

# MILITARY CONSTRUCTION APPROPRIATIONS FOR 1974

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No. 6

## HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

FIRST SESSION

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PART 3

NAVY

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Printed for the use of the Committee on Appropriations



U.S. GOVERNMENT PRINTING OFFICE

21-007 O

WASHINGTON : 1973

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# MILITARY CONSTRUCTION APPROPRIATIONS FOR 1974

WEDNESDAY, JUNE 6, 1973.

## MILITARY CONSTRUCTION, NAVY

### PRINCIPAL WITNESSES

HON. FRANK SANDERS, UNDER SECRETARY OF THE NAVY  
REAR ADM. A. R. MARSCHALL, CEC, USN, COMMANDER, NAV-  
FACENCOM  
BRIG. GEN. M. T. JANNELL, USMC, ASSISTANT QUARTERMASTER  
GENERAL (FACILITIES AND SERVICES), U.S. MARINE CORPS  
JACK BOWERS, ASSISTANT SECRETARY OF THE NAVY FOR IN-  
STALLATIONS AND LOGISTICS (DESIGNATE)

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DEPARTMENT OF DEFENSE—MILITARY  
MILITARY CONSTRUCTION, NAVY—FISCAL YEAR 1974  
PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	Budget plan (amounts for construction actions programed)			Obligations		
	1972 actual	1973 estimated	1974 estimated	1972 actual	1973 estimated	1974 estimated
<b>Program by activities:</b>						
Direct:						
1. Major construction.....	293,885	445,830	627,600	391,817	480,600	548,200
2. Minor construction.....	12,500	14,600	15,000	11,793	17,500	15,060
3. Planning.....	34,534	54,900	53,800	35,159	54,900	53,800
4. Supporting activities.....	1,050	3,600	1,000	762	1,000	1,000
<b>Total direct.....</b>	<b>341,969</b>	<b>518,330</b>	<b>697,400</b>	<b>439,531</b>	<b>554,000</b>	<b>618,000</b>
Reimbursable (total).....	113,797	100,000	100,000	101,384	100,000	100,000
<b>Total.....</b>	<b>455,766</b>	<b>618,330</b>	<b>797,400</b>	<b>540,915</b>	<b>654,000</b>	<b>718,000</b>
<b>Financing:</b>						
Receipts and reimbursements from:						
Federal funds.....	-92,838	-80,000	-80,000	-92,757	-80,000	-80,000
Non-Federal sources.....	-20,959	-20,000	-20,000	-20,959	-20,000	-20,000
Unobligated balance available, start of year for completion of prior year budget plans.....				-387,457	-328,827	-292,657
Reprogramming from (-) or to prior year budget plans.....	26,600	-500	-12,000			
Unobligated balance transferred from other accounts.....	-13,069			-13,069		
Unobligated balance available, end of year.....				328,827	292,657	360,057
<b>Budget authority (appropriation).....</b>	<b>355,500</b>	<b>517,830</b>	<b>685,400</b>	<b>355,500</b>	<b>517,830</b>	<b>685,400</b>
<b>Relation of obligations to outlays:</b>						
Obligations incurred, net.....				427,199	554,000	618,000
Obligated balance, start of year.....				169,520	258,871	504,871
Obligated balance, end of year.....				-258,871	-504,871	-745,871
<b>Outlays.....</b>				<b>337,848</b>	<b>308,000</b>	<b>377,000</b>

