately implemented the requirements of the Truth-in-Negotiations Act. In December 1967, NAVSHIPS 08 included a special requirement in the letter contract for construction of (Deleted) that (Shipyard B) submit proposed subcontracts for propulsion plant equipment in excess of \$100,000 to NAVSHIPS for review and approval prior to placement. Subsequent NAVSHIPS review of procurements recommended by (the shipyard) disclosed that (the shipyard) had not obtained and evaluated supplier cost and pricing data in some cases where consideration of such data was required by the Truth-in-Negotiations Act. After (the shipyard) was required to obtain supplier cost and pricing data, this data revealed that there were large unwarranted contingencies and excessive profits in the prices previous-

ly recommended by (the shipyard). Subsequent negotiations resulted in reduced prices.

In July 1968, in a meeting with NAVSHIPS 08, (shipyard B) representatives indicated a general lack of familiarity with the requirements of the Truth-in-Negotiations Act. However, they agreed to take steps to comply with the requirements of this law. Apparently, (the shipyard) had not implemented the requirements of the Truth-in-Negotiations Act prior to that time. Based on our limited review it appears that (the shipyard) is now obtaining the required cost and pricing data in those cases when only one bid is received. However, in other cases involving limited competition, (the shipyard) makes awards on the basis of the bids received without obtaining supplier cost and pricing data. In some cases it appears that (the shipyard) is devoting considerable effort to *avoid* obtaining and evaluating supplier cost and pricing data. Despite the limited number of suppliers for many items of ship hardware, (the shipyard) buyers tend to classify a procurement as "competitive" thereby avoiding any requirement to obtain and evaluate cost and pricing data even in circumstances where the competition is clearly limited.

The following are examples of specific procurements where (shipyard B) either did not obtain cost or pricing data or where after being required to obtain this data, lower prices were negotiated:

a. A sole-source quote was received by (the shipyard) for (deleted) main circulating pumps at a price higher than that recently paid for identical (deleted) pumps. Rather than obtaining the certified cost and pricing data required for a non-competitive procurement, (the shipyard) attempted to construct a "competitive situation" by obtaining a bid from another supplier, even though there was no reason that this second supplier could quote a lower price. In this manner, (the shipyard) could conclude that the procurement was competitive, and thus avoid the requirements for cost and pricing data.

b. (Shipyard B) awarded a purchase order for the (deleted) moisture separators to the only qualified vendor without obtaining cost and pricing data and without evaluating this data to insure a reasonable price. In this case (the shipyard) originally received three bids and recommended an award to the low bidder. NAVSHIPS could not accept this recommendation because the low bidder's design, based on past performance could not be expected to meet the Navy's performance requirements. Only one of the three bidders could supply equipment meeting the Navy requirements. (The shipyard) subsequently awarded the subcontract to the sole acceptable bidder at a considerably higher price than the low bidder had quoted. (The shipyard) did not obtain or evaluate the supplier's cost or pricing data before making the award; rather, they concluded that adequate competition existed even though one design was technically acceptable.

c. In procuring deaerating feed tanks for (deleted) (the shipyard) submitted a recommendation to NAVSHIPS to buy these tanks at \$407,000. NAVSHIPS rejected this recommendation and requested that cost and pricing data be obtained from the vendor and a revised procurement award recommendation be submitted based on reasonableness of the vendor's costs. As a result of evaluating the vendor's cost data, (the shipyard) was able to negotiate the price down from \$407,000 to \$352,000.

d. (The shipyard) requested NAVSHIPS approval to place a subcontract for main circulating sea water pumps for (deleted) at a price of \$311,000. This price was about \$75,000 higher than was paid for similar pumps a year earlier. (The shipyard) accepted this price as reasonable without obtaining the supplier's cost and pricing data. NAVSHIPS 08 asked (the shipyard) to obtain and evaluate the supplier's cost data. After technical review and additional negotiations based on the pump supplier's cost data, the price was reduced to \$220,652, a reduction of 30 percent.

e. In a procurement for (deleted) reactor plant salt water circulating pumps, (the shipyard) received a \$128,000 sole source quote in June 1968. In September 1968, a bid of \$68,000 was received from a second vendor. (The shipyard) then placed the order with the second vendor on the basis of "adequate price competition" without reviewing the supplier's cost and pricing data. Since the procurement was for less than \$100,000 no Government approval was required and the order was placed without further analysis to verify the reasonableness of the second vendor's bid.

It further appears that there is inadequate management attention to the procurement function at (shipyard B). A considerable portion of the company's business is subcontracted, but the number of management personnel concerned

with subcontracting appears disproportionately small. Management reviews of large procurements appear to be perfunctory and we found no evidence of an effective system for regular in-house audits of procurement operations. In addition, there seem to be no adequate safeguards for controlling access to supplier bid information to prevent improper disclosure. We consider these to be major deficiencies that require attention.

Based on our limited review at (shipyard B) and our experience with recent procurements submitted by the company for NAVSHIPS approval, we do not agree that the (the shipyard's) procurement procedures are adequate to insure reasonable prices to the Government for subcontracted work. We consider that there are serious deficiencies in (the shipard's) procurement practices which may be resulting in higher than necessary costs on Government contracts. This area also needs immediate attention from the Supervisor of Shipbuilding, USN and the Defense Contract Audit Agency to initiate prompt corrective actions with (the shipyard) management.

7. *Pricing and Administration of Change Orders*: Change orders generally increase the price of ship construction contracts by 12 to 16 percent. Typically, about 900 to 1,200 change orders are issued during the construction of every naval ship. Based on our limited review of this area it appears that:

a. Neither (shipyard B) nor the Government can determine the actual cost of changed work from (the shipyard's) accounting records. Thus, there is no sound basis for pricing changed work or for controlling the cost of changed work. There seems to be no way to tell whether or not change orders have been properly priced since there is no record of actual costs.

b. The pricing of change orders is further complicated by the (the shipyard's) practice of applying "add-on" factors to their raw estimate of basic labor cost to cover other associated costs. These "add-ons" can account for as much as two-thirds of the total estimated cost of the change. However, there appear to be no accounting records to substantiate that the factors used by (the shipyard) and accepted by SUPSHIPS reflect actual additional costs of these "add-on" factors such as supervision for changes.

c. It appears that SUPSHIPS does not always exercise sufficient care in reviewing change orders. In one case, SUPSHIPS issued a maximum priced change order in the amount of \$2.0 million for (deleted) even though a (shipyard) price proposal previously submitted for this work was \$1.8 million.

d. Current cost information is not always effectively used in negotiating changes. In one instance for (deleted) Post Shakedown Availability, no DCAA audit of the change proposal was requested even though almost half the proposed costs were for material which could be verified by audit. A subsequent DCAA audit showed that \$80,000 of the material cost was questionable.

8. *Internal Audit and Appraisals*: We found that (shipyard B's) financial organization included an internal audit department. However, in reviewing the functions of this audit department, we found that it is primarily concerned with financial type auditing such as payroll accuracy determination. Our impression was that there is no centralized examination and reporting to (shipyard) management on how effectively the company's operations are being conducted.

9. *Recommendations*: Based on our limited review of (shipyard B's) operations, we recommend the following:

a. *Cost Controls*. (The shipyard) is presently working to develop an effective budgetary control system for ship construction work. However, there is no definitive schedule implementing this revised system and actual implementation may be continually deferred in the absence of a firm schedule. Meanwhile costs are being incurred on several Navy contracts without effective control. We recommend that (the shipyard) be required to prepare a definitive schedule for developing and implementing effective budgetary controls over ship construction work and that these controls be established expeditiously. Further, the Supervisor of Shipbuilding, USN should take immediate steps to review (the shipyard's) actions in implementing these effective cost controls for work under Government contracts. In addition, the Supervisor of Shipbuilding, USN should require (the shipyard) to establish an effective system of labor checks to verify the accuracy of labor changes.

b. *Procurement*. The Supervisor of Shipbuilding, USN should take immediate action with (shipyard) management to require (the shipyard) to obtain and use suppliers' cost data in pricing materials and equipment under circumstances of limited competition. Until (the shipyard) has demonstrated satisfactory per-

formance in this regard, we recommend that the Supervisor of Shipbuilding review and approve each procurement over \$100,000.

c. *Changed Work.* It is recommended that the Supervisor of Shipbuilding, USN take immediate action with (shipyard) management to require adequate accounting and effective cost control for changed work, particularly for change orders over \$100,000. In addition, the Supervisor of Shipbuilding should request the Defense Contract Audit Agency to review (the shipyard's) cost "add-ons" for changed work and to establish necessary procedures to determine whether or not these cost changes as quoted by the company are reasonable costs applicable to changed work.

d. *Internal Review.* The Supervisor of Shipbuilding, USN should require (the shipyard) to establish a program of centralized internal reviews and appraisals of (shipyard) operations. Reports of the findings of these reviews and corrective action taken should be provided to the Government. In addition, the Supervisor of Shipbuilding, USN should also make periodic formal appraisals and reports of (the shipyard's) functional operations. We believe such appraisals would help bring operating deficiencies to attention of higher management for appropriate action and resolution.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C. 20360.

[In reply refer to OSH-01354, 23 September 1969]

MEMORANDUM FOR THE COMMANDER, NAVAL SHIP SYSTEMS COMMAND.

Subj: Cost Controls at (Shipyard B).

Encl:

- (1) Report to Admiral Rickover dated 29 August 1969.
- (2) Report on technical analysis of (Shipyard B's) claim for costs incurred in installing long-life core in (SSN —).

1. In a memorandum to the Assistant Secretary of the Navy (Installations & Logistics) dated 30 April 1969, I forwarded a report concerning procurement and cost control practices at (Shipyard B).

This report, which was forwarded via your office, indicated serious deficiencies in the company's procurement, pricing, and cost control practices. Specifically, in the area of cost controls, the report showed that:

- a. (The shipyard) had no effective budget system to control labor costs;
- b. The company's own survey of its cost controls indicated widespread mischarging of costs;
- c. Under the company's budget system, it was possible to meet all working level budgets for a given ship and still overrun the contract;
- d. (The shipyard) management was aware of these problems. However, it had deferred plans to implement an improved cost budgeting system until 1970.

2. Enclosure (1) is a subsequent report which points out that nothing has been done to improve cost controls at (the shipyard) in the four months since I raised the issue. (The shipyard) has again deferred an improved cost budgeting system, and it appears that an improved system may not be put into effect at all. The report also points out that the company's present system for collecting and reporting costs is too flexible to permit effective cost control. In the specific case of direct labor, for example, there are no controls over 50 percent of direct labor charges.

3. The situation with regard to the (one new construction project) is particularly serious. Although more than two years of work and \$63 million in costs have been incurred on this ship, no budgets have been established for the ship. Consequently, there is no control over costs incurred in construction of the (ship). Enclosure (1) further indicates that millions of dollars are being charged against the (ship) under "miscellaneous" cost accounts that cannot be controlled or audited. In at least one case, costs for work on a commercial ship were charged to the (Navy ship). Since the (Navy ship) is being built on a letter contract, there is no incentive for (the shipyard) to control the construction costs of this ship; in fact, higher costs will provide a larger profit base in the definitized contract and in follow-on contracts. Thus, the Government itself must take steps to ensure that the remaining work is done efficiently and economically.

4. Enclosure (1) also discusses (shipyard B's) pricing of a change order on the (SSN —). (The shipyard) originally estimated that it would require 11,000 additional manhours to perform this job. The actual cost of the work

turned out to be much less; only about 2,000 additional manhours were charged to the cost account covering the bulk of the work. Yet (the shipyard) based its price for the change order on the original estimate, apparently disregarding actual cost records that were available when the company submitted its price. Enclosure (2), the report of a technical analysis of the same claim, shows that (the shipyard) failed to credit the Government for the cost of work that did not have to be done as a result of the change order. Further, (the shipyard) charged as a direct cost to this change order shipyard facilities which will remain at (the shipyard) for use on future contracts.

5. The nature and extent of the overcharges in this particular claim indicate the need for effective safeguards to protect the Government in claim settlements. Normally the Supervisor of Shipbuilding settles such claims locally. In this case, I had my own people review the claim because the funds requested by the Supervisor of Shipbuilding to cover it seemed excessive. My representatives are now working with the Supervisor of Shipbuilding on this particular case. However, I am concerned that this inflated claim is representative of others submitted by (shipyard B).

6. In my 30 April memorandum I recommended steps the Navy could take to improve cost controls at (the shipyard). Enclosures (1) and (2) reemphasize the need for prompt Government action. With regard to the items discussed above, I recommend that NAVSHIPS take the following actions:

a. Require (the shipyard) to implement without delay an effective cost budget system for (the new construction project) in order to establish some measure of control over the cost of work on the (project);

b. Require (the shipyard) to establish without delay budgets and accounting records that will ensure adequate cost control on other major programs such as the (deleted) program and the (deleted) program;

c. Ensure that claim settlement procedures at (the shipyard) and other shipyards are adequate to detect overcharging on claims resulting from change orders. As a minimum, I recommend that an authorized officer of the company be required to certify each claim, regardless of amount, to the effect that:

(1) Costs claimed do not exceed the actual cost of the work performed;

(2) Costs claimed have been charged in accordance with Government-approved accounting procedures;

(3) Prior payment for the same work has not been received.

H. G. RICKOVER,

Deputy Commander for Nuclear Propulsion.

Copy to CHNAVMAT, ASSTSECNAV (I&L).

[Enclosure (1) to NAVSHIPS 08H, Memo Ser 01354 of 23 Sep 1969]

UNITED STATES GOVERNMENT MEMORANDUM.

Date: AUGUST 29, 1969.

To: VADM H. G. Rickover.

From: (Deleted).

Subject: Review of (shipyard's B's) Cost Controls for Construction of (naval nuclear ships).

1. The purpose of this memorandum is to advise you of the results of my review to date of (shipyard B's) cost control system on contracts for the construction of (naval nuclear ships) and other contracts where the government absorbs a significant share of cost overruns or cost underruns.

2. In April 1969, I reported to you that:

a. The cost controls in effect at (the shipyard) could not be relied upon to adequately control shipbuilding costs.

b. (Management) was aware of deficiencies in its present cost control system and was in the process of developing an improved cost budgeting system.

c. (The shipyard's) schedule for implementation of this improved system on (nuclear ship construction programs) had slipped from August 1969 to early 1970.

3. In recent discussions with the (shipyard B's) Manager of Contracts (name deleted) and the Vice President for Administration (name deleted). I was told that implementation of an improved cost budgeting system has been further deferred and may not be adopted at all. I was advised that the cost of the new system is being weighed against possible benefits. In the meantime no budgets

have been issued for (one major ship construction project) because (the shipyard) considers that "the scope of work for the remainder of this year cannot be determined." Cost budgets for (two other ships) are currently being prepared under the existing system at (the shipyard) and are presently scheduled to be issued prior to keel laying. As I have previously reported to you, (the shipyard) has recognized deficiencies in its existing cost budgeting system so the effectiveness of (these) budgets currently being establishing will be questionable.

4. For the past several weeks, I have reviewed in greater depth the existing (shipyard) system for estimating, charging, collecting and reporting costs. My findings from this review continue to point out a strong need for improved controls over costs of naval ship construction at (the shipyard).

My review confirms that number of weaknesses exist in the present cost control system and that these weaknesses may be resulting in higher than necessary costs of naval ship construction. For example:

a. *Labor Budget*—(Shipyard B) utilizes a labor incentive program in several of its large departments. About half the total yard direct labor is under this program. While I have not completed a full review in this area, I have found several practices which indicate the need for improvement in (shipyard) cost controls. Examples are:

(1) Under the incentive program, estimates are established for individual jobs for the purpose of providing an efficiency standard. Trades personnel are paid a bonus if time worked is equal to or less than the time allotted by the estimate. However, I can find no controls for insuring that the individual estimates used in the incentive program are consistent with the overall ship's budget. It appears possible to underrun all individual estimates and still overrun the total estimated costs for the ship.

(2) The Navy is paying a special labor bonus for irradiated reactor plant work. It appears that this bonus has been in effect for at least two years. Under present procedures, trades personnel are paid a bonus even though the actual time on the job is longer than the estimated time required. Currently, it appears that once the estimate is developed, a flat 13% bonus is applied. The bonus is then increased or decreased by 13% for every hour the actual work under or overruns the estimate. Thus, actual time would have to exceed the estimated time by 100% before all bonus is lost. Because most irradiated reactor plant work is performed under cost-type contracts, the full cost of the bonus in addition to the actual cost of the work is charged to the government. I have been unable to find out whether the Navy has agreed to this bonus system.

The remaining direct labor (about 50% of the total) is not controlled by either the labor incentive program or the cost budgeting system. Thus for about half the direct labor costs there are no effective controls to insure that direct labor costs are within ship estimates.

b. *Charging, Collecting, and Reporting Costs*—(Shipyard B) establishes "charge numbers" for the purpose of charging, collecting and reporting costs. These charge numbers appear to be issued and administered by the Contracts Division. This Division is also responsible for preparing the estimates for Navy prime contract requests, for developing cost control budgets once a prime contract is awarded and for estimating Navy change orders. Thus, the same Division is responsible for preparing contract proposals, issuing budgets and controlling how costs are charged and reported.

The system for charging, collecting, and reporting costs is very flexible. It appears that waterfront, shops, overhead departments, and engineering personnel can at any time charge their time directly to any one of over 8,250 charge numbers. In addition, there are certain "cost keeping" or "dummy" charge numbers. These charge numbers collect costs which are later distributed to other charge numbers, sometimes by computer based on predetermined percentages. Such costs can be allocated between charge numbers on one ship or between charge numbers of several ships. Under this system, the company has great flexibility in deciding how costs are charged among its contracts. I believe this flexibility precludes effective cost control. For example:

(1) Overhead is a large part of the shipyard's total cost. However, overhead departments have the option of charging their time directly or to cost; however, it can also be charged to overhead accounts. It does not appear possible to control either direct costs or overhead costs under these circumstances.

(2) The largest miscellaneous cost charge number for (our major ship construction project) has already collected some \$1.2 million in costs from about 45 different departments. Of the \$1.2 million miscellaneous charges, about half

came from service departments such as Contracts which are considered typically overhead functions. There appears to be no control over who can charge what work to these charge numbers or any of the 8,000 or so other charge numbers at (the shipyard).

(3) In checking charge numbers for (the ship), I found that the charge number for "General Reactor Plant Drawings" has been charged 61,000 manhours from 27 different departments. The validity of charges to this account from such departments as welding, shipfitters and heavy machine shops appears questionable to me.

(4) Supervision is charged to only one cost charge number per hull rather than to specific jobs. The ratio of supervision for the Machinery Installation Department to the total straight direct labor on (a commercial ship), was 11%. The ratio of supervision of this department thus far on (the Navy's ship) is 43%.

c. *Comparison of Actual and Estimated Costs*—The present cost control system does not appear to provide for adequate comparison of actual and estimated costs. For example:

(1) I found that the costs for certain bracket work on (another commercial ship) were charged to (a Navy ship). I found this error by checking job estimates on (the Navy ship) to timekeeping reports. Normally, I believe such an error would have gone undetected under the (shipyard's) cost control system because job estimates are not routinely matched with actual costs.

(2) In connection with the change order to install a different core in (SSN —) on 1 August 1968, one month after the work was performed, the (Shipyard's) Contract Department estimated that installation of the new core would require 11,000 manhours over that required to install the previous design. However, in checking return costs for the month of June 1968, when the work was actually performed, I found that the total increase for the charge number for installation of reactors was only 2,000 manhours, less than one fifth of the amount proposed by (the shipyard) for change order pricing purposes. Review of the individual work tickets indicated that installation work by the lead trade for the new core was about 50% of that required to install the previous design core in (a previous ship).

(3) In January 1968, (shipyard B) management decided to build (* * *) main condensers (one Navy ship) because the (shipyard's) estimate of \$850,000 was less than an adjusted low bid of about \$1.0 million from an outside vendor. The total actual cost incurred to date on this job appear in several different charge numbers and therefore is difficult to determine. However, I developed a rough estimate from the costs shown on certain charge numbers plus various add-ons and it appeared to me that actual costs might overrun the original \$850,000 estimate by about \$100,000. I found no evidence that (the shipyard) has established a budget to compare the cost of building the consensor with the original estimate that was used as the basis for the decision to manufacture the consensor inhouse.

5. In summary, my review, while not complete, indicates that (shipyard B) has not taken effective action to adequately budget for and control costs of constructing (naval nuclear ships) or on other contracts where the government shares cost overruns or underruns. I consider the government should require (the shipyard) to promptly implement a more effective system for controlling costs on these contracts. I consider this matter should be taken up formally with the Supervisor of Shipbuilding so that he may initiate appropriate corrective action with the contractor. If you consider it appropriate, I will discuss this matter directly with the Supervisor of Shipbuilding and will advise you of what action is to be taken.

(ENCLOSURE (2) DELETED IN ITS ENTIRETY DUE TO CLASSIFICATION)

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C., 20350.

[In reply refer to 08H-1394, 23 October 1969]

MEMORANDUM FOR THE COMMANDER, NAVAL SHIP SYSTEMS COMMAND.

Subj: Need for Improved Procurement and Cost Control Practices in the Construction of Naval Ships.

Ref:

- (a) NAVSHIPS ltr Ser 08H-1337 dtd 30 April 1969.
- (b) SHIPS 08 memo Ser. 08H-01354 dtd 23 September 1969.
- (c) COMNAVSHIPS memo dtd 6 October 1969.

1. In reference (a) I forwarded to you a report which identified major deficiencies in procurement practices and cost controls at (shipyard B). I pointed out that these deficiencies were responsible for wasting millions of dollars each year, and that this would continue unless the Navy took prompt and adequate corrective actions. In reference (b) I sent you a follow-up report indicating additional problems discovered in this area; I pointed out that nothing has yet been done to correct deficient procurement practices and cost controls at (this shipyard) as reported in reference (a).

2. Reference (c) is your reply to my memoranda. In it you state that NAVSHIPS' review of these matters has not yet been completed, but that you will advise me shortly of your decision with respect to my recommendations. You further state that "we must ensure that the cure is not more costly than the cost risk of similar deficiencies occurring in the future, that the corrective actions we require of (shipyard B) do not place them in a less competitive position for competitive fixed-price procurements, and that the corrective actions are practical and obtainable and do not generate misleading data."

3. I do not consider that "cure" of the issues I raised will be "more costly than the cost risk of similar deficiencies occurring in the future . . ." The Navy should know what it pays for; know what ships actually cost to build; have effective control over ship construction costs; see to it that shipbuilders follow economical and required procurement practices. Without these features, competent and economical management of our shipbuilding program cannot exist.

4. Further, I do not understand the significance of your comment "we must ensure . . . that the corrective actions we require of (shipyard B) do not place them in a less competitive position for competitive, fixed price procurements." From what I have observed over many years there is little, if any, *real* competition in the naval shipbuilding industry. (Shipyard B is presently the sole-source for several major shipbuilding programs. They have also received a number of ship overhaul and conversion contracts. Even in the SSN 637 class construction program—where several shipbuilders bid on the same contract—the competition did not, to my mind, assure reasonable prices.

5. For many years Navy shipbuilders have been sheltered from competition, by the geographic factors in earlier years, or by factors such as workload, design, or scheduler considerations as is now the case. In effect, the Navy's major shipbuilders can count on sufficient sole-source or cost-plus contracts to support them regardless of their efficiency or their ability to control costs. The Department of Defense policy of calculating profits as a percentage of cost, rather than as a return on investment, serves to reward higher costs in the industry with higher profits.

6. The Navy must face up to the fact that there is little, if any, true competition in the shipbuilding industry and that, as a direct result, the industry is neither efficient nor economical. Further, it has little incentive to become efficient or economical under existing Navy contracting and contract administration policies and procedures.

7. If the steadily rising cost of ships is to be halted, the Navy must take corrective actions that are, in your words, "practical and obtainable and do not generate misleading data." We must, in addition, require adequate Government surveillance of shipbuilder operations. Such surveillance has been proved to be ineffective at all major shipyards. For this reason I do not understand your concern expressed in reference (a) about unfair competitive advantage.

8. The current situation in shipbuilding is urgent and serious. Improper procurement practices and inadequate cost controls have increased and continue every day to increase costs on Government contracts. The Navy cannot afford to treat these gross deficiencies lightly or to invoke delay in their correction. I consider it inappropriate under the circumstances—particularly with the present Congressional displeasure at inefficient Defense procurement practices—to procrastinate further.

CC: CNM, ASN (I&L).

H. G. RICKOVER.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C.

[In reply refer to 08H-6403, 23 December 1969]

MEMORANDUM FOR THE COMMANDER, NAVAL SHIP SYSTEMS COMMAND.

Subj: Deficiencies in Procurement of Hull Steel by (Shipyard B).

Ref:

- (a) NAVSHIPS ltr 0763 :JF :dsr Ser 334 of 24 November 1969.
- (b) VADM Rickover memorandum Ser 08H-1337 of 30 April 1969.
- (c) VADM Rickover memorandum Ser 08H-01354 of 23 September 1969.

Encl: (1) Report of Practices Followed by (Shipyard B) in Procuring Hull Steel for Construction of (deleted).

1. Reference (a) identified the actions you intend to take with respect to deficiencies in shipyard cost control and procurement practices I described in references (b) and (c). You have asked for my comments on your proposed action plan.

2. I have not studied reference (a) sufficiently to provide you with detailed comments at this time. However, I will comment as soon as possible.

3. Recently, I found what appears to be a major problem in the procurement of hull steel by (shipyard B). Substantial amounts of HY 80 and HY 100 steel are required in the construction of (deleted). The General Accounting Office in June 1965 issued a report to Congress criticizing the way the Navy and its shipbuilders procured HY 80 steel used in the construction of nuclear submarines. Therefore, I asked one of my representatives to review how (shipyard B) currently procures this material. Enclosure (1) is the report I have received.

4. The General Accounting Office report stated that the Navy and its shipbuilders should obtain cost and pricing data from HY 80 steel suppliers in order to comply with the requirements of the Truth-in-Negotiations Act. The Navy agreed. Today, more than four years later, enclosure (1) indicates that (shipyard B) is still not obtaining cost and pricing data from HY 80 and HY 100 steel suppliers.

5. Enclosure (1) also identifies specific problems in (shipyard B's) procurement of high tensile steel. Apparently, the shipyard has bought about \$3.4 million worth of high tensile steel from (a large steel supplier) without bothering to obtain competitive bids from other qualified firms and without obtaining or evaluating supplier cost and pricing data. Further, (the shipyard) has broken the \$3.4 million total requirements from (that firm) into more than 1200 individual orders, such that apparently no individual high tensile steel order for (deleted) exceeds \$100,000—the lower limit for requiring cost and pricing data under the Truth-in-Negotiations Act. Through these practices, it appears to me that (the shipyard) is not taking maximum advantage of its potential bargaining power to obtain hull steel at lower prices.

6. I am bringing this matter to your attention so that appropriate corrective action may be taken. In this regard I recommend that NAVSHIPS check the procurement of hull steel at other shipyards to ensure that deficiencies previously pointed out by the General Accounting Office have been corrected as promised by the Navy and to ensure that hull steel required in naval ship construction programs is being procured in the most economical manner.

H. G. RICKOVER.

Copy to Assistant Secretary of the Navy (Installations and Logistics), Chief of Naval Material.

[Enclosure (1)]

REPORT OF PRACTICES FOLLOWED BY (SHIPYARD B) IN PROCURING HULL STEEL FOR CONSTRUCTION OF (DELETED)

I. BACKGROUND

In 1965, the General Accounting Office (GAO) issued a report to Congress concerning procurement of HY 80 steel plate from (two steel companies) for use in the construction of Navy ships. The GAO report stated:

"... neither the Navy nor its prime shipbuilding contractors had obtained and evaluated cost data for the purpose of determining the reasonableness of the

identical mill prices charged by these two steel suppliers. These companies constituted the principal available sources of supply for this essential material which is used almost exclusively in the construction of nuclear submarines and other naval vessels. These cost data properly certified by the contractors, in our opinion, should have been required and considered by the Navy and its prime shipbuilders in the negotiation of prices under the Armed Services Procurement Regulation prior to December 1, 1962, and under Public Law 87-653 thereafter."

The GAO report explains that HY 80 steel plate is a specialized item produced in accordance with military specifications. It is produced principally by two steel makers.

The firms quote identical catalog mill prices for this material. The GAO reported that, depending on the way the figures were presented, the rate of profit on costs for (one firm) varied from 3.5% to 14.5% and for (the other) from 22.9% to 26.8%. The GAO concluded that there are sufficient differences in the costs of producing HY 80 steel plate, and in the profits to be realized from identical prices, to require cost and pricing data from both manufacturers in any future negotiated procurements of HY 80 steel plate (or successor types) as required by the Truth-in-Negotiations Act.

The Navy agreed with the GAO findings. The following is quoted from the GAO report:

"With regard to our first proposal, the Navy stated that procurement of HY 80 steel plate by formal advertising had been discontinued and that cost or pricing data was now being required and certifications were requested in accordance with the provisions of ASPR 3-807.3. In addition, the Navy stated that successor types of plate and other types of steel will be considered for similar treatment as conditions warrant.

"With regard to our second proposal, the Navy indicated that prime contractors had been advised to obtain cost or pricing data on all HY 80 steel-plate procurements and to obtain certifications in accordance with the provisions of their prime contracts."

II. PROCUREMENT OF HY 80 AND HY 100 FOR (DELETED)

In view of the GAO's findings, and because hull steel is a significant cost factor in Navy ships, a review was conducted of how HY 80 and HY 100 steel was being procured by (shipyard B) for (deleted). It appears that HY 80 and HY 100 steel plate is still being procured as described in the GAO report. The bids of both suppliers seem to be identical when transportation costs are considered, and certified cost or pricing data, as required by the Truth-in-Negotiations Act, are not being obtained.

(Shipyard B) procurements of HY 80 and HY 100 steel plate for (deleted) total nearly \$9 million—\$3,650,000 to (one firm) \$5,250,000 to (another), and \$5,000 to (a third firm).

For each of the purchase orders reviewed, bids were solicited from (two firms). In each case the (first firm's) bid was slightly higher than the price quoted by (the other firm). However, penciled notes in (shipyard) purchase files adjusted the two bids by adding the freight costs from each mill to (the shipyard). These adjustments made the bids identical. In several of the procurements reviewed, (one firm) advised (the shipyard) that they were raising their prices. Within 30 days, in each case, (the other firm) increased their prices by an identical amount. Thus, the prices from these two independent suppliers remained identical. (Shipyard B) purchasing personnel stated that because the bids are identical after transportation costs are considered, award to (one firm) or (another) is dependent upon "company policy." (In certain cases (the shipyard) solicited bids from (the third firm) as well.

However, the files state that (the third firm) was nonresponsive because of higher prices and because they were unable to supply all the items on order.)

III. PROCUREMENT OF HIGH TENSILE STEEL FOR (DELETED)

In addition to HY 80 and HY 100 steel, (shipyard B) has procured about \$3.4 million worth of high tensile steel for use on (deleted). A review of the shipyard's high tensile steel procurements revealed what appears to be two major deficiencies:

Failure to obtain competitive bids for high tensile steel requirements

(Shipyard B) is buying large quantities of high tensile steel plate on a sole-source basis, even though there is more than one supplier for this material. A review of these purchases indicates that (the shipyard) has been awarding the purchase order to (another large steel company) without soliciting bids from other vendors and without performing an evaluation as to the reasonableness of prices paid. Shipyard procurement personnel acknowledged this purchasing procedure, although they recognize that there are other vendors. They claim that procurement of high tensile steel from (this company) would always result in the lowest cost because of transportation considerations. The (company's) orders are shipped by barge from (a nearby plant).

It may be that the "catalogue prices" for high tensile steel are the same for all suppliers, and thus (the shipyard) considers it unnecessary to solicit competitive bids. However, the shipyard's large requirements for steel could give it a strong bargaining point in a competitive situation. The potential for \$3.4 million worth of orders might well induce one or more steel companies to quote below the standard price in order to win the business. At least, (the shipyard) should allow all potential suppliers to bid. It does not appear that (the shipyard) has made any effort to use its potential bargaining position to obtain lower prices for high tensile steel used on (deleted) through competitive bids or negotiations.

Failure to obtain supplier cost and pricing data in sole source procurements

The Truth-in-Negotiations Act requires that prime contractors obtain and review subcontractor cost and pricing data in all noncompetitive procurements over \$100,000. A review of purchase orders for high tensile steel revealed no evidence that cost or pricing data had been obtained and evaluated. Although the procurements of high tensile steel for (deleted) totalled more than \$3.4 million, (shipyard B) had split them into more than 1200 separate purchase orders. No one purchase order exceeded \$100,000. Shipyard procurement personnel claim that the major factor in determining the number of the (company's) purchase orders was the scheduling and size limitations of barge shipment. However, shipyard purchase records show that where the Truth-in-Negotiations Act does not apply, (the shipyard) has placed high tensile steel orders in excess of \$100,000. For example, on one commercial hull, the high tensile steel procurements totalled only \$650,000. Two of these procurements were in excess of \$100,000.