DEPARTMENT OF DEFENSE—MILITARY  
MILITARY CONSTRUCTION, NAVY  
OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

	1972 actual	1973 estimated	1974 estimated
<b>DEPARTMENT OF THE NAVY</b>			
<b>Personnel compensation:</b>			
Permanent positions .....	\$35,740	\$35,513	\$39,575
Positions other than permanent .....	869	176	-----
Other personnel compensation .....	1,012	1,445	1,562
<b>Total personnel compensation .....</b>	<b>37,621</b>	<b>37,134</b>	<b>41,137</b>
<b>Direct obligations:</b>			
Personnel compensation .....	31,846	30,650	35,017
Personnel benefits .....	3,437	2,638	3,019
Benefits for former personnel .....	6	-----	-----
Travel and transportation of persons .....	2,239	1,934	1,854
Transportation of things .....	4,012	3,450	4,816
Rent, communications, and utilities .....	1,061	394	512
Printing and reproduction .....	1,000	355	460
Other services .....	17,516	22,088	18,613
Supplies and materials .....	14,279	12,114	15,704
Equipment .....	56,487	47,943	62,148
Lands and structures .....	306,889	430,059	474,857
<b>Total direct obligations .....</b>	<b>438,772</b>	<b>551,625</b>	<b>617,000</b>
<b>Reimbursable obligations:</b>			
Personnel compensation .....	5,775	6,484	6,120
Personnel benefits, civilian .....	624	557	528
Travel and transportation of persons .....	273	185	434
Transportation of things .....	6,298	4,653	5,996
Rent, communications, and utilities .....	233	139	188
Printing and reproduction .....	192	188	190
Other services .....	4,888	3,563	4,370
Supplies and materials .....	3,148	2,292	2,290
Equipment .....	3,047	2,226	2,844
Lands and structures .....	76,906	79,713	77,040
<b>Total reimbursable obligations .....</b>	<b>101,384</b>	<b>100,000</b>	<b>100,000</b>
<b>Total obligations, Department of the Navy .....</b>	<b>540,156</b>	<b>651,625</b>	<b>717,000</b>
<b>Allocation to Department of Transportation:</b>			
Permanent positions .....	66	66	66
Other personnel compensation .....	1	1	1
<b>Total personnel compensation .....</b>	<b>67</b>	<b>67</b>	<b>67</b>
Personnel benefits, civilian .....	5	5	5
Other services .....	33	98	45
Lands and structures .....	654	2,205	883
<b>Total allocation obligations to Department of Transportation .....</b>	<b>759</b>	<b>2,375</b>	<b>1,000</b>
<b>Total obligations .....</b>	<b>540,915</b>	<b>654,000</b>	<b>718,000</b>
<b>PERSONNEL SUMMARY</b>			
<b>DEPARTMENT OF THE NAVY</b>			
Total number of permanent positions .....	2,743	2,989	2,887
Full-time equivalent of other positions .....	97	39	-----
Average paid employment .....	3,229	2,953	2,767
Average GS grade .....	9.4	9.3	9.3
Average GS salary .....	\$13,495	\$13,360	\$13,360
Average salary of ungraded positions .....	\$13,829	-----	-----

Mr. SIKES. The committee will come to order.

#### OPENING STATEMENT OF THE CHAIRMAN

Secretary Sanders, the committee extends to you a very warm welcome. We are pleased that you could be here to discuss with us the trends in the Navy, which will affect military construction and base utilization.

Of course, it is always a pleasure to have Frank Sanders appear before a committee of Congress and in particular to appear before this committee, because Mr. Sanders and I have many memories of the years when we both sat on this side of the table working with Harry Sheppard and with others in developing military programs.

We are always conscious of your superb knowledge of the military construction programs and requirements, and of defense generally. We were fortunate when we had you with us here.

We feel that our Nation has been fortunate in your service here and in the Pentagon.

Mr. PATTEN. If the chairman would yield.

Mr. SIKES. I will be glad to yield.

Mr. PATTEN. I would like to join with the statement of the Chair. I did have the pleasure of working with Frank in this room, and I have had the pleasure of observing him these last few years since he has been in the top spots in the Navy, which is always dear to our hearts.

Frank, I told you that Lew Compton, who was Acting Secretary of the Navy when Pearl Harbor happened, pushed the button and put everybody to work. If you have his picture up there, you will see his collar frayed and his cuffs. Lew died of ulcers. The job killed him. I don't think that is going to happen to you.

It has been a pleasure to be able to say we know you well, Frank, and to wish you the best of luck.

Mr. SANDERS. Thank you, sir.