IV. CONCLUSIONS

(Shipyard B) has recently been awarded a contract to procure materials for (deleted) unless there is prompt action taken to correct the practices used by (the shipyard) in the procurement of hull steel, the company's procurements of hull steel for the new (ship) will probably be no better than those for (deleted). (Shipyard B) should be required to solicit bids from all qualified sources and to obtain and review cost or pricing data in those cases where competitive bids are not obtained. The Navy should take action necessary to correct the deficiencies identified in the 1965 GAO report. It should also insure that its contractors establish effective purchasing procedures for other specialty steels used in ship construction.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C. 20360.

[In reply refer to 08H-706, 29 January 1970]

MEMORANDUM FOR THE COMMANDER NAVAL SHIP SYSTEMS COMMAND.

Subj: Deficiencies in Procurement of Hull Steel by (Shipyard B).

Ref:

(a) Deputy Commander for Nuclear Propulsion Memorandum 08H 6403 dated 23 December 1969.

(b) Commander NAVSHIPS Memorandum 0763: JF:dsr Ser: 3 dated 7 January 1970.

1. In reference (a) I pointed out several major deficiencies in the way (Shipyard B) procures specialized HY 80 and HY 100 hull steel and other high tensile steels under Navy contracts. I pointed out that in 1965 the General Accounting Office found HY 80 steel contracts which had been awarded on the basis of prices quoted by the steel suppliers were resulting in profits of up to 26% on costs. From its review the GAO recommended and the Navy agreed

that on subsequent procurements cost and pricing data would be obtained from HY 80 steel suppliers to assure that the quoted prices were reasonable in relation to the cost of producing this steel for the Navy. Recently, however, I found that (the shipyard) is procuring HY 80 and HY 100 steel for (a major shipbuilding program) on the basis of quoted prices and without obtaining cost and pricing data to determine whether the prices being paid are reasonable.

2. In reference (a) I also pointed out that (the shipyard) bought about \$3.4 million worth of high tensile steel from (a large steel corporation) for construction of (several ships) without obtaining or evaluating (the steel corporation's) cost and pricing data. In buying this steel, (the shipyard) placed more than 1200 individual orders with (the steel corporation). None of these orders exceeded \$100,000—the lower limit for obtaining cost and pricing data under the Truth-in-Negotiations Act. Thus it appears to me that (the shipyard) is neither complying with the Truth-in-Negotiations Act nor taking maximum advantage of its potential bargaining power to obtain the lowest possible prices for this steel.

3. In reference (b) you verified the facts I reported in reference (a). In addition, reference (b) pointed out that:

a. The Supervisor of Shipbuilding, (deleted), reviewed and consented to some of the (the shipyard's) HY 80 and HY 100 steel orders prior to their placement.

b. In one case the Supervisor of Shipbuilding requested that cost and pricing data be obtained from HY 80 and HY 100 steel suppliers; the steel suppliers refused to provide such data. The Supervisor later consented to this order on the basis that the prices quoted by the suppliers were identical to those obtained and accepted by the Defense Industrial Supply Center for the same type steel under a formally advertised procurement.

c. Since late 1967, the Defense Industrial Supply Center has been procuring HY 80 and HY 100 steel without obtaining and evaluating supplier cost and pricing data on the basis that there is adequate price competition. The Deputy Assistant Secretary of Defense (Procurement) and the General Accounting Office were informed of this in 1967.

4. In reference (b) you also state that NAVSHIPS will review the procurement of HY 80 and HY 100 steel and that if competition is not considered adequate, NAVSHIPS will either obtain supplier cost and pricing data or request a waiver of the Truth-in-Negotiations Act. Reference (b) also indicates that the Supervisor of Shipbuilding will determine if (the shipyard) orders are being consolidated whenever possible, and if maximum competition is being obtained.

5. I am well aware that large steel suppliers have been and continue to be reluctant to furnish cost and pricing data to the Government and that in some cases they have refused to do so. However, I do not believe the Government should be deterred from requiring cost and pricing data in cases where such data are required by the Truth-in-Negotiations Act. The Navy uses substantial quantities of HY 80 and HY 100 steel in its shipbuilding programs—\$9 million has been spent to date for this material on the (deleted) alone. Moreover, the Government has spent considerable sums to develop HY 80 and HY 100 steel. Although the Navy is the primary customer for this steel, it is my understanding that these procurements have been exempted from renegotiation under the Renegotiation Act. In these circumstances, I believe NAVSHIPS has a definite responsibility to insure that the prices it pays are reasonable.

6. The determination of adequate price competition is a difficult one. It has been my experience that far too often procurements have been classified as being competitive when the competition obtained at best was limited and of marginal effectiveness in holding prices to reasonable levels. In addition, much of our ship construction is contracted for on the basis of the shipbuilder's estimated costs. In such cases, higher costs can easily mean higher profits. Thus, there is often no real incentive or pressure from shipbuilders on suppliers to keep prices down. It also may be to a shipbuilder's advantage to buy in small quantities—even if this means paying higher prices—in order to minimize the funds required to perform Government contracts.

7. I recommend that NAVSHIPS find out whether the prices which have been and are being paid for HY 80 and HY 100 steel are reasonable. It appears that the 1965 General Accounting Office review is the only factual check that has ever been made in cost incurred and profits realized by HY 80 and HY 100 steel suppliers under Navy orders. I recommend that you arrange with the Defense Contract Audit Agency or, if necessary, the General Accounting Office itself to check actual cost records of the steel suppliers involved to determine what costs are being in-

curred and what profits are being made on contracts and subcontracts for HY 80 and HY 100 steel. I would further recommend that you take appropriate actions at all shipyards to insure that steel orders are consolidated and procured competitively to the maximum extent possible.

H. G. RICKOVER.

Copy to Assistant Secretary of the Navy (Installations and Logistics), Chief of Naval Material.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C. 20360.

[In reply refer to 08H-714, 16 February 1970]

MEMORANDUM FOR THE COMMANDER, NAVAL SHIP SYSTEMS COMMAND.

Subj: Control of Ship Construction Costs at (Shipyard B).

Ref:

- (a) Deputy Commander for Nuclear Propulsion Memo to Assistant Secretary of the Navy (Installation & Logistics) Ser 08H-1337 dated 30 April 1969.
- (b) Deputy Commander for Nuclear Propulsion Confidential Memo to Commander, Naval Ship Systems Command Ser 08H-01354 dated 23 September 1969.
- (c) Commander, Naval Ship Systems Command letter to Assistant Secretary of the Navy (Installation & Logistics) 0763:JF:dsr Ser 334 dated 23 November 1969.
- (d) DCAA (deleted) Report dated 30 January 1970 on (Shipyard B's). Estimating System.
- (e) Deputy Commander for Nuclear Propulsion Memo to Assistant Secretary of the Navy (Installation & Logistics) Ser. 08H-370 dated 13 November 1968.
- (f) Chief of Naval Material Memo to Assistant Secretary of the Navy (Installation & Logistics) Ser MAT 02:RGF dated 15 May 1969.

Encl: (1) Memorandum to VADM H. G. Rickover dated January 26, 1970; Subj: Cost Controls at (Shipyard B).

1. In references (a) and (b), I pointed out a number of serious deficiencies in procurement, pricing and cost control practices at (shipyard B). Reference (c), on which you asked my comments, is your report to the Assistant Secretary of the Navy (Installation and Logistics) and the Chief of Naval Material on these deficiencies, identifying corrective actions planned by NAVSHIPS. My comments on each of the four principal sections of reference (c) are contained in the following paragraphs.

2. *Cost Control.*—In references (a) and (b) I pointed out that (shipyard B) has no effective budget system to control labor costs. Under the company's system it is possible to meet all working level budgets for a given ship and still over-run contracts.

Reference (c) however states:

- a. (The shipyard) has a reasonably good cost control system;
- b. An effective system exists to insure that costs as charged are valid and accurate;
- c. Some improvements can and should be made in the cost control system and that (the shipyard) has agreed to adopt the NAVSHIPS recommendations for improvement;
- d. Pending issuance of the Department of Defense (DOD) Guide for Performance Measurement described in DOD Instruction 7000.2 and an implementing Naval Material Command (NAVMAT) instruction and manual, NAVSHIPS will obtain copies of (the shipyard's) cost reports. The Supervisor of Shipbuilding at (deleted) (SUPSHIPS) and the Defense Contract Audit Agency (DCAA) office at (deleted) will monitor and expedite implementation of NAVSHIPS recommended improvements to the cost control system.

Comments

I do not understand how the (shipyard B's) cost control system can be classed "reasonably good" when their cost budgets do not and cannot act as a prompt and effective check on work actually being performed in the shops and on the waterfront. Under the (shipyard's) system it is impossible to identify specific cost

overruns in a timely manner or to make effective use of budgetary controls to safeguard against mischarging of costs. I identified this problem in references (a) and (b). In January 1970 the special NAVSHIPS team negotiating the contract for construction of (deleted) also found that present (shipyard) cost controls are not adequate to insure that work performed by their operating departments are within established budgets. Enclosure (1) states:

"The review to date shows that there are two significant deficiencies in the present (shipyard) cost control system:

1. There is no way to insure that work performed by the operating departments is within cost budgets established under the (the shipyard's) cost control system.
2. It could take up to several months to determine whether a cost overrun condition exists and the reason therefor."

The January 30, 1970 Defense Contract Audit Office report on (shipyard B's) estimating system (reference (d)) also refers to this problem. It states:

"We now believe that the contractor should use the hardware oriented, work breakdown structure of the current production control system for cost accumulation . . . The present cost numbering system is too broad to pinpoint problems at the work package level. Rather than simply increase the number of cost categories, the cost numbering system should coincide with the production control numbering system *so that variances between budgeted and actual hours can be analyzed below the departmental level*. If the contractor cannot evaluate variances at the work package level, inefficiency will simply be perpetuated when cost returns are used as the basis for proposals." [Emphasis added].

The lack of effective cost control at (the shipyard) leads to higher than necessary costs to the Government and thereby does great harm to the Navy's submarine and surface ship construction programs. Nearly all Navy work at (the shipyard) is being performed under sole source, negotiated contracts under which the Government bears all or at least a substantial portion of cost overruns. Since profits on these contracts are negotiated as a percentage of estimated costs, higher costs result in higher profits in the long run. The company has little or no incentive to keep costs down. Therefore the Navy itself must take the initiative. Minor corrective measures will not suffice. Action is needed *now* to establish an *effective* cost control system.

3. *Subcontracting*—In references (a) and (b), I listed numerous deficiencies in (shipyard B's) procurement practices, particularly failure to comply with the Truth-in-Negotiations Act and failure to evaluate or negotiate subcontract prices effectively.

Reference (c) states:

"The second basic issue involves subcontracting. The question here is what level of subcontract procurement performance should be expected from a contractor under a contract containing the "Consent to Subcontract Clause."

Reference (c) further states:

a. Armed Services Procurement Regulation (ASPR) contract clauses do not require contractors to conduct subcontract procurements in the same manner as Government procurement is conducted.

b. NAVSHIPS will recommend a change to ASPR so that contractors would be contractually required to perform all the functions the Government would perform if it were awarding a contract in excess of \$100,000.

c. Approval of the contractor's procurement system has been withdrawn. All applicable subcontracts will require Government consent prior to placement.

Comment

The issues I raised in references (a) and (b) do not hinge on the language of the ASPR "Consent to Subcontract clause." The point is that (the shipyard) is not managing its procurements in a business-like manner and in accordance with the requirements of the Truth-in-Negotiations Act—to the financial detriment of the Government. More to the point, little or nothing is being done to require (the shipyard) to improve its procurement operations.

In November, 1968, I pointed out deficiencies in (shipyard B's) procurement practices (reference (e)). In April, 1969, I provided a more detailed account of procurement deficiencies at (shipyard B) (reference (a)). In May, 1969, the Chief of Naval Material confirmed the issues I raised. He said in reference (f):

"The significant results of these studies are as follows:

- a. A significant portion of shipbuilding subcontracts are non-competitive (whether considering price or technical competition).
 - b. Adequate pricing data is not being obtained on these subcontracts.
 - c. Less than adequate effort is being made by prime contractors to:
 - 1. Ensure adequate competition,
 - 2. Perform adequate price analysis and conduct adequate negotiations.
 - d. Bid prices on ships are in fact inflated by the sole source nature of many of the major subcontracts.
 - e. Adequate emphasis is not being placed on P.L. 87-653 (Truth-in-Negotiations Act) and subcontract management by prime shipbuilding contracts.
- These results are borne out, I believe, by a similar review performed by Vice Admiral Rickover in the nuclear area."

In reference (c) you state that a CPSR (Contractor Procurement System Review) of (shipyard B's) procurement system "to flush out deficiencies" is scheduled for February, 1970, more than one year after I first raised the issue. Reference (c) states further that SUPSHIPS will take "continuing action" to correct shipbuilder procurement deficiencies, i.e., we will go back to "business as usual."

I see no reason to continue studying and reviewing the procurement situation at (shipyard B). I consider that the deficiencies have been identified and confirmed. What is needed now is a firm commitment from (the shipyard) to upgrade its entire procurement operation so that subcontracting is conducted efficiently. I see no need to await further reviews or changes in ASPR clauses before requiring this.

4. *Contract Changes*—In reference (a) I pointed out that because (shipyard B) does not collect costs of change orders separately, neither (the shipyard) nor the Government is presently able to determine the actual costs of changed work on ship construction contracts. There is no way to determine whether change orders have been overpriced.

In reference (c) you state that it is not feasible to maintain cost records for individual changes.

Comments

I do not agree that it is not feasible for the shipyard to maintain cost records for individual changes. I recognize that it may be difficult to establish rules for accounting for costs of changes. But the problem is not insurmountable. The shipbuilder prepares technical instructions and detailed work packages for change orders; I do not understand why he cannot account for the costs related to such technical instructions and work packages.

Obviously shipbuilders prefer not to account separately for the cost of each change. By lumping changes together and commingling their costs with other work, shipbuilders can overcharge the Government and make it impossible for the Government to know whether or not the price was too high.

I recommend that this issue be taken up with the Defense Contract Audit Agency and with the General Accounting Office to determine what rules should be established with regard to accounting for changes.

I consider that NAVSHIPS must require contractors to account for changes if it is to establish effective cost control and if it is to maintain the integrity of its fixed priced type contracts.

5. *Internal Audits*—In reference (a) I recommended that the Navy require (shipyard B) to establish an effective program of internal reviews and appraisals of its operations. In reference (c) you state that (the shipyard) is expanding its internal auditing staff to 12 from the present complement of 9. In reference (c) you imply that this problem is the responsibility of the Defense Contract Audit Agency (DCAA) not NAVSHIPS.

Comments

In reference (a) I stated that (the shipyard's) internal auditors seem to be concerned primarily with financial type auditing such as payroll verification. The addition of 3 more such auditors at (the shipyard) will not correct the problem I raised. The need is for a strong internal audit organization whose efforts would be directed toward more efficient shipyard operations and more effective purchasing and cost control procedures. NAVSHIPS should obtain specific commitments from (shipyard) management to establish such an internal audit program.

The Navy, not DCAA, defends shipbuilding budget requests in Congress. Claims and overrun (cost growth) problems hinder the Navy in getting DOD

and Congressional approval of its shipbuilding programs. The final responsibility for efficient and economical shipbuilding, therefore, cannot be shunted to local Government auditors.

6. For the reasons explained above, I believe that the actions you have described in reference (c) are inadequate to obtain any substantive improvements in (shipyard B's) procurement, pricing and cost control practices.

7. It appears to me that references (a) and (b) were referred for action to the very people in NAVSHIPS who for years have had the responsibility for administering shipbuilding contracts—the same people who are responsible for existing unsatisfactory conditions. Thus, the comments in reference (c), predictably tend to understate the problems and obfuscate the issues. Reference (c) gives the impression that NAVSHIPS now has all the problems under control. I know of no significant improvements in any of the problem areas I identified.

8. In my opinion, NAVSHIPS is not administering its shipbuilding contracts properly. Thus, after many years of dealing with (shipyard B) and spending billions of dollars there, NAVSHIPS finds itself in the position where it must today initiate action to require (the shipyard) to implement effective cost controls; to correct fundamental deficiencies in its procurement system; to implement the requirements of the Truth-in-Negotiations Act which was passed by Congress eight years ago; and to implement an effective system of internal review. These facts are ample evidence that NAVSHIPS has not been effective in administering its shipbuilding contracts at (shipyard B).

9. I believe that these issues should be taken up with the President of (shipyard B) and his commitment obtained for prompt and effective corrective action. I will be pleased to assist in this regard. Delay in obtaining such commitments and corrective actions will lead to further unnecessary cost to the Government.

10. I also recommend that the administration of Navy shipbuilding contracts be thoroughly reviewed. In my opinion, the Navy must reorganize and strengthen its administration of these contracts.

H. G. RICKOVER.

Copy to Assistant Secretary of the Navy (Installation & Logistics), Chief of Naval Material.

(Enclosure 1)

UNITED STATES GOVERNMENT MEMORANDUM.

Date: January 26, 1970.

To: VADM H. G. Rickover.

From: M. C. Greer.

Subject: Cost Controls at (Shipyard B).

BACKGROUND

In connection with the negotiations with (shipyard B) to definitize a contract for construction of (deleted) the NAVSHIPS negotiating team is performing a review of how (the shipyard) controls ship construction costs. This review was considered necessary in order to determine whether or not (the shipyard's) cost control system is adequate to effectively control the costs of labor and material during (deleted) construction.

SUMMARY AND CONCLUSIONS

The review to date shows that there are two significant deficiencies in the present (shipyard) cost control system:

1. There is no way to insure that work performed by the operating departments is within cost budgets established under the (shipyard) cost control system.

2. It could take up to several months to determine whether a cost overrun condition exists and the reason therefor.

Thus it will be necessary to establish a special reporting system to review costs in constructing (deleted) and other nuclear ships. The Navy should require (the shipyard) to improve its cost control procedures. In addition, the Navy should take steps to provide for adequate review of (the shipyard) costs and cost control procedures by the Supervisor of Shipbuilding.

DISCUSSION

On 16 January 1969, a meeting was held at NAVSHIPS to review (the shipyards) cost controls for constructing (deleted). This meeting confirmed that (the shipyard) has prepared and issued operating budgets for constructing (deleted). These budgets allocate contract dollars among cost groupings at the departmental level.

Separate from the cost control system, (the shipyard) has a production control system for managing the work. Under the production control system the total construction effort is broken down into discrete time phased packages of work for accomplishment by shop and waterfront trades. (The shipyard) also establishes manhour estimates for performing certain individual jobs in accordance with a labor incentive system. However, when questioned as to whether or not costs could be controlled under these various systems, the (shipyard) Contracts Manager stated that under the present system there is no way to insure that work performed by the operating departments under the production control system is within the cost budgets established by the cost control system. He also stated that (the shipyard) had been working at resolving this problem for some time but had not yet found a satisfactory solution.

Based on these discussions the NAVSHIPS Contracting Officer recommended that a special NAVSHIPS team headed by the (deleted) Program Manager be established to work with (shipyard) Cost Department personnel in developing a cost reporting system which will provide a valid means of determining the status of (deleted) labor construction costs and predicting cost overruns.

On 22 January the NAVSHIPS team and representatives from the Supervisor of Shipbuilding and the resident Defense Contract Audit Office met with (shipyard) Contracts and Cost Engineering personnel at (the shipyard) (shipyard) personnel explained that three basic cost reporting systems exist at (the shipyard) :

- a. A cost budget/cost reporting system by specific cost accounts.
- b. A cost budget/cost reporting system functional department.
- c. A profit and loss report by hull.

Costs as reported under the first two systems were reviewed in detail by the NAVSHIPS team. The third system involving profit and loss cost reporting was not made available for review. Based on its review the NAVSHIPS team concluded it was not possible to determine from the existing cost reports the status of costs incurred for ship construction work versus the expected costs to completion. Neither did the cost reporting system provide a means of identifying where or why cost overruns occurred so that specific corrective action can be taken to limit the overrun or prevent its recurrence. (Shipyard) personnel stated that they compared the general trend of departmental labor costs to budgeted costs to determine whether a cost overrun condition exists. (The shipyard) agreed that it could take several months to detect a cost overrun from the cost reporting system.

It is apparent that improvements in the existing (shipyard) cost control system are necessary. It was also apparent that because [deleted] construction work had been in progress for two years, it would not be possible to develop a reliable cost control system which related work as performed under the production control system to budgeted costs developed from a negotiated ship construction price. Instead, emphasis will have to be placed on developing a cost reporting system which will provide a means of determining the status of [deleted] labor costs. These costs will then have to be analyzed against the progress of the work in order to ferret out potential problems. The NAVSHIPS team will develop requirements for reporting cost progress and the expected completion costs of each cost grouping. (The shipyard) agreed to review the NAVSHIPS requirements, and incorporate those requirements which are compatible with the existing cost control system.

On 23 January 1969, I telephoned the Supervisor of Shipbuilding, [deleted] to inform him of the results of the NAVSHIPS review. I also asked who in his organization was responsible for monitoring the contractor's cost control system so that we could work with him in developing the Navy's cost reporting requirement. The Supervisor stated he had one person in the Purchasing Section who coordinated the correspondence and other actions pertaining to cost control. However, there was no one person with specific responsibility to monitor (ship-

yard) costs or (shipyard) cost control procedures. I recommended that he take steps to assign someone this responsibility. The Supervisor made no specific commitment to do so.

RECOMMENDATION

In view of the large amount of Navy business which will be awarded to (shipyard B) on the basis of negotiation rather than competitive prices and the Government risk of cost overruns on these contracts, I recommend that you again take this matter up with the Commander of the Naval Ship Systems Command. I believe that the Commander should obtain specific commitments from the President of (shipyard B) to initiate immediate improvements in its cost control system. I further recommend that action be taken to provide for adequate review of shipyard costs and cost control procedures by the Supervisor of Shipbuilding at [deleted] and at other shipyards where the Government bears substantial cost risk in its contracts.

M. C. GREER.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C.

[In reply refer to 08H-718, 19 Feb. 1970]

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS & LOGISTICS).

Via:

- (1) Commander, Naval Ship Systems Command.
- (2) Chief of Naval Material.

Subj:

Procurement Practices and Cost Control under Navy Contracts with (Shipyard A) for Design, Construction, and Overhaul of Nuclear Submarines.

Ref:

- (a) Deputy Commander for Nuclear Propulsion Memorandum to the Assistant Secretary of the Navy (Installations & Logistics) Ser 08H-01354 of 23 September 1969.
- (b) Commander Naval Ship Systems Command Letter to the Assistant Secretary of the Navy (Installations & Logistics) Ser 357 of 24 November 1969.
- (c) Commander Naval Ship Systems Command Letter to the Assistant Secretary of the Navy (Installations & Logistics) 0763:JF:dsr Ser 2 of 20 January 1970.
- (d) Deputy Commander for Nuclear Propulsion Memorandum to Commander, Naval Ship Systems Command Ser 08H-714 of 16 February 1970.

Encl:

- (1) Comments on NAVSHIPS review of (shipyard A) Subcontracting.
- (2) Comments on NAVSHIPS review of (shipyard A) Cost Control.
- (3) Comments on NAVSHIPS review of (shipyard A) Progress Payments.
- (4) Comments on NAVSHIPS review of Principles and Procedures for Settling Shipbuilder Claims and Change Orders.
- (5) Comments on NAVSHIPS review of Government Surveillance of Operations at (shipyard A).

1. On September 13, 1969, I forwarded to you a comprehensive report, reference (a), pointing out many serious deficiencies in cost control and procurement practices under Navy ship design, construction and overhaul contracts with (shipyard A). This report shows that the Government is paying more than it should for the work being done; there are wide-spread deficiencies in procurement practices; there is inadequate control over labor and material costs charged to Government contracts and inadequate Government surveillance of contractor operations. I pointed out that the situation at (this shipyard) warranted further investigation by experienced procurement and cost control specialists to establish the full facts and to develop comprehensive corrective measures to preclude such waste of Government funds in future. I gave several specific recommendations for corrective action at (this shipyard) and at other shipyards.

2. On November 24, 1969, Commander, Naval Ship Systems Command (COMNAVSHIPS), by reference (b), forwarded to you reports on these deficiencies from the Resident Defense Contract Audit Agency (DCAA) Auditor and from the Supervisor of Shipbuilding (SUPSHIPS) at (deleted). On January 20, 1970, COMNAVSHIPS, by reference (c), forwarded to you six enclosures summarizing NAVSHIPS review of the issues I had raised and presenting his conclusions and planned actions with regard to my recommendations.

3. In their reports, the Resident DCAA Auditor and SUPSHIPS took exception to many of the issues I had raised. COMNAVSHIPS also expressed disagreement with several of my conclusions and recommendations. In those cases where COMNAVSHIPS indicated agreement with me, he cited at some length NAVSHIPS actions which have been or were being taken, indicating that most or all of these actions were taken or would have been taken regardless of my report. In sum, the conclusions of the Resident DCAA Auditor, SUPSHIPS (deleted), and COMNAVSHIPS are that my report is in error with respect to many basic facts; that in those areas where my report is correct, the cognizant officials were already well aware of the problems and were taking appropriate actions to correct them; and that the thrust of many of my recommendations would be to treat (shipyard A) as a "captive" plant, contrary to the Department of Defense (DOD) policy of "disengagement" which contemplates minimal interference in a contractor's operations. In reference (c) COMNAVSHIPS states:

"... Our SUPSHIPS offices are staffed in an austere manner in accordance with the DOD policy of disengagement; tightening control and surveillance over the Contractor would require increased SUPSHIPS personnel. Nowhere in any of the recommendations made by the Deputy Commander is it contended that a better ship would result, only that the contract cost would be lower. I am unable to determine that the short-range costs of closer surveillance of flexibly-priced contracts, due to increased contractor overhead and increased SUPSHIPS staffing will be offset by the savings that are implied by the suggestions of reference (a) . . ."

4. COMNAVSHIPS statement that "nowhere in any of the recommendations made by the Deputy Commander is it contended that a better ship would result, only that the contract cost would be lower" is not germane to the issues I raised. Of course I am interested in obtaining high quality ships. I am also interested in carrying out Presidential, Congressional, Secretary of Defense, Secretary of Navy, Chief of Naval Material, COMNAVSHIPS and your own instructions to see to it that work is done in the most economical manner.

5. (Shipyard A) is a "captive" plant by its own choice: more than 98 percent of all business at the yard is Government work. Most of this work is under sole source, negotiated contracts under which the Government bears all or a substantial portion of any cost overruns. Since profits on these contracts are negotiated as a percentage of estimated costs, higher costs, in the long run, result in higher profits. Thus the contractor has little or no incentive to keep costs down. In these circumstances the Government cannot afford to rely on (the shipyard) to protect the Government's financial interests—as my report amply shows.

6. Instead of thoroughly investigating the issues I raised, COMNAVSHIPS has simply referred my report to the very people who for years have had the responsibility for administering shipbuilding contracts—the very same people who are responsible for the unsatisfactory conditions at (this shipyard). Their response, of course, is that everything is under control and being well-handled by the existing organization. Thus, there have been no significant improvements in any of the problem areas I pointed out.

7. Enclosure (1) through (5) contain my detailed comments on each of the principal issues covered by COMNAVSHIPS in references (b) and (c). I strongly disagree with the conclusions drawn by COMNAVSHIPS and with those of the Resident DCAA and of SUPSHIPS at (deleted). For example:

a. In enclosure (1) to reference (c) COMNAVSHIPS states that the procurement deficiencies I reported were known prior to my 13 September 1969 report: that Government approval of (the shipyard's) procurement system was permitted to lapse on 1 October 1969; and that the Supervisor of Shipbuilding will take "continuing action" to correct contractor procurement deficiencies.

The procurement deficiencies at (shipyard A) should have been known long before September, 1969. My November, 1968, letter to your predecessor

and my follow-up letters to you in February and March, 1969 concerning the need for improvement in ship procurement practices were attempts to bring the problems in this area to the attention of the responsible Navy officials. However, it is obvious that little has been done to improve (shipyard A's) procurement practices. Attachment A to enclosure (1) of this letter is a current example of poor procurement practices by (the shipyard) resulting in NAVSHIPS repeated rejection of (one shipyard) procurement recommendation. Most significant is the failure of (shipyard) management to recognize the seriousness of the deficiencies in their procurement practices. Obviously NAVSHIPS has not been effective in getting contractor management to work constructively to correct procurement practices.

b. The Resident DCAA Auditor states that the contractor's system for the accounting and control of labor costs is adequate and that the Government's surveillance of the contractor's labor charging practices has also been adequate. I can ascertain no factual basis for this conclusion. These areas have not been reviewed adequately. Numerous deficiencies still exist in the contractor's material control system; as of 31 December 1969, the Government was still being denied access to pertinent financial information. I do not know whether the Government auditor has yet been able to obtain access to such information.

c. COMNAVSHIPS reports that the present progress payment procedure which allows (the shipyard) to obtain payment from the Government for materials before (the shipyard) actually incurs the cost and before materials are issued from inventories is "acceptable to NAVSHIPS and DCAA." COMNAVSHIPS further points out that progress payments on fixed priced type contracts are based on physical completion rather than incurred costs. The implication is that (the shipyards) mischarging of material costs has no impact on shipbuilding contract payments.

Again I do not believe NAVSHIPS has looked adequately into the issues I raised. The contractor certainly considers that advance charging of material costs to the Government has a significant effect on shipbuilding contract payments. For example, (the shipyard) recently paid one of its employees an incentive award of \$1,231 for suggesting that certain miscellaneous inventories of stock be charged off to the Government before they are used, so that a progress payment could be collected. The employee, in his suggestion, stated:

"Presently the Government cannot be billed until the material is actually used. By adopting an allocated type inventory for this material, the Government can be billed when the material is paid for because it is bought for use on a specific contract. Then, in effect, the Government finances this inventory for (the shipyard). . . . [This suggestion] generates funds for (the shipyard)."

Thus, in this case the Government will not only be paying higher progress payments, it will also have to pay 98% of the incentive award which led to the higher progress payments by the Government.

d. COMNAVSHIPS considers present procedures for handling claims and contract changes to be adequate. I cannot understand how such a conclusion could be reached when contractors are allowed to commingle costs of changes with other work such that there is no firm basis for the Government to verify the costs claimed by contractors.

e. Present hiring practices by the Supervisor of Shipbuilding are acceptable to NAVSHIPS even though about one-third the personnel representing the Government at (the shipyard) are former (shipyard) employees. While the practice of staffing Government contract administrative offices with former contractor employees may be permitted by law or regulation, such action surely cannot be in the Government's interest.

f. The lack of detailed Government surveillance of the contractor's operations at (the shipyard) is attributed by COMNAVSHIPS to DOD's policy of "disengagement", under which the Government relies on the contractor to control costs under Government contracts. Such an approach, particularly in a shipyard doing 98% of its business with the Government, makes no sense. With respect to this question of contractor-Government relationships there is no question but that the Navy has been complying *fully* with "the DOD policy" of minimal interference. As a result, the contractor is engaging in a wide variety of practices which are no doubt beneficial to *him*, but costly to the *taxpayer*.

8. The issues I raised are fundamental to sound administration of the Navy's shipbuilding program. They are not minor procedural matters as one might infer from reading the referenced COMNAVSHIPS letters to you. I believe that the seriousness of these issues and their adverse impact on the Navy is not yet understood. Unless we take prompt action to bring costs under control, the Navy will not be able to get funds from Congress to build all the ships it needs.

9. The NAVSHIPS actions on the issues I raised in reference (a) reminds me of a similar experience more than 10 years ago. In 1959, I pointed out several overcharges on Government contracts by (another) shipyard to the Comptroller of the Navy. His response was to tell me that I should mind my own business and that I could rest assured his auditors were seeing to it that the Government was being treated fairly. It was not until the GAO two years later investigated the issues I raised that the Navy finally took action to recover these overcharges. The result was a GAO report to Congress and severe criticism of the Navy—criticism which could have been avoided had Navy officials taken corrective measures when I raised the issues, instead of defending their past actions. Moreover, it took the Navy 7 years to settle these issues on an after-the-fact basis. The Navy then had to settle for 50 cents on the dollar for money it wasted because of inadequate contract administration. I hope the Navy will not again wait for the GAO to raise the issue with Congress before it takes action to correct procurement and cost control deficiencies at (Shipyard A) as well as at other shipyards.

10. Over the years, I have worked hard to improve administration of our shipbuilding contracts. I have spent a great deal of my time and that of my leading people in pointing out deficiencies that come to my attention to cognizant naval authorities. Invariably the response to my comments by the officials concerned is to deny that real problems exist, and to cloud the issue with bureaucratic policy and procedural comments in defense of what they have been and are doing. Little or no action is taken. Inevitably, however, the facts come to light. I do not make comments and recommendations lightly or without careful consideration of the facts.