Mr. DAVIS. Mr. Chairman.

Mr. SIKES. Mr. Davis.

Mr. DAVIS. Frank sitting over on that side of the table is just the opposite of where he sat 20 years ago this year when he was sitting where Bob Nicholas is sitting now. Those were the days when Korea was hard upon us, and the people in the construction facilities field in all branches of the services didn't know whether they were supposed to prepare for World War III or what they were supposed to do.

Those were some hectic days, and Frank lived through that with us, and I suspect he has had a few hectic days since then on both sides of this table. The only thing that spoils his appearance before us this morning is the knowledge that he is probably doing so for the last time.

He has been an outstanding, devoted public servant in two branches of the Government and is one in whom I know every one with whom he has ever served has had a great deal of confidence and continues to have a great deal of respect, and I guess the only happy part of it is that Frank has earned a rest, and Frank, I hope you will take a good one and you will just plain loaf until you get sick of it.

Mr. SANDERS. Thank you very much.

Mr. SIKES. Thank you, Mr. Davis.

Former Secretary of Defense Laird knew exactly what he was doing when he tapped Frank Sanders to go from Capitol Hill to the Pentagon to help in the work of the Department of the Navy.

Mr. Secretary, you have with you a group of able witnesses. We want to recognize Admiral Marschall who has recently taken over the responsibility of Commander, Naval Facilities Engineering Command. We welcome you, Admiral Marschall.

We have worked with you for a long time. We know of your great abilities and your work. You follow a long line of very dedicated and able men in this post. We look forward to working with you.

General Jannell is here representing a very important component of the naval forces, the Marine Corps, and, of course, we also have had the pleasure of working with you in the past, General, and we appreciate the very competent contributions that you have made.

We trust that the Marines are going to insist on getting their part of the military construction budgets from the Navy. Do you have any trouble with that, General?

General JANNELL. No, sir.

Mr. SANDERS. I assure you, sir, they insist.

Mr. SIKES. Secretary Sanders, you have maintained your close ties to this committee while undertaking a series of difficult responsibilities in the Navy. The excellence with which you have carried out these jobs is familiar to all of us. We hope, if you leave your position of Under Secretary, and we hope that you won't, but if you do do that you will continue to keep close contact with all of us. We wish you God speed in your future endeavors. It has been suggested that you take a long rest. We know you better than that.

Are you ready to proceed?

Mr. SANDERS. Yes, sir, Mr. Chairman.

Mr. Chairman, may I just say thank you for the kind remarks by you, Congressman Patten and Congressman Davis. If I have had any success in the Navy and up here it has been due to the training which I received from many, beginning with Congressman Davis as a subcommittee chairman including yourself and Mr. Sheppard, and Mr. Mahon.

I'm humbled by your statements and deeply appreciative of them.

I would like to point out that Admiral Marschall is appearing before you for the first time as Chief of the Naval Facilities Engineering Command, an event that I have looked forward to for some 12 or 15 years. I think he is a very worthy successor to the men who have gone before him and I am sure that he will not only lead the Naval Facilities Engineering Command and the Civil Engineer Corps to new heights, but also that the continuing coordination, contact, and rapport with this committee will probably increase even more than it has in the past.

General Jannell, of course, with the Marines has already proven himself to you all through working here for a year. He, too, is well aware of the importance of this committee to us. I don't know of any committee that scrutinizes the military construction program more thoroughly than this committee, nor any one which is more fair. We are most appreciative of the interest you have shown in our problems

and the manifest actions you have taken. We hope we can live up to the trust you have placed in us.

Sir, I have a statement which I can read or summarize or lay aside, whichever you would like.

Mr. SIKES. I leave that entirely in your discretion.

Mr. SANDERS. Thank you.

#### STATEMENT OF THE UNDER SECRETARY OF THE NAVY

Mr. Chairman and gentlemen of the committee, I am particularly pleased to have an opportunity to appear before you and present my views on our military construction facilities posture and some brief comments on this year's military construction budget.