11. In my opinion these issues warrant your personal attention and direction. Without such personal involvement, nothing will be done; references (b) and (c) clearly attest to this. I recommend that you take these issues up with (the parent corporation's) management and to obtain commitments for prompt and effective corrective actions. Further, I recommend that you assign a competent and qualified person to keep track of the progress made in correcting these deficiencies and keep you advised of progress. Finally, I recommend that steps be taken to thoroughly review the administration of Navy shipbuilding contracts. Our SUPSHIPS organizations devote much time to the review and inspection of technical data, plans, ship construction and so forth. Their effort is also needed to review and monitor cost control, procurement, and management of contractor operations.

H. G. RICKOVER.

Copy to
Assistant Secretary of the Navy
(Installations & Logistics)
Chief of Naval Material.

[Enclosure (1)]

VADM RICKOVER COMMENTS ON NAVSHIPS REVIEW OF (SHIPYARD A)
SUBCONTRACTING

1. *Problem & Recommendations, as Stated in VADM Rickover's Report Dated September 23, 1969:* There are widespread weaknesses in the company's procurement operations.

Specifically:

a. Procurement files do not adequately justify prices being paid by (the shipyard).

b. There seems to be an excessive and unwarranted amount of sole-source procurement. It appears that many of these sole-source procurements have been overpriced.

c. (The shipyard), is not making effective use of the Truth-in-Negotiations Act to obtain the lowest possible prices for the Government.

d. Insufficient effort is being expended to reduce the cost of supplies and materials charged to Government contracts.

e. Competitive procurements are not handled properly. As a result, there is no assurance that all qualified firms have an equal opportunity in the bidding process or that reasonable prices are being obtained.

f. The lax procedures and practices employed in the procurement of equipment and material for Government contracts are in sharp contrast with the close attention paid by (the shipyard) and (the parent corporation's) Management in procurements involving corporate funds.

The Navy should withdraw approval of the procurement system. The company should be required to submit all proposed subcontracts in excess of \$25,000 for Government review and approval prior to placement.

2. *COMNAVSHIPS Response & Proposed Action:* COMNAVSHIPS states:

"The approval of the system was permitted to lapse on 1 October 1969. Prior consent of the Contracting Officer to the placement of a subcontract is now required for subcontracts under those contracts containing the

"Subcontracts" clause . . . NAVSHIPS does not consider it necessary to negotiate an agreement with the contractor to modify existing contractual requirements in order to obtain the contractual right to approve all subcontracts in excess of \$25,000. NAVSHIPS will direct SUPSHIPS to review on a sampling basis, to the extent of available resources, subcontracts over \$25,000 under those contracts containing the "Subcontract" clause."

Proposed Action:

<i>Item</i>	<i>Target date</i>
a. SUPSHIP actions to correct contractor's Procurement deficiencies -----	Continuing Action.
b. SUPSHIP to conduct sampling reviews of subcontracts over \$25,000 -----	Continuing Action.

3. *Comments on COMNAVSHIPS Response and Proposed Action:*

Enclosure (1) to reference (b) states that "prior to the review reported by reference (a), NAVSHIPS became concerned with the subcontracting procedures in the shipbuilding industry." The enclosure went on to state that SUPSHIP became aware "that deficiencies existed in the contractor's system in placing subcontracts prior to the review contained in reference (a). This concern was reflected in a letter of 8 July 1969 to NAVSHIPS requesting that a qualified Procurement Methods Analyst be provided to conduct a review of the contractor's procurement system."

The problem should have been known for some time. In November, 1968, I reported to the Commander of the Naval Ship Systems Command, the Chief of Naval Material, and the Assistant Secretary of the Navy (Installations & Logistic's) a number of specific examples of (shipyard A's) and (shipyard B's) procurements which indicated serious deficiencies in the procurement operation of these two yards. In April, 1969, I submitted a detailed report of deficiencies in procurement and cost control practices at (shipyard B). However, (shipyard A) continued to operate under a Government-approved procurement system until Government approval was allowed to lapse on October 1, 1969—the normal expiration date for the approval granted the year before.

Although I raised this issue in November, 1968, a Government review of (shipyard A's) procurement system was not conducted until October-November, 1969. This review confirmed the deficiencies I reported. Thus more than a year has passed since I first pointed out problems regarding how (the shipyard) was conducting its procurements under Government contracts. During this time, (shipyard) procurements were running at an annual rate of \$50 to \$80 million; about 30% of the cost of each ship built at (the shipyard) is spent through (the shipyard's) purchasing department.

Attached to this enclosure is a series of letters between NAVSHIPS and (the shipyard) on a pending forging procurement for SSN (deleted). It is apparent from (the shipyard's) actions and their statements that nothing concrete has been accomplished by NAVSHIPS or SUPSHIP "continuing action" to correct procurement deficiencies. Of most significance is that (the shipyard's) management does not appear to recognize the seriousness of the deficiencies in their procurement practices. Thus NAVSHIPS has not been effective in getting (the shipyard's) Management to take action to upgrade its procurement operations.

I consider that NAVSHIPS has placed too much concern on procedural matters and in defending past actions. NAVSHIPS has operated too long on the premise that its shipbuilding contracts have been awarded in a highly competitive market

such as one might expect to find in procuring bread or clothing. This accounts for the belief on the part of many Government officials that the Government can rely on its contractors to spend public funds prudently.

The principle involved is fairly simple. Large amounts of Government funds are at stake in the procurement operation of shipbuilders such as (Shipyard A). There is ample evidence that these funds are not being spent prudently. I have repeatedly pointed out that shipbuilders have no incentive to tighten up their procurement organizations. Shipbuilding is a noncompetitive business. The Navy must take action with its shipbuilders to get their procurement on a sound basis so that the Navy gets fair value for its money.

[Attachment A to Enclosure (1) to NAVSHIPS letter 08H-718 dated February 19, 1970]

PROCUREMENT OF MAIN SEA WATER SYSTEM FITTINGS FOR SSN (DELETED)

(Shipyard A) letter dated November 25, 1969, requested NAVSHIPS consent to procure SSN (deleted) main sea water system fittings from (a component supplier) at a price of \$482,014.79.

NAVSHIPS letter 08H-6402 dated December 19, 1969, disapproved the (shipyard's) request noting bid procedures were not adequate to support a competitive award, negotiations were not conducted with all suppliers in a competitive range and (the shipyard) did not perform a price analysis to establish the reasonableness of the recommended price. NAVSHIPS requested (the shipyard) reopen negotiations with both bidders.

(Shipyard A) letter dated January 6, 1970, forwarded by SUPSHIPS letter Ser. 400-4C dated January 8, 1970, requested NAVSHIPS approval to proceed with award of the main sea water fitting order as originally recommended and without reopening negotiations.

NAVSHIPS letter 02B:JF:epm Ser 1 dated January 29, 1970, again disapproved the (shipyard's) request due to the previously noted deficiencies. (The shipyard) was requested to reopen negotiations with both (component suppliers) to obtain the lowest price for the required work.

(Shipyard A) letter dated February 10, 1970, forwarded by SUPSHIPS letter Ser. 400-23C dated February 12, 1970, requested NAVSHIPS concurrence to a proposed procedure in handling this procurement. (The shipyard) proposes to issue a new invitation to bid to (both component suppliers). (The Shipyard) requests NAVSHIPS approval to accept the low bid without further negotiation.

NAVSHIPS letter 022C:JF:epm Ser 2 dated February 18, 1970, insists that (the shipyard) reserve the right to negotiate if necessary to obtain a reasonable price. (The shipyard) is again informed that Government consent to this procurement will not be granted unless (the shipyard) can establish the reasonableness of the price.

NOVEMBER 25, 1969.

Subject: Request to Award Purchase Order E-701-350 for Procurement of CuNi Butt Weld Fittings for Main Sea Water System to (Supplier X) in the amount of (deleted).

Reference: (a) Contract No. (deleted) for SSN (deleted).

Enclosure:

- (1) (Shipyard A) Purchase Order No. E-701-350.
- (2) Bid Comparison Sheet. Inquiry 51/701-350/9.
- (3) (Supplier X) Quotation dated 10/3/69, EW-1003-1.
- (4) (Supplier Y) Quotation dated 10/9/69, 2183 BL.
- (5) (Supplier Y) Revised Quotation dated 11/4/69, 2183 BL.
- (6) Telegram to (Supplier Y) dated 11/6/69.
- (7) Report of Trip to (Supplier X) dated 10/23/69, (name deleted).
- (8) Evaluation of (Supplier X) Capabilities to Produce 16" CuNi Fittings for SSN (deleted) dated 10/28/69, (name deleted).
- (9) NQC Survey Report dated 10/28/69, (name deleted).
- (10) Report of Trip to (Supplier X) dated 10/23/69, (name deleted).
- (11) Survey of SSN (deleted) Main Sea Water Fitting Vendor, dated 10/28/69, (names deleted).
- (12) (Contract No. deleted)—SSN (deleted) Design—Purchase of Main Sea Water Fittings (Purchase Inquiry No. E-701-350), dated 10/31/69, (names deleted).
- (13) Trip Report dated 11/6/69, File No. 392JLM-5014/M-12.

NAVAL SHIPS SYSTEM COMMAND,
 Department of the Navy,
 Code 022, Washington, D.C. 20360

(Attention: (Name deleted) Contracting Officer)

SIR: Your consent is requested to award the subject purchase order, enclosure (1), to (Supplier X) in accordance with Clause 24 of reference (a) entitled "Subcontracts (April 1967)".

I. Description of Subcontract

Hardware to be procured by enclosure (1) consists of 16" CuNi Seamless Butt Welding Fittings for Main Sea Water System. This is a first time development and manufacture of fittings of this particular size and material. Covered by this order are 64 total pieces of various configurations, including elbows, tees and reducers.

(Supplier X) will produce tubes from billet stock, procured from (a sub-tier supplier) by the reverse extrusion process, in lengths up to 60". Extrusions are machined on I.D. and O.D. to specific size required for fitting manufacture.

Fittings will be formed by various methods, both cold and a combination of cold and hot. Basically for elbows, the J method will be used which consists of forcing cold tubing over a mandrel with a controlling O.D. die to the desired size and shape.

Other configurations are manufactured by different methods, a detailed description of which is covered by enclosure (13).

Manufacture of these fittings requires close process and dimensional controls from the raw material stage to the shipment of finished fittings.

(Supplier X's) process allows for the close control that is required.

II. Degree of Competition and Selection Competence

Quotations were received from only two (2) vendors of four (4) solicited. Quotations received were (deleted) (supplier X) and (deleted) (supplier Y). (Supplier X) was the low bidder for the total procurement package. Our reasons for the selection of (supplier X) other than the fact that (supplier X) was low bidder, are as follows:

(a) (Supplier X) has consistently supplied (Shipyard A) quality fittings at competitive pricing.

(b) (Supplier X) has maintained reliable delivery schedules. Schedule is a critical consideration.

III. Price and Delivery Comparison

1. Since this is a first time procurement for these items, there is no previous order for a direct price comparison.

2. (Supplier X) quoted 8-10 months delivery in comparison with a 14 month delivery from the competitive source. This 8-10 month delivery supports the in-yard requirements of (the shipyard). (Supplier X) was selected for evaluation due to their overall low bid position (tools and hardware combined) and the substantially lower quoted price of the hardware alone.

3. A comparison of hardware only prices on this award, indicates a savings of 25-30% on future orders. Further reductions will be sought on subsequent buys as this vendor's efficiency improves with experience. Since these buys are usually in the high-dollar classification, the savings should be substantial.

IV. Use of Government Owned Facilities

(Supplier X) has stated that no Government owned facilities will be required for the manufacture or testing of these fittings.

V. Anticipated Subcontracting

The sole sub-tier contract, in excess of \$100,000.00, is the procurement of CuNi material from (a sub-tier supplier) (120,000 pounds of (raw material) @ \$1.32 per pound). The price is from the (sub-tier supplier's) published price listing. (Supplier X) will comply with all contractual requirements pertinent to subcontracts and purchased material that are invoked in enclosure (1).

(The sub-tier supplier) was selected as the raw material supplier because of proven ability to produce nickel bearing alloys of the highest quality. Material quality is of paramount consideration when producing fittings of this size. There is no other prime supplier of this nickel alloy material. (The sub-tier supplier) has a Nuclear Quality Control System approved to MIL-Q-9858.

VI. Make or Buy Decision

(The shipyard) does not possess the capability for the manufacture of these specialized Butt Weld Fittings. Because of the technical skills and manufacturing facilities required, it must be designated a buy item.

VII. Type of Contract

This procurement is a fixed price contract, subject to adjustment for price of raw material in effect at time of delivery from (the sub-tier supplier) to (supplier). The price is now based on 120,000 pounds of (raw material) @ \$1.32 per pound as purchased from (the sub-tier supplier). We were unable to obtain firm fixed priced proposals from either bidder due to the unstable condition of the nickel market.

VIII. (Supplier X) Procurement System

(Supplier X) has satisfactorily completed contracts for similar hardware under Government contracts and has satisfactorily completed numerous (shipyard A) purchase orders in the various overhaul programs. Based on (supplier X's) past experience in manufacturing hardware to Military Specifications, for the Government and this yard, their procurement system is considered adequate for the task to be performed.

IX. General Information Pertinent to the Contract

1. The one (1) small business solicited, [deleted], declined to bid.
 2. (Supplier X) is not a foreign contractor. Foreign sub-tier contractors will not be utilized by this vendor. Neither (Supplier X) nor (the sub-tier supplier) are in any way affiliated with (shipyard A).
 3. This purchase order incorporates special tooling as a separate item of cost. This tooling will remain the property of (Supplier X). This is the forged fitting industry practice. It provides for (Supplier X) to retain and maintain the tooling at no cost to (the shipyard) for the production of these or similar fittings in the future. The purchase order tooling charge also covers the cost of equipment modification necessary to adapt existing forging presses to the manufacture of these fittings.
 4. This purchase order does not include charges for special test equipment or other lease or service arrangements.
 5. Other than the one small business solicited [deleted], the scope of the work on this purchase order restricts consideration to large business. Labor surplus areas cannot be considered for the same reason.
 6. The (Supplier X) tooling and equipment modification costs for this procurement are higher than the nearest competition [deleted], but (Supplier X's) processing and equipment capability allow for production of finished fittings at lower cost and with better hardware delivery [deleted] and 8-10 months delivery vs [deleted] and 14 months delivery). This tooling has the added advantage of being adaptable to manufacture of other sizes, should the need for other size systems arise.
 7. (Supplier X) has evidenced consistently superior performance in delivery of Butt Weld Fittings to (the shipyard).
- To further evaluate their capabilities and facilities, a survey and a series of meetings were held recently at their manufacturing facilities. The findings of these discussions and the survey results are submitted herewith as enclosures (7) through (13).
8. (Supplier X) will manufacture fittings and coordinate the entire job from their (deleted) plant. This facility has a Quality Control System approval to MIL-Q-9858. The most recent system survey was 12/5/68.
 9. (Supplier X's) performance to Nuclear Quality requirements for SSNs (deleted) has been above average for their product line as substantiated by (shipyard) Nuclear Receiving Inspection records.
 10. (Supplier X) has stated that they have adequate financing to perform this order. (Supplier X) presently has an annual sales volume in excess of \$80 million, of which approximately \$20 million is in custom forgings to the major aircraft and aerospace manufacturers. Therefore this purchase represents a comparatively small portion of their overall productive capability. The acceptance of this order by (Supplier X) is consistent with their plan to change their emphasis towards "more specials and less standards".

On November 6, 1969, enclosure (5), a revised bid was received from (Supplier Y). (Supplier Y) was advised by wire, enclosure (6), dated November 6, 1969, that their revised bid was received too late for consideration.

(The shipyard) has elected not to consider the (Supplier Y) revised bid for the following reasons:

1. Source selection has been made on bid responses received on October 3 and October 9, 1969.

2. Final technical agreement was reached with (Supplier X) on October 24, 1969.

3. (Supplier Y's) revised bid was received thirty-four (34) days after the final response date requested by (the shipyard).

4. Consideration of the November 6, 1969 (Supplier Y) proposal, in view of its timing, would compromise the integrity and purpose of our competitive bid system.

The analysis herein establishes to the satisfaction of the undersigned that the price for the subject purchase order is reasonable. Your consent to award the subject purchase order to (Supplier X) is respectfully requested.

Very truly yours,

(Name deleted),
Manager of Procurement.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C.

[In reply refer to 08H-6402, Dec. 19, 1969]

From: Commander, Naval Ship Systems Command.

To: Supervisor of Shipbuilding, Conversion and Repair (deleted).