#### FISCAL YEAR 1974 APPROPRIATIONS

First, I would like to put this year's military construction budget in perspective by comparison with prior year budgets. The new obligational authority requested for military construction for the department of the Navy in fiscal year 1974 is \$697.4 million. This represents an increase of \$143.2 million over the fiscal year 1973 budget request. The Marine Corps portion is \$54.8 million or approximately 8 percent of this year's program.

#### SHORE ESTABLISHMENT REALINEMENT

To accommodate the planned shore establishment realignment, the program includes 25 projects totaling \$45,499,000. Current planning indicates the realignment will result in the cancellation of 20 prior-year projects totaling \$33,788,000, which have not yet been placed under contract. At installations effected by the realignment, there are seven projects under contract with appropriations totaling \$13,606,000. A review of these projects is underway to determine whether the most economical course of action is to complete the construction or terminate the contract. After my comments on general topics, I would like to go into more detail on the criteria and rationale employed in making decisions on which installations were to be closed, operations reduced or relocated.

#### PROGRAM COMPOSITION

The military construction program is developed to augment and supplement the remainder of the Navy budget. An examination of the program will show that the shore facilities requested are essential to fleet readiness.

The Secretary of the Navy has stated that "people are vital to readiness." This year's program reflects the Navy's interest in people by allocating one quarter of the program to those facilities that will materially contribute to maintaining an all-volunteer force.

Projects that are directly associated operationally or logistically with the Navy's strategic and general purpose forces constitute about 33 percent of the program. Some examples follow of projects associated with the mission of these forces.

Under our mission of strategic deterrence, we are requesting appropriations to initiate construction of logistic support facilities for the

Trident weapon system support complex at Bangor, Wash. and missile flight test facilities at the Air Force Eastern Test Range, Cape Kennedy. A briefing is scheduled later for this project that will provide complete details on the requirement for this project and the need to obtain this year's facilities construction authorization and appropriations.

For the purpose of my discussion today I would like to divide our general purpose forces into three basic categories, which are: forward deployed forces, rapid reaction (power projection) forces, and sea control forces.

#### FORWARD DEPLOYED FORCES

The forward deployed force centers around the carrier task group composed of the multimission carrier CV, with its mixed air group of fighter attack and ASW aircraft. The carrier task force includes escorts at well as the Navy-Marine Amphibious Force which will be centered in the future around the amphibious assault ship (LHA).

The high-speed nuclear attack submarine provides support for forward deployed forces in the attack, surveillance, and early warning roles and similar support for our sea control forces. The projects associated with this weapon system are included under sea control forces. This year's program contains \$29 million for projects that will provide direct operational or logistic support for our forward deployed forces.

The projects outside the United States supporting the 6th Fleet in the Mediterranean are projects at Souda Bay, Crete, Sigonella, Sicily, and Rota, Spain. At our vital eastern Mediterranean base in Souda Bay, Crete, the aircraft parking apron is needed for P-3C ASW patrol aircraft, carrier-on-board delivery aircraft, logistic support aircraft, and transient carrier-based aircraft. The other significant project at Souda Bay is an air passenger cargo terminal to meet the increased logistic support requirements imposed on this base. At Sigonella, this year's program includes six projects for supporting facilities needed to complement the operational facilities provided over the past 2 years.

Inside the United States, a berthing pier is requested for the Naval Station, Norfolk, Va., that will be used primarily for berthing the larger fleet replenishment ships (fleet oilers and repair ships) servicing the 6th Fleet. At the Naval Air Station, Oceana, aircraft systems training buildings are requested for maintenance and flight training on the F-14 fighter aircraft. This aircraft will provide the air defense umbrella over the carriers of the 6th Fleet.

Outside the United States for the Pacific Fleet, we are requesting a wharf utilities project and a collimation town project at the Naval Station, Guam. At the naval magazine Guam, a rocket maintenance and assembly facility is requested to provide an environmentally controlled and safe working area for periodic maintenance, inspection, and assembly of destroyer-launched antisubmarine rockets. All of the projects in Guam are needed for effectively homeporting ships of the 7th Fleet.