Subject: (Shipyard A) Recommendation to Procure Main Sea Water System Fittings for SSN (deleted) NAVSHIPS disapproval of with comments.

Ref: (a) (Contract No. deleted) (SSN deleted) (Shipyard A) letter to NAVSHIPS dated 25 November 1969, Request to Award Purchase Order E-701-350 w/enclosures

(b) NAVSHIPS ltr 0763 :JF:dsr Ser 278 of 23 September 1969.

1. Reference (a) requests NAVSHIPS consent to procure SSN (deleted) main sea water system fittings from (supplier x) at a price of (deleted).

2. NAVSHIPS has the following comments on (shipyard A's) proposal:

a. The bid procedures followed by (shipyard A) do not appear adequate to support a competitive award. The following is a chronology prepared from information presented by (the shipyard) in reference (a) :

26 August 1969-----	Inquiry Issued.
9 September 1969-----	Original Bid Due Date.
1 October 1969-----	Revised Bid Due Date.
3 October 1969-----	(Supplier x) Bid Received (deleted).
9 October 1969-----	(Supplier y) Bid Received (deleted).
6 November 1969-----	(Supplier x) Revised Bid Received (deleted). Rejected by (the shipyard) as a late bid.

From the above chronology it appears that (the shipyard) did not follow formal bid opening procedures. For example, all bids were received after the revised bid due date. There is no indication that all potential bidders were informed of an extension to the revised bid due date. Further it is not clear that (the shipyard) opened all bids concurrently or that adequate safeguards were taken to preclude unauthorized release of bid information prior to the time all bids were received.

b. The information contained in reference (a), does not support award through a negotiated procurement either. Specifically although the bids of (supplier y) and (supplier x) are obviously within a competitive range (deleted) to (deleted), it appears that (the shipyard) did not negotiate price or delivery with (supplier y). (The shipyard's) negotiations with (supplier x) seem to have been limited to those fittings for which (supplier y) had submitted a lower bid. The potential for obtaining a lower price through effective negotiations appears obvious because (supplier y) subsequently offered a price (deleted) lower than the price (the shipyard) negotiated with (supplier x) and recommended to NAVSHIPS. Consequently, NAVSHIPS has no assurance that (the shipyard) has obtained the lowest price available.

c. Reference (a) does not provide sufficient information to establish that the recommended price is reasonable. Specifically:

(1) (The shipyard) did not conduct, or at least did not submit, a price analysis in support of the recommended price. As a minimum (the shipyard) should have compared the proposed price with historical prices of similar fittings such as those procured for use on SN (deleted) with price per pound

information on prior orders or some other rough yardstick, and with an independent engineering estimate;

(2) (The shipyard) does not justify why the recommended price includes (deleted) more for special tooling than the other supplier's quote. Moreover, (the shipyard) does not explain the impact of this difference on the extent of competition obtained;

(3) (The shipyard) stated that the price of a (deleted) sole-source sub-contract with (a sub-tier supplier) for cooper nickel material was based on (the sub-tier supplier's) published price listing. However, reference (a) gives no indication that (the shipyard) has verified that the copper nickel material used for this application is in fact a commercial item sold in substantial quantities to the general public.

3. In view of the deficiencies noted in this procurement, the (shipyard) procurement recommendation contained in reference (a) is disapproved. SUPSHIPS should request (the shipyard) to reopen negotiations with both bidders to obtain the lowest price for the work required.

4. Reference (a) indicates a number of deficiencies in (the shipyards) procurement practices. Most of these deficiencies were previously pointed out in reference (b) and apparently have not yet been corrected. Therefore SUPSHIPS is requested to call this procurement to the attention of the General Manager, (shipyard A). The General Manager should be requested to correct the deficiencies identified in paragraph 2 of this letter in subsequent (shipyard) procurements as well as the procurement in question.

5. NAVSHIPS should be advised no later than 10 January 1970 of what action has been taken to ensure that subsequent (shipyard) procurements are conducted in accordance with sound procurement practices and to ensure that subsequent (shipyard) procurement recommendations are adequately supported.

(Name deleted),
Contracting Officer,
Naval Ship Systems Command.

/9480,
SER. 400-4C,
8 January 1970.

FIRST ENDORSEMENT ON (SHIPYARD A) ltr signed by (name deleted) on 6 Jan 1970.

From: Supervisor of Shipbuilding, Conversion and Repair, USN (deleted).

To: Commander, Naval Ship Systems Command

Attn: (Name deleted).

Subj: Request to Award Purchase Order E-701-350 for Procurement of CuNi Butt Weld Fittings for Main Sea Water System to (supplier X) in the Amount of (deleted).

1. Readdressed and forwarded for NAVSHIPS action since Contract (deleted), Modification P007, Clause 24 states in part that "Subcontracts exceeding \$100,000 which are under NAVSHIPS Code 08 technical cognizance shall require the consent of the Contracting Officer, NAVSHIPS Code 022."

2. SUPSHIP, (deleted) is monitoring the Contractor's procurement system and the Contractor's efforts to make improvements based on preliminary recommendations of the Contractor Procurement System Review Team Captain. The final report of the CPSR team has not been received. One of the preliminary recommendations was that the Contractor's bid control and opening procedure be improved. The Contractor is actively studying this recommendation, trying to prepare an improved procedure.

(Name deleted).

JANUARY 6, 1970.

Subject: Request to Award Purchase Order E-701-350 for Procurement of CuNi Butt Weld Fittings for Main Sea Water System to (supplier X) in the Amount of (deleted)

Reference:

- (a) Contract (deleted) SSN (deleted).
- (b) (Shipyard A) letter to NAVSHIPS, dated 25 November 1969, same subject.
- (c) NAVSHIPS letter 08H-6402, dated 19 December 1969 (NOTAL).
- (d) Supervisor of Shipbuilding, Conversion and Repair, USN, (deleted) letter, dated 29 December 1969. Ser. : 400-3034C, same subject.

SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN, CODE 400 (Deleted)

SIR: Reference (d) advises that Reference (b) consent request was denied by Reference (c) NAVSHIPS letter. Reference (d) also quoted the reasons for the denial as set forth in Reference (c) and requests (shipyard A) to advise your office of its intended actions to correct the deficiencies noted therein.

(Shipyard A's) response to the comments contained in Paragraphs 2.a, b, c and 3 of Reference (d) are listed below in that order.

Paragraph 2.a

This paragraph states that bid procedures followed by (shipyard A) "do not appear adequate to support a competitive award" and lists the following specifics as the basis for the statement:

- "A. It appears (the shipyard) did not follow formal bid opening procedures.
- B. All bids were received after the revised bid due date.
- C. There is no indication that all bidders were informed of an extension to the revised bid due date.
- D. It is not clear that (the shipyard) opened all bids concurrently or that adequate safeguards were taken to preclude unauthorized release of bid information prior to the time all bids were received."

(Shipyard A's) Comments

A. We interpret this statement to mean that (the shipyard) did not utilize procurement by formal advertising as provided for in Section II of Armed Services Procurement Regulations (ASPR) and therefore did not have a formal bid opening as prescribed in Part 4 of Section II. (The shipyard's) procurement system does not normally require the use of a sealed bid procedure nor does it require formal bid openings associated with such procedures. Moreover, we are not aware of any requirement that a prime contractor's specific detailed procedures for competitive awards must be the same as those set forth in ASPR for direct Government procurement by formal advertising. In our judgment, the receipt, handling and evaluation of the bids associated with the subject requirement were accomplished in accordance with established (shipyard) procedures which fairly and effectively achieve the objectives of the competitive process.

B&C. Reference (d) is correct in its statement that all bids were in fact received after the revised bid due date and that bidders were not informed of any extension in that date.

As a factual matter, the first responsive bid received (supplier x) was dated 3 October 1969, but was not actually received in the Procurement Department until 7 October 1969. The other responsive bidder (supplier y) had previously advised that their bid would be submitted on 8 October 1969 (actually received 9 October 1969). The two (2) other bidders (other component suppliers) had already declined to bid. We agree that, as a procedural matter, the bid due date of 1 October 1969 should have been officially extended prior to that time for an additional period of ten days and the bidders notified. However, this procedural oversight has no effect on the substantive merits of the case, since the competitive bids of (supplier x) and (supplier y) received on 7 October 1969 and 9 October 1969 respectively, were both considered. We cannot regard (supplier y's) second bid as a minor procedural shortcoming in a competitive bid situation when it was unsolicited and was received 28 days after its first bid and after (supplier y) had been verbally advised by (the shipyard) that it was not the low bidder.

D. As stated in A. above, (the shipyard's) procurement system does not require formal bid openings and therefore, the bids were not opened concurrently but rather as they were received. Regarding unauthorized release of bid information prior to the time all bids were received, each buyer is specifically charged with the responsibility for safeguarding bid information on procurements under his cognizance, and we find no evidence in this procurement that would indicate the unauthorized release of any information by (the shipyard) prior to receipt of all bids.

In summary, we consider that the bid procedures followed by (the shipyard) in this procurement, while not the rigid procedures required by Section II of ASPR for direct Government procurement by formal advertising, are consistent with prudent business practice and assure full and fair competition. Moreover, we have reviewed, in light of the comments of Reference (d), the guidelines set forth in ASPR Section 3-807.1(b) (1) for determining whether "adequate price competition" exists, and we are convinced that adequate price competition was in

fact obtained by (the shipyard) on the subject procurement. With regard to the procedural matters mentioned earlier, we are considering the preliminary recommendations resulting from the recently conducted Contractor Procurement System Survey which were discussed with us on 16 December 1969, including those recommendations pertaining to bid handling procedures.

Paragraph 2.b

Reference (d) states that (the shipyard's) original request for consent, Reference (b), does not support award through a negotiated procurement either. As stated in comments under 2.a above, (the shipyard's) original consent request was made on the basis of award to the low competitive bidder and was not intended to support award on any other basis. The following are (the shipyard's) comments with respect to the specific statements of Reference (d) :

We again assume that Reference (d) alludes to the Government's own practices regarding negotiated procurement as set forth in Section 3-805.1 of ASPR which requires negotiation with all responsible offerors who submit proposals within a competitive range, price and other factors considered. (The shipyard's) procurement system does not contain this requirement. Our practice does, however, provide that even in competitive procurements, where the qualified low bidder has been selected and will receive the award, negotiations with the qualified low bidder, *and only with him*, may be appropriate under certain factual circumstances in an effort to further reduce his price. Such was the case here. It should be emphasized that the award to the low competitive bidder under these circumstances is still a competitive award based on adequate price competition, regardless of whether negotiation *with the low bidder only* is considered appropriate and takes place and regardless of whether the award to the low bidder is made at his bid price or a lower price.

Paragraph 2.c

Reference (d) states that (the shipyard's) original consent request did not provide sufficient information to establish that the recommended price is reasonable. Our consent request, Reference (b), was submitted on the basis that a competitive award to the low bidder after adequate price competition sufficiently demonstrated the reasonableness of the price, especially when the award price was less than the low bidder's successful bid price. The following additional comments are related to the species listed in Reference (d) :

Subparagraph 2.c.1. As stated in Reference (b), the items being procured are of a developmental nature due to their size, configuration and material. Although the proposed cost per pound of these fittings compares favorably with the price per pound paid SSN (deleted) 14" fittings, we do not consider the comparison to be valid price analysis for the following reasons.

A. The SSN (deleted) 14" CuNi fitting program was also developmental; therefore, we have no way of determining the price/cost relationship.

B. SSN (deleted) fittings had some welded tangents; SSN (deleted) are all formed tangents.

C. The SSN (deleted) orders were placed in 1965.

D. The (supplier X) price is based on a different production process than that quoted by (supplier Y) and used by them (supplier Y) on SSN (deleted).

These make a meaningful comparison of the quoted prices for SSN (deleted) with prices paid for SSN (deleted) fittings impractical. An independent engineering estimate by (the shipyard's) personnel would have been of relatively limited value, since we do not have personnel knowledgeable in the specific manufacturing processes and techniques, and related costs, associated with large diameter, long tangent fittings.

Subparagraph 2.c.2. The difference between the tooling cost quoted by (supplier X) and that quoted by (supplier Y) appears to be the result of differences in the manufacturing processes employed by the two (2) bidders. (Supplier Y's) exact process is not known to us, since they consider this to be proprietary information. We must understand, however, that in the case of elbows, the starting tube is filled with a material and then the forming is accomplished through use of an external die. (Supplier X's) process involves the use of both internal and external dies of adjustable diameters. We do not see that this difference in tooling cost has any impact on the extent of competition obtained. The bidders competed for a contract to supply fittings meeting certain specifications and each was free to select any manufacturing process which produced the required end result.

Subparagraph 2.c.3. Since Reference (b) request for consent was based on award to the low bidder on a competitive basis, no attempt was made to justify that particular element of the vendor's bid. In fact, however, (the sub-tier supplier) does sell this material to (the shipyard), the Government and other firms on the basis of a published price list. This particular alloy is produced by (the sub-tier supplier) for Government end use only and is therefore not sold commercially. The cost included by (supplier X) for this material in their proposal is consistent with prices quoted to (the shipyard) and other of its suppliers for this material for other applications.

Paragraph 3.

This paragraph of Reference (d) as quoted from Reference (c) states that SUPSHIPS should request (the shipyard) to "reopen negotiations with both bidders to obtain the lowest price for the work required." (The shipyard) is strongly of the opinion that a reopening of negotiations with both bidders at this time and under the circumstances of this procurement would be tantamount to an improper auction technique and would compromise the integrity and effectiveness of (the shipyard's) competitive bid system. The recommended award to (supplier X) is also considered to be clearly in the best interest of the Government, as well as (the shipyard) for the following reasons:

1. It is an award to the low bidder on a competitive basis.
2. It provides for substantially earlier delivery of the fittings—i.e., 8 to 10 months versus 14 months—with delivery becoming increasingly critical.
3. It results in a second qualified and competitive source for future requirements for large-diameter CuNi pipe fittings.
4. It involves a lower recurring product cost since (supplier X's) non-recurring tooling cost was significantly higher, even though its total bid price was lower.

(The shipyard) therefore renews its request for consent to award the subject procurement to (supplier X) and urges that the Navy promptly grant the requested consent, since further delay in awarding this order will jeopardize construction schedules for SSN (deleted). If, notwithstanding our strong recommendation to the contrary, (the shipyard) is directed in writing by the Contracting Officer to reopen negotiations with (supplier X) and (supplier Y) we will of course comply with such directive.

As indicated in the final paragraph of Reference (d), a number of preliminary recommendations resulting from the recently conducted Contractor Procurement System Survey were communicated to us on 16 December 1969. We are presently studying those recommendations and intend to take positive action, where indicated, to strengthen our procurement system and render it more cost effective. We recognize that any procurement system, no matter how good it may be, always has room for improvement and we welcome constructive comments and recommendations directed toward such improvement.

Very truly yours,

(Name deleted),
General Manager.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C.

[In reply refer to SHIPS 02B :JF :epm (contract No. deleted) Ser 1, Jan. 29, 1970]

From: Commander, Naval Ship Systems Command.

To: Supervisor of Shipbuilding, Conversion and Repair (deleted).

Subj: (Shipyard A's) Recommendation to Procure Main Sea Water System Fittings for SSN (deleted) NAVSHIPS disapproval of, with comments

Ref:

- (a) (Contract No. deleted) SSN (deleted) (Shipyard A) letter to NAV SHIPS dated 25 November 1969, request to award purchase order B-701-350
 - (b) NAVSHIPS letter 08H-6402 dated 19 December 1969
 - (c) NAVSHIPS ltr 0763 :JF :dsr Sar 278 of September 1969
 - (d) (Shipyard A) letter to SUPSHIPS dated 6 January 1970, same subject
 - (e) Supervisor of Shipbuilding, Conversion and Repair, USN, (deleted) letter dated 8 January 1970; Sec: 400-4C
1. Reference (a) requested NAVSHIPS consent to procure SSN (deleted) main sea water system fittings from (supplier X) at a price of (deleted)
 2. Reference (b) disapproved the (Shipyard A's) request and identified a number of deficiencies in the (shipyard) procurement recommendation. Bid

procedures were not adequate to support a competitive award, negotiations were not conducted with all suppliers in a competitive range, and (the shipyard) did not perform a price analysis to establish the reasonableness of the recommended price. Similar deficiencies on other (shipyard) procurements were previously identified in reference (e). In view of the noted deficiencies, reference (b) requested that (the shipyard) reopen negotiations with both bidders to obtain the lowest price for the work required and to correct the deficiencies noted. In addition, SUPSHIPS was requested to call this procurement to the attention of the General Manager, (Shipyard A) for corrective action in subsequent (shipyard) procurements as well as the procurement in question.

3. In reference (d), which was forwarded by reference (e), (the shipyard) requested NAVSHIPS approval to proceed with award of the main sea water fitting order as originally recommended and without reopening negotiations. (The shipyard) stated the reasonableness of the price was demonstrated by the adequate price competition obtained. (The shipyard) also stated that a comparison of the recommended price with past fitting prices or with (a shipyard independent engineering estimate would be of limited value in determining the reasonableness of the price.

4. NAVSHIPS withholds consent to placement of the proposed order as a competitive procurement for the following reasons:

- a. All bids were received at various intervals after the bid due date.
- b. (The shipyard) implies that the lowest bid received does not meet the shipyard's required dates. If so, there is only one responsive bidder.
- c. (The shipyard) has not submitted a complete cost or price analysis of the recommended price. Such analyses are required for both competitive or non-competitive procurements under the "Subcontracts" article of the Government's prime contract with

In order to resolve this matter as quickly as possible, (the shipyard) should be requested to reopen negotiations with both (supplier X) and (supplier Y) to see if responsive bids can be obtained from both firms with respect to delivery and to obtain the lowest price for the required work.

5. With respect to the correcting of similar deficiencies on subsequent (shipyard) procurements, reference (e) states that both SUPSHIPS and (the shipyard) are acting on the preliminary recommendation of the Contractor Procurement System Review Team. Reference (e) further states that the Contractor Procurement System Review Team has also pointed out the need for improvement in (the shipyard's) bidding procedures. Therefore, it is requested that SUPSHIPS corrective action on the deficiencies identified in reference (b) and in paragraph 4, above be coordinated with the results of the Contractor Procurement System Review effort.

(Name deleted),
Contracting Officer,
Naval Ship Systems Command.

Copy to 02B, 022D, 08H.

SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN

[Ser : 400-23C, 4 February 1970]

From : Supervisor of Shipbuilding, Conversion and Repair, USN (deleted).

To : (Shipyard A). Attn: (name deleted) General Manager.

Subj : Procurement of Main Sea Water Fittings for SSN (deleted) under Contract (deleted) NAVSHIPS disapproval of (deleted).

Encl :

- (1) Copy of NAVSHIPS ltr SHIPS 02B:JF:epm (contract No. deleted) Ser 1 of 29 Jan 1970.
- (2) Copy of selected ASPR paragraphs.

1. Enclosure (1), which was received in this office on 2 February 1970, is forwarded for appropriate action.

2. Your attention is invited particularly to the request contained in paragraph 4 of the basic letter.

3. The necessity for revised bid procedures and cost and price analyses were noted during the exit briefing by the Contractor Procurement System Review team. Enclosure (2) forwards paragraphs 2-401, 3-505, 3-506, 3-508.2, 3-508.3, 3-804, 3-805, 3-806, 3-807.1 and 3-807.2 for your information and guidance in developing revised procedures which should be utilized for subsequent procurements.

(Name deleted).

Copy to NAVSHIPS (PMS381) (02B) (022D) (076) (08).

[Ser : 400-31C, 12 February 1970]

FIRST ENDORSEMENT on (Shipyard A) ltr signed by (name deleted) dtd 10 Feb 1970

From : Supervisor of Shipbuilding, Conversion and Repair, USN, (deleted).

To : Commander, Naval Ship Systems Command (022).

Subj : Procurement of Main Sea Water System Fittings for SSN (deleted).

1. Forwarded for action by the Contracting Officer, NAVSHIPS Code 022, as a matter under his cognizance under the provisions of Clause 24, Modification P007, Contract (deleted).

(Name deleted).

FEB. 10, 1970.

Subject : Procurement of Main Sea Water System Fittings For SSN (deleted).

Reference :

- (a) (Contract No. deleted) SSN (deleted) (Shipyard A) letter to NAVSHIPS dated 25 November 1969, request to award purchase order E-701-350.
- (b) NAVSHIPS letter 08H-6402 dated 19 December 1969.
- (c) (Shipyard A) letter to SUPSHIPS dated 6 January 1970.
- (d) NAVSHIPS letter 02B:JF :epm Ser 1 of 29 January 1970.
- (e) SUPSHIPS letter Ser : 400-23C of 4 February 1970. --

SUPERVISOR OF SHIPBUILDING,
Conversion and Repair, USN,
(Deleted).

SIR: 1. Reference (a) requested NAVSHIPS consent to procure SSN (deleted) main sea water system fittings from (supplier x) at a price of (deleted). Reference (b) disapproved (Shipyard A's) request, setting forth certain reasons for the disapproval and requesting that (the shipyard) reopen negotiations with both bidders. In reference (c), (the shipyard) renewed its request, strongly recommending that award be made to (supplier x) and giving its reasons therefor. Reference (d), forwarded by reference (e), again refused consent.

2. Since NAVSHIPS continues to decline to consent to placement of the proposed order in accordance with (the shipyard's) recommendation, and since further delay in procurement of subject fittings will further jeopardize the delivery schedule for SSN (deleted) (the shipyard) has no alternative but to comply with NAVSHIPS instructions to reopen the procurement with both bidders.

3. In view of all the circumstances surrounding this procurement, (the shipyard's) proposed approach is to issue a new invitation to bid to the two interested bidders, (supplier x) and (supplier y). The invitation would require the submission of sealed bids on or before a specified date and would set forth the technical requirements, contract terms and mandatory delivery dates. The invitation would expressly provide that late bids would not be considered, that bids which were not fully responsive would be rejected, and that award would be made to the low responsive bidder at his bid price and without further negotiation. Before (the shipyard) proceeds in this manner, NAVSHIPS is requested to advise of its concurrence, for this specific procurement, in the use of the foregoing procedure, which we regard as essentially comparable to Government procurement by formal advertising.

4. As noted in reference (c), we are studying the recommendations resulting from the recently conducted Contractor Procurement System Survey and intend to take positive action, where indicated, to strengthen our procurement system and render it more cost-effective. However, we are not aware that either NAVSHIPS or DOD has adopted a new policy of requiring prime contractors to procure in accordance with the same rules and procedures which apply to direct Government procurement. Consequently, we consider the subject procurement to be an individual, isolated case and we view the NAVSHIPS action on this specific case in that light.

Very truly yours,

(Name deleted).

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEM COMMAND,
Washington, D.C. 20360.

[In reply refer to SHIPS 022C:JF :epm Ser 2, 18 Feb. 1970]

From : Commander, Naval Ship Systems Command

To : Supervisor of Shipbuilding, Conversion and Repair (deleted).

Subj : (Shipyard A) Procurement of Main Sea Water Fittings for SSN (deleted)

NAVSHIPS Comments Concerning

- Ref: (a) (Contract No. deleted) SSN (deleted) (Shipyard A) letter to NAVSHIPS dated 25 November 1969, request to award purchase order B-701-350
- (b) NAVSHIPS letter O8H-6402 dated 19 December 1969
- (c) (Shipyard A) letter to SUPSHIPS dated 6 January 1970, same subject
- (d) Supervisor of Shipbuilding, Conversion and Repair, USN, (deleted) letter dated 8 January 1970; Ser; 400-40
- (e) NAVSHIPS letter O2B:JF:cps dated 29 January 1970
- (f) (Shipyard A) letter to SUPSHIPS dated 10 February 1970, procurement of main sea water systems fittings for (deleted)
- (g) Supervisor of Shipbuilding, Conversion and Repair, USN, (deleted) letter dated 12 February 1970; Ser 400-320

1. Reference (a) requested NAVSHIPS consent to procure SSN (deleted) main sea water system fittings from (Supplier X) at a price of (deleted). Reference (b) disapproved the (Shipyard A) request noting bid procedures were not adequate to support a competitive award, negotiations were not conducted with all suppliers in a competitive range, and (the shipyard) did not perform a price analysis to establish the reasonableness of the recommended price. Reference (b) requested that (the shipyard) reopen negotiations with both bidders to obtain the lowest price for the work required and to correct the deficiencies noted.

2. In reference (c), which was forwarded by reference (d), (the shipyard) requested NAVSHIPS approval to award the main sea water fittings order as originally recommended and without reopening negotiations. Reference (e) again disapproved (the shipyard's) request. (The shipyard) was requested to reopen negotiations with both (supplier X) and (supplier Y) to see if responsive bids could be obtained from both firms with respect to delivery and to obtain the lowest price for the required work. Reference (e) pointed out that a complete cost or price analysis of the recommended price is required in accordance with the "subcontracts" article of the Government's prime contract (with the shipyard).

3. Reference (f), which was forwarded by reference (g) states that (the shipyard) intends to issue a new invitation to bid to (supplier X) and (supplier Y). The invitation would require sealed bids on or before a specified date and would define the technical requirements, contract terms, and mandatory delivery dates. Late bids would not be considered, all bids not fully responsive would be rejected, and award would be made to the low responsive bidder at the bid price without further negotiation.

4. NAVSHIPS has no objection to the proposed (shipyard) procedure for handling this procurement providing the solicitation reserves the right to negotiate if necessary. Further, as was pointed out by references (b) and (c), the subsequent (shipyard) recommendation on this procurement must include a complete cost or price analysis to establish the reasonableness of the proposed price. Accordingly, SUPSHIP should advise (the shipyard) that the approach recommended in reference (f) is approved subject to the comments above.

5. Reference (f) states (the shipyard) is "not aware that either NAVSHIPS or DOD has adopted a new policy of requiring prime contractors to procure in accordance with the same rules and procedures which apply to direct Government procurement." The action taken by NAVSHIPS on this proposed (deleted) procurement has been to ensure that it is handled in a business-like manner, that the lowest price has been obtained for the Government, and that the price obtained is reasonable.

6. Reference (f) indicates further delay in procurement of these main sea water system fittings will jeopardize the delivery schedule for SSN (deleted). In this regard, SUPSHIP should request (the shipyard) to expedite the proposed action to meet the SSN (deleted) need dates.

(Name deleted),
Contracting Officer,
Naval Ship Systems Command.

Copy to O2B, O22D, O8H.

[Enclosure (2)]

VADM RICKOVER'S COMMENTS ON NAVSHIPS REVIEW OF (SHIPYARD A)
COST CONTROL

1. *Problem & Recommendations, as Stated in VADM Rickover's Report Dated 23 September 1969:* Labor and material costs are being mischarged on Government contracts.

Specifically:

a. Under the present labor charging system supervisors have a strong incentive to charge labor costs to the labor budget account that can best absorb the cost and not necessarily to the budget account for the work actually performed.

b. A comprehensive review of (the shipyards) labor charging practices has not been conducted. However, there are indications that labor costs are being mischarged. There are no effective controls to preclude such mischarging.

c. (The shipyard's) material control system contains serious deficiencies such that the validity of material costs charged to Government contracts cannot be determined.

The Navy should withdraw approval of (the shipyard's) accounting system until effective controls are established to preclude mischarging of labor and material costs on Government contracts.

2. *COMNAVSHIPS Response & Proposed Action:*

COMNAVSHIPS states: "The Resident DCAA Auditor in his report . . . states that the accounting system was never approved; therefore, withdrawal is not appropriate. Also the Auditor reports the reviews that DCAA has conducted of the company's labor charging practices, system, and controls, and has concluded that:

"We disagree with the Code 08 conclusions that the contractor's system for the accounting and controls of labor costs is inadequate and that the Government's review of the contractor's labor charging practices has been inadequate."

" . . . While we (NAVSHIPS) agree with the Resident DCAA position quoted above, we do consider that, if the company's financial audit staff were to be augmented permanently to perform additional labor charging floor checks and material reviews, it could relieve DCAA of some of its surveillance function in this area to permit other utilization of Government auditors."

Proposed Action:

<i>Item</i>	<i>Target date</i>
a. Contractor to review direct labor budget workflow-----	Continuing Action.
b. Contractor to review physical progress estimating workflow.	Continuing Action.
c. Contractor to revise the cost account structure-----	Continuing Action.
d. Contractor to identify overhaul work by specification item.	Continuing Action.
e. Contractor to revise manhour level of direct labor budgeting.	Continuing Action.
f. Contractor to relate physical progress to cost-to-complete and the budgeting/cost control work authorization system.	Continuing Action.
g. Contractor to develop a top management report on vessel status.	Continuing Action.
h. Contractor to develop a user-oriented manual for direct labor budgeting and cost control.	Continuing Action.
i. Contractor to review requirements for data processing programs.	Continuing Action.
j. Contractor to increase internal review staffing for labor material checks and consider establishing a separate Internal Review organization.	Continuing Action.

3. *Comments on COMNAVSHIPS Response and Proposed Action:* It is not surprising that the auditor and NAVSHIPS have not found mischarging of costs. The issue is that neither the Navy nor the contractor has established adequate procedures to check on labor and material charges. Thus when my representative checked into this matter, he readily found the situation described in reference (a).

As long as the Navy depends on "continuing action" with the contractor to deal with these problems, they will not be identified or solved. If the Government auditor would make a careful review of this situation, he would find it to be as bad as or worse than stated in my report.

While I agree that (the shipyard) should have an effective internal audit staff, the NAVSHIPS suggestion that additional (shipyard) auditors can relieve this burden from the DCAA represents a fundamental misunderstanding of the relationship between the Government and (the shipyard). As I have reported time and again, (the shipyard) has practically no incentive to hold down costs on its Government contracts. Indeed, increased costs can be profitable for the company. Since this is true, it is naive to assume that we can rely on company auditors to hold down costs.

If the Resident Auditor does not have the time or manpower to make a comprehensive study of cost charging practices at (the shipyard), then the Navy should send a special team to study the situation—as was done at (shipyard B).

[Enclosure (3)]

VADM RICKOVER COMMENTS ON NAVSHIPS REVIEW OF (SHIPYARD A) PROGRESS PAYMENTS

1. *Problem and Recommendation as Stated in VADM Rickover's Report Dated 23 September 1969:* (Shipyard A) is receiving interest-free progress payments for material before the material has been used, and sometimes before the yard itself has paid for the material.

The Navy should revise progress payment procedures so that (the parent corporation) no longer gets interest-free use of Government funds.

2. *COMNAVSHIPS Response and Proposed Action:* *COMNAVSHIPS states:* "Enclosure (1) of reference (b), the report of the Resident Auditor, provides an explanation of material charging and material progress payment practices of (shipyard A). Such practices are acceptable to DCAA and to NAVSHIPS. On other than cost type contracts, progress payments are not based on costs incurred but on physical progress; they are limited to no more than 105% of costs. For such contracts, SUPSHIPS, with the assistance of DCAA, verifies monthly the material physical progress and quarterly, the certification that the progress payment requested does not exceed 105% of costs. The SUPSHIPS Quality Assurance Department, by a sampling technique, verifies the percent of labor physical progress claimed and makes its own progress calculations."

Proposed Action: No corrective actions are necessary.

3. *Comments on COMNAVSHIPS Response and Proposed Action:* I do not believe NAVSHIPS has adequately looked into the issue I raised. The implication in references (b) and (c) is that (shipyard) charges for material costs has no impact on shipbuilding contract payments.

The contractor certainly considers that advance charging of material costs has a significant effect on shipbuilding contracts. For example, (the shipyard) recently paid one of its employees an incentive award of \$1,231 for suggesting that certain miscellaneous inventories of stock be charged off to the Government before it is used so that a progress payment could be collected. He stated in his suggestion:

"Presently the Government cannot be billed until the material is actually used. By adopting an allocated type inventory for this material the Government can be billed when the material is paid for because it is bought for use on a specific contract. Then, in effect, the Government finances this inventory for (the shipyard). . . . [This suggestion] generates funds for (the shipyard)."

Thus in this case the Government will not only be paying higher progress payments, it will also have to pay 98% of the incentive award which led to the higher payments.

The impression one gets in reading the NAVSHIPS and DCAA comments is that the present method of charging costs for progress payments is acceptable because such actions are not prohibited by ASPR. In this regard, the Navy arranged through the ASPR committee some years ago to use a special progress payments clause for shipbuilding contracts. It appears that the shipbuilding clause as it is presently being administered is more liberal than is the standard ASPR progress payments clause used in other contracts, and results in an unwarranted subsidy to shipbuilders.

I believe the Navy is subject to severe criticism if it allows this situation to persist. Prompt action is needed to correct this situation.

[Enclosure (4)]

VADM RICKOVER'S COMMENTS ON NAVSHIPS REVIEW OF PRINCIPLES AND PROCEDURES AND SETTLING SHIPBUILDER CLAIMS

1. *Problem & Recommendations as Stated in VADM Rickover's Report dated 23 September 1969:*

a. Under the present system, there is no way to insure that the Government is not being overcharged in the adjudication of changes or in the settlement of claims.