For support of the Pacific Fleet, inside the United States, avionics facilities are requested for the naval air stations, North Island and Lemoore. The avionics facility at North Island is for work on the E-2A and E-2C carrier-based early warning aircraft, and the S-2 and

the new S-3A carrier-based ASW aircraft. At Lemoore, the avionics facility will service the A-4 and A-7 attack aircraft.

The remaining project for forward deployed forces is the pier utilities project at the naval station, San Diego, where ships are replenished and prepared for deployment to the 7th Fleet.

#### RAPID REACTION FORCES

Rapid reaction forces, include nuclear carrier (CVN) and nuclear guided missile frigate escorts, which are U.S.-based forces. The project this year that will provide support to the powerful striking force is a pier utilities project at the naval air station, Alameda, which is the homeport for the nuclear carrier, *Enterprise*.

#### SEA CONTROL FORCES

Projects associated with the final category of general purpose forces, our sea control forces, are those identified with Navy fleet units engaged in searching out and destroying enemy forces that would impede Navy ships in carrying out assigned logistical or tactical missions. Sea control forces include shore based ASW (P-3 patrol aircraft) squadrons, and will include in the future the sea control ship with its embarked helicopters and VSTOL aircraft, and the patrol frigate with an organic multipurpose helicopter capability. Although I have directed some remarks to the future composition of sea control forces the facilities associated with sea control forces are needed this year for the personnel and ships currently performing this role.

For the Atlantic fleet, outside the United States, this year's request includes four projects for support of antisubmarine warfare squadrons at the naval air stations, Bermuda and Keflavik and the naval station, Rota. An air/underwater weapons compound facility at naval air station, Bermuda will provide facilities for handling the ordnance utilized by the P-3 ASW aircraft. Bachelor housing facilities are requested at the naval air station, Keflavik where under terms of our country-to-country agreement, bachelors are not allowed to live off-base. At the naval station, Rota, Spain, we have a small dollar project for a tactical support center, but an important project for providing an operational link to P-3C aircraft conducting antisubmarine warfare operations for the sea control forces.

For the Atlantic fleet, inside the United States, there are also five projects identified with sea control forces. At the naval air station, Brunswick, Maine, an operational training building is requested for relocating a directional Jezebel Sonobouy system trainer from the naval air station, Patuxent River, Md. The Sonobouy system trainer is required for training flight crew personnel of P-3C antisubmarine warfare aircraft. At the naval communications station, Cheltenham, Md., modifications are proposed to the very low frequency antenna that will be used for communicating with strategic forces ballistic missile submarines and the nuclear attack submarines of the Atlantic fleet sea control forces. Other projects supporting nuclear attack submarines are the pier utilities project at the naval station, Norfolk, and the MK48 torpedo overhaul shop at the naval weapons station, Yorktown, Va. The remaining project for a communication facility at the naval

station, Charleston, will provide support to the commander, mine warfare force.

There are eight projects identified with the sea control forces of the Pacific Fleet. Outside the United States, a mine assembly facility at the naval magazine Guam is requested to provide a safe working environment for making periodic inspections, maintenance and assembly of a significant portion of the mine inventory of the Pacific area. At the Naval Air Station, Cubi Point, a project for a tactical support center will provide an operational link to the P-3 antisubmarine warfare aircraft squadrons.

Inside the United States there are five projects in support of the Pacific Fleet. Three projects will support P-3 antisubmarine warfare aircraft squadrons and two projects will provide facilities to support nuclear attack submarines. The facilities that will support antisubmarine warfare aircraft operations are taxiway overlay and an avionics shop at the Naval Air Station, Moffett Field, Calif., and a runway/taxiway at the Naval Station, Adak, Alaska. The facilities that will support the nuclear attack submarines are pier utilities at naval submarine support facility, San Diego and the modifications to the very low frequency antenna at the Naval Communications Station, Honolulu, Hawaii.

In summary this year's program requests \$29 million for forward deployed forces, \$4 million for rapid reaction forces, and \$29 million for sea control forces.