- b. Present procedures for handling claims against the Government for changed work seem to be heavily weighted in favor of the contractor. The Navy should establish principles, procedures, and means to place the Government on equal footing with the contractor in settling change orders and claims.
- c. (The shipyard) normally does not account separately for the cost of changed work. Thus, settlement can only be made on the basis of judgment and rough estimates.
- d. (The shipyard) has a "claim team" of 75 full-time employees to identify and prepare any potential claim on work in the yard. This team prepares voluminous claims which the Government—lacking both time and manpower—cannot possibly refute *in toto*. Since the cost of this team is charged to each claim, the Government actually pays for most of this effort, even though it benefits the contractor, not the Navy.
2. *COMNAVSHIPS Response and Proposed Action*: COMNAVSHIPS states: ". . . reference (a) recommends the establishment of principles, procedures and means to place the Government on an equal footing with the Contractor in settling change orders and claims. NAVSHIPS concurs with this recommendation and considers that such principles, procedures and means do now exist as detailed in enclosure (4). . . ."
- Proposed Action*: NAVSHIPS to carry out its decision to assign counsel to certain SUPSHIPS offices.
3. *Comments on COMNAVSHIPS Response and Proposed Action*: The NAVSHIPS detailed response enumerates twelve actions NAVSHIPS has taken over the years to help the Government deal with contractors more effectively with regard to claims and changes. Many of these actions are procedural items, others involve improved contract clauses, revised organizations, and increases in civilian personnel staffing at SUPSHIPS since 1965. No doubt the Government is better off today because of these actions. However, I am discussing conditions I see today.

Because (the shipyard) normally does not account separately for the cost of changed work, there is no factual record from which either (the shipyard) or the Government can determine the actual cost of work that is the basis for the claim. Those charged with the responsibility for settling claims must rely mostly on "judgment" and independent estimates in arriving at a proper settlement. This is true even though the work is often accomplished long before the claim is settled.

Under these circumstances, the Government must depend primarily on the contractor's estimates and his representation of the circumstances in settling claims. To refute the contractor's claim, or to challenge with any authority his cost estimate requires considerable time and effort. Historically there is a large backlog of claims and unadjudicated changes. These outstanding claims are sometimes grouped together with an overall settlement reached. Consequently, the Government cannot tell on a job-by-job basis how much (the shipyard) really spends for the extra work claimed or what the Government paid for it.

On the average, change orders increase the price of a submarine by 15 percent or more. As long as shipbuilders can commingle the cost of these changes with other work, they can overcharge the Government and make it impossible to know whether or not the price is too high. Further, effective cost controls for either the changed work or the basic work are impossible under this arrangement. As pointed out in my memorandum dated 16 February 1970 (reference (d)), I believe this issue should be taken up with the Defense Contract Audit Agency and with the General Accounting Office to determine what rules should be established with regard to accounting for changes.

The basic issue I raised was that the Government was not on equal footing with the contractor in settling claims. The assignment of one lawyer in the SUPSHIPS office will not resolve this issue. The Government cannot possibly compete in this manner with the 75 full-time employees the contractor has to prepare and prosecute its claims.

I recommend that a special task group be formed to review how shipbuilders' claims are being prepared, prosecuted, and settled and what changes should be made to protect effectively the Government's interest.

[Enclosure (5)]

VADM RICKOVER'S COMMENTS ON NAVSHIPS REVIEW OF GOVERNMENT
SURVEILLANCE OF OPERATIONS AT (SHIPYARD A)

1. *Problem & Recommendations as Stated in VADM Rickover's Report on (Shipyard B) Dated 13 September 1969:* My report pointed out that the Navy must establish appropriate controls at (shipyard A) and at other shipyards. It stated:

a. "Although Government business accounts for 98 percent of the work at (the shipyard) Government auditors do not have access to certain (shipyard) financial reports that are essential in determining the reasonableness of charges to Government contracts.

b. "Government representatives do not review the company's "Make or Buy" decisions and there are indications that such decisions are not always made with the interests of the Government foremost.

c. "The Supervisor of Shipbuilding does not review (the shipyard's) procurements from divisions of (the parent corporation). The contractor does not justify the cost of these procurements or indicate whether or not these items are being obtained at less cost than would be possible from other companies.

d. "A number of former (shipyard) employees are working in the offices of the Supervisor of Shipbuilding and the Government Auditor. This situation is not conducive to proper business relationships between the Government and (the shipyard).

The Navy should issue policy instructions to preclude employment of former contractor personnel in positions where they are responsible for reviewing contractor operations in the activity where they were formerly employed.

2. *COMNAVSHIPS Response & Proposed Action:* The DCAA Auditor states: "Presently we do have access to all accounting and financial records which we consider necessary to the performance of our audit responsibilities."

COMNAVSHIPS states: "Consideration will be given to including a make-or-buy clause in the contract when the solicitation contains make-or-buy requirements. For contracts which have already been awarded to (the shipyard), NAVSHIPS will explore the feasibility of including a make-or-buy clause, providing that most of the high cost items have not already been procured."

* * *

"As to that portion of the recommendations of reference (a) which concerns the decision to assign work to other (divisions of the parent corporation), ASPR treats such intra-company matters as "make" items. Accordingly, when a make-or-buy program requirement is included in a solicitation, the contractor will have to provide information on "make" items and the contract will be negotiated on the basis of the acceptability of such a "make" item. After contract award, changes in the "make" decision will require approval by the Contracting Officer only if the contract contains the make-or-buy clause."

* * *

"Both the Resident DCAA and the SUPSHIP disagree with the implication that proper business relationships between the Government office and (the shipyard) have been impaired because of the employment of former (shipyard) employees. A parallel situation exists in NAVSHIPS Headquarters, which employs former contractor personnel in positions having engineering surveillance responsibilities over the activities where they were formerly employed, and we consider that proper objective relationships exist in these cases. It would appear that the employment of former contractor employees at the levels found in a SUPSHIP office actually works to the disadvantage of the contractor rather than the Government in that such personnel are usually well trained and are aware of the weaknesses of the contractor which require closer surveillance by the Government. NAVSHIPS knows of no law or Civil Service regulation which would authorize the issuance of a blanket prohibition against employing former contractor personnel in such circumstances."

3. *Comments on COMNAVSHIPS Response and Proposed Action:* On 31 December 1969, the DCAA Auditor wrote (Shipyard A) as follows:

"Subject to various verifications pending the resolution of the access to records problem regarding the "Quarterly Contract Analysis" and "Contract Profit Forecast Data" reports, we have concluded a review of (the shipyard's) financial management practices for compliance with ASPR Section VII, Part 2, limitation of cost and/or funds clauses under cost-reimbursement type contracts, and

management's practices affecting costs under cost-type and fixed-priced contracts. The review concluded that a system exists to generate timely data for financial management and the reporting of the financial status of individual contracts. *However, disclosures of significant cost overruns or underruns are not being made to the Contracting officer on a timely basis. Also, until we are provided access to the above mentioned reports, we cannot render an opinion on the adequacy of the system.*" (Emphasis Added.)

* * * * *

"Since we have been denied access to certain contractor reports, we cannot report on the accuracy of the estimates to complete. Due to the critical nature of Government funds and because of the deficiencies noted in our review, this office is particularly concerned with the projected cost to complete contracts by element of cost. This information is available only on the "Contract Profit Forecast Data" report. Access to this report and the "Quarterly Contract Analysis" report is considered essential for us to conclude that the contractor's financial management system is adequate and responsive to Government procuring agency needs."

I do not know whether the Auditor yet has the reports he requires. Obviously he did not have them at the time he wrote enclosure (1) to reference (b).

With regard to make-or-buy decisions, I consider that each significant order to be placed with other divisions of (the parent corporation) should be reviewed by the Government to ensure that the business arrangements are proper and that the lowest price to the Government is obtained for the work required. I do not think this will be the case under the procedures set forth in reference (c). Therefore I consider additional procedures should be established requiring the Supervisor of Shipbuilding review and approval of intra-company orders over \$25,000 on any contract in which the Government bears the risk of cost overruns or underruns.

I do not agree that it is right to employ former contractor personnel in surveillance of the contractor's operations. I am aware that NAVSHIPS employs former contractor personnel in positions having engineering surveillance responsibilities over the activities where they were formerly employed. There are also a number of cases where former contractor personnel are working in the NAVSHIPS contracts division and where former NAVSHIPS contracting people work for shipbuilders. However, I do not consider such practice to be in the best interests of the Government. It may be that SUPSHIPS has violated no law or regulation in hiring more than 100 former employees of the contractor; it still seems to me a violation of common sense to place these employees in a position where they are expected to critically review the performance of their friends and former colleagues. The Navy must put a stop to this practice, particularly when the position being filled is directly concerned with the negotiation or administration of contract matters.

INDEX

	Page
Admirals, British Navy shot one now and then.....	88
Alexandrian Library	83
Bismarck, comment on principle versus practice.....	97
Campus unrest:	
Agitation in colleges.....	65
Campuses are not sanctuaries.....	73
Life's calling is to work.....	75
Schools do not teach.....	74
Universities should concentrate on academics.....	76
Views of Admiral Rickover on campus unrest.....	66
"Chloroform in print".....	83
Claims against government.....	108
Competition in defense contracting:	
Very little exists.....	88-89
Lack of makes accurate costs imperative.....	86
Contracts awarded as if competitive.....	89
Contracts administered as if competitive.....	90
Computer manufacturers, refusal to comply with law.....	100
Conclusion	127
Congress:	
Nation's most complex profession.....	2
Need for legislative oversight.....	34, 81
Must take initiative on contracting issues.....	81, 88
Consent decrees and <i>nolo contendere</i> pleas.....	110
Contributions of systems analysts.....	53
Corporations:	
Growth of conglomerates.....	109
Have rights without obligations.....	109
Officials should be liable for illegal acts.....	110
Use of <i>nolo contendere</i> pleas	110
Defense Department:	
Contract study groups.....	8
Delay in U.S. high-speed submarine.....	8
Delays cost money.....	23
Defense Department has more checkers than doers.....	18
Industry not responsible for successful defense product.....	21
Legislative oversight	34
Naval Material Command.....	24
Priority of submarine program.....	31
Program management	33
Reduction in headquarters personnel.....	26
Reduction of administrative personnel.....	24
Technical experts reduced in status.....	22
Unnecessary delays	22
Defense procurement officials:	
Civilians, not military, set contract policies.....	82
Exist in state of sleepy unawareness.....	83
Should be impeached once in a while.....	88
Lethargy of, leads to waste.....	98
Rely too much on "management systems".....	99
Efficiency:	
British Navy shot admirals for.....	88
Accounting standards could increase.....	111
Faust, gentle voice from heaven to.....	97

Forging suppliers :	
Generally refuse to comply with law-----	102
Case histories on four firms-----	102
Glacial slowness, bureaucracy moves with-----	96
Independent research and development-----	112
Industry influence on defense policies :	
Government-industry personnel interchange-----	103
Industry Advisory Council has great influence-----	104
Industry Advisory Council meetings not public-----	104
Lipscomb, Hon. Glenard P-----	58
Middle-clas Americans :	
Bear greatest burden of taxes-----	109
Supply most troops-----	109
Moslem, declares library either superfluous or harmful-----	83
Napolean, dictum of proves to be true-----	83
National defense needs :	
Abolitionists' budget cuts cause loss of <i>Merrimac</i> -----	3
Desire for peace-----	3
Peace requires commitment by parties-----	4
Naval nuclear propulsion program-----	10
Navy Department administration :	
Loss of U.S. leadership in submarines-----	15
Navy emphasis on carriers-----	14
Need for Deputy Chief of Naval Operations for submarines-----	14
Navy postgraduate education-----	79-80
Navy's technical capabilities :	
Administrative difficulties-----	17
Defense Department has more checkers than doers-----	18
Delays cost money-----	23
Industry not responsible for successful defense product-----	21
Modern technology requires higher standards-----	19
Reductions of technical proficiency-----	20
Technical experts reduced in status-----	22
Unnecessary delay-----	22
U.S. Navy has no design capabilities-----	16
Normative thinking, new ways of-----	112
Nuclear Carriers :	
Advantages of nuclear propulsion-----	39
Bare base kit-----	38
Carrier force levels after World War II-----	52
Contributions of the systems analysts-----	53
Effect of deferring funds for CVAN70-----	44
Free use of seas necessary-----	47
Joint Chiefs of Staff position on CVAN70-----	40
Lessons from history-----	46
Lessons from World War II-----	39
Loss of overseas land air bases-----	38
Naval treaty allowed U.S. 18 battleships plus carriers-----	51
Nuclear surface ships-----	54
Nuclear aircraft carriers-----	36
Overseas land air bases-----	36
Russians are more self-sufficient than United States-----	47
The Russians don't have attack carriers-----	46
The strategic situation-----	38
Washington Naval Conference of 1921-----	49
Weapons system vulnerability-----	48
Why CVAN70 funds are needed in fiscal year 1971-----	43
Why we need carriers-----	
Nuclear frigates :	
Hon. Glenard P. Lipscomb-----	58
Nuclear escorts-----	58
Nuclear frigate building rate-----	56
Nuclear surface ships-----	54
Nuclear surface ships-----	36-80

Nuclear submarine program :	
Delay in U.S. high-speed submarines.....	8
Loss of U.S. leadership in submarines.....	15
Need for Deputy Chief of Naval Operations for submarines.....	14
Nuclear powered ships.....	5
Priority of submarine program.....	31
Progress on SSN 688 class.....	120
Quiet submarine program.....	34
U.S. submarine program.....	12
“On s'engage et puis on voit”.....	83
Opening remarks.....	1
Overseas land air bases :	
Bare base kit.....	38
Loss of overseas land air bases.....	38
The strategic situation.....	38
Platitudinous tangled deviations.....	83
Pope, Alexander.....	96
Prohibition, law violated as widely as truth-in-negotiations.....	98
Recommendations to improve defense contracting.....	84
Renegotiation Act :	
Recommendations to strengthen.....	85
Once had teeth, but now weak.....	88, 105
Problems in present system.....	105-106
Fraught with special interest exemptions.....	106
Sacred cows of defense procurement.....	98
Security.....	62-65
Measures to stop release through advertising.....	63
Publication of technical information.....	62
Security at shipyards.....	64
Service academies.....	77-79
Inadequate technical education at Naval Academy.....	77
Poor performance by Naval Academy graduates.....	79
Shipbuilding companies :	
Contracts provide no incentive for efficiency.....	91
Have no effective cost controls.....	91
Government surveillance of not adequate.....	90
Double standard for procurement.....	91
Reports point out serious problems.....	92 app.
Large firm overcharges Navy.....	95-96
Do not implement Public Law 87-653.....	101
Shipyards.....	114-121
In-house technical capability.....	115
Reduction in shore establishment.....	121
Shipyards certification for nuclear propulsion work.....	116
Shipyards costs.....	117
Submarine construction program.....	114
Progress on SSN 688 Class.....	119
Shipyards performance.....	118
Sleepy unawareness, defense officials exist in.....	83
Soviet submarine threat.....	7-12, 36
Delay in U.S. high-speed submarines.....	8
Loss of U.S. numerical lead in nuclear submarines.....	10
New Soviet submarine designs.....	8
Soviets poses global mobility.....	11
Soviet submarine have high-speed capability.....	12
Soviet submarine threat.....	7
Submarine-launched ballistic missiles.....	36
United States and Soviet submarine forces compared.....	9
Speech to Navy League in Charleston, W. Va.....	122
Steel companies, not required to comply with law.....	100-101
Stephen, Sir James, Famous 1831 comment by.....	87
Talmud, paraphrase of.....	114

Truth-in-Negotiations Act:	
Defense officials don't enforce.....	82, 98, 103
Recommendations to improve.....	84
Entire industries refuse to comply with.....	82, 98
Requirements waived for computer firms.....	99
Methods of circumventing.....	100
Uniform cost accounting standards:	
Contractors have great flexibility without.....	86
Feasible and necessary, GAO reports.....	87
Pentagon reverses position on.....	87
Impact on efficiency of contractors.....	111
Accountants reverse position on.....	87
Lobbyists attempt to weaken.....	87
Vulnerability of Polaris submarines.....	61
Washington, George, comments on war profiteers.....	88
Washington Naval Conference of 1921.....	49
Carrier force levels after World War II.....	52
Contributions of the systems analysts.....	53
Naval treaty allowed U.S. 18 battleships plus carriers.....	51
Weapons systems vulnerability.....	48
Wilson, Woodrow, comment on corporations.....	110
Youth, feels that double standard exists.....	110