The point I wish to stress is that our military construction program is not prepared in isolation of the overall needs of the Navy. The program incorporates facilities that form vital links in logistic support of weapons systems utilized by the Navy's strategic and general purpose forces in carrying out worldwide missions. The remainder of the program is associated with facilities such as training, modernization of shipyards and naval air rework facilities, research, development test and evaluation, pollution abatement and utilities. I want to stress that these facilities are also essential for effective support of strategic and general purpose forces.

#### PEOPLE-ORIENTED PROGRAM

In the past, we have provided information on the Navy's efforts to improve the quality of Navy life, and thereby increase the first term and career reenlistment rates. The reality of an All-Volunteer Military Force increases the need to improve service life for career candidates. Last year we reported that the first-term reenlistment rate for the Atlantic Fleet Force was 2.8 percent in fiscal year 1970 and that the overall Navy first-term reenlistment rate was 10 percent. I am happy to report the first-term reenlistment rate for fiscal year 1972 for the Atlantic Fleet was 18 percent and the overall first-term reenlistment rate was 23.2 percent. This improvement is encouraging, but as you can see, additional efforts will be required if we are to bring first-term reenlistments up to the target rate for fiscal year 1974 or 31 percent. Reenlistment of career personnel was 91 percent through March 31, 1973, which is right on the target rate for fiscal year 1974.

The projects that will enhance service life are those in the bachelor housing and community support area, medical facilities, and shore-side utility systems, which enable the shutting down in port of a ship's boilers and generators and other machinery. Admiral Marshall, in his statement, will discuss projects associated with an All-Volunteer Force.

#### ACCELERATED MEDICAL MILITARY CONSTRUCTION PROGRAM

Prior to this year's program, medical facilities construction was developed under the guidance of requesting one hospital per year and with dispensaries and dental clinics competing for funding against other operational and logistic support requirements. A recognition by the Secretary of Defense of a need to accelerate the rate of correcting medical deficiencies has led to the development of a medical construction plan of some \$685 million. This plan, approved by the Secretary of Defense, will be initiated with the fiscal year 1974 military construction program. The accelerated health facility modernization and construction program will make possible the replacement or upgrading of all Navy hospitals and clinics to comparable civilian standards by the mid-1980's.

#### POLLUTION ABATEMENT

This year we are requesting \$92 million for water and air pollution abatement facilities at Navy and Marine Corps installations.

For water pollution abatement facilities, \$64.7 million is requested for shore facilities for collection of ship-generated wastes, oil pollution control, water treatment waste control, municipal sewer connections, sewage distribution systems, industrial waste treatment, a demilitarization facility and sewage treatment plant improvements.

Air pollution abatement facilities total \$27.6 million and include facilities for control of emissions from sand or abrasive blasting and painting operations, fuel conversions, and a variety of installations for abatement of smoke, asbestos, particulates, and chemical fumes.

With \$198 million devoted from fiscal year 1968 through fiscal year 1973 for military construction pollution abatement facilities, we have achieved substantial compliance with directives concerning the environment.

Nevertheless, our pollution abatement efforts must continue. We must now focus on: (1) facilities that have been deferred pending development of the necessary technology, or deferred pending availability of regional systems to connect to; (2) additional facilities for shoreside disposal of sanitary wastes from ships; (3) application of forthcoming noise standards to naval facilities; and (4) facilities needed to meet increasingly stringent local, State, and Federal pollution abatement standards. These new standards are being developed, in large measure, as a response to recent congressional actions such as the Federal Water Pollution Control Act Amendments of 1972, the Clean Air Act Amendments of 1970, and the Noise Control Act of 1972. Each of these acts contains a specific requirement that Federal agencies comply with Federal, State, interstate, and local standards.

## MARINE CORPS PROGRAM

The Marine Corps portion of this program continues to reflect their concentrated effort to provide modern living quarters for marines. Forty-six percent, or \$25.4 million of the Marine Corps' request of \$54.8 million will provide bachelor housing and messing facilities for enlisted marines.

## FAMILY HOUSING PROGRAM

Next, I would like to comment briefly on family housing. As in past years, this program has been given careful attention because of its importance to the well-being and morale of Navy and Marine Corps personnel with dependents. These men constitute over 62 percent of our career servicemen.

The Navy strongly supports and recommends approval of the increases in space and cost limitations requested by the Secretary of Defense for the construction of new family quarters. With the current and rising costs of new construction, these increases are necessary if we are going to provide service families with Government quarters comparable to community housing standards.

In order to provide housing at locations where significant deficits still exist, the funds allotted for new housing construction in the fiscal year 1974 program under consideration have been augmented by \$20 million from the regular Navy budget authority. This action was also taken for the fiscal years 1972 and 1973 programs.

The funds requested under title V for Navy and Marine Corps housing are reasonable and justified for the purposes stated. They will provide for a balanced annual program to maximize military use of housing in the private economy; provide new construction where private investors are unable or do not elect to meet military needs; and to support the operations and maintenance of our existing family quarters at modest standards.

The large housing deficits that have been a serious problem for so long are being significantly reduced by completion of our construction programs, and by the improved ability of servicemen to obtain private housing due to the recent increases in compensation. Reduction of the family housing maintenance backlog, which accumulated largely during the Vietnam period, started in fiscal year 1972. We expect further reductions of 5 percent and 8 percent in fiscal years 1973 and 1974, respectively. If present trends continue, we can begin to direct our attention and resources increasingly in follow-on years to correcting the obsolescence and deficiencies which exist in our older quarters. Economic analysis may dictate replacement construction for some of the quarters.

This committee has been especially mindful of the importance of providing adequate housing for our servicemen and their families. We sincerely appreciate this interest and concern, and earnestly solicit your continuing support of this vital program.

## SUMMARY AND SUPPORTING TABLES

In summation, I would like to emphasize that the projects in this year's military construction budget are all required for the maintenance of a high state of readiness of Naval and Marine Corps forces.

I am most appreciative once more of the opportunity to appear before this committee and provide these personal observations on our military construction program.

[The attachments follow:]

*Fiscal year 1974 military construction projects—modern general purpose forces*

[In thousands of dollars]

Forward deployed forces, nonnuclear war:

6th Fleet:

	<i>Amount</i>
Outside United States:	
ND, Souda Bay, Crete, Greece, 4 projects.....	\$4, 153
NAF Sigonella, Sicily, Italy, 6 projects.....	3, 086
Total .....	<u>7, 239</u>

Inside United States:

NS Norfolk, berthing pier.....	9, 624
NAS Oceana, aircraft systems training buildings (F-14)....	3, 386
Total .....	<u>13, 010</u>
Total, 6th Fleet.....	<u>20, 249</u>

7th Fleet:

Outside United States:

NS, Guam—Collimation Tower.....	167
Wharf utilities.....	2, 782
NM Guam, rocket maintenance and assembly facility.....	241
Total .....	<u>3, 190</u>

Inside United States:

NAS North Island, avionics facility (E-1, E-2, S-2, S-3A) ..	1, 640
NS, San Diego, pier utilities.....	1, 996
NAS Lemoore—integrated avionics shop (A-4, A-7).....	1, 933
Total .....	<u>5, 569</u>

        Total, 7th Fleet..... 8, 759

        Total, forward deployed forces..... 29, 008

Rapid reaction forces, rapidly deployed power projection—U.S. based:

NAS Alameda, pier utilities.....	3, 827
Total, rapid reaction forces.....	<u>3, 827</u>

*Fiscal year 1974 military construction projects—modern general purpose forces—*  
Continued

[In thousands of dollars]

Sea control forces, national security, links w/allies, ocean heartland:

Atlantic Fleet:

	<i>Amount</i>
Outside United States:	
NAS Bermuda, air/underwater weapons compound.....	\$1, 725
NAS Keflavik, Iceland:	
BEQ.....	2, 834
BOQ.....	3, 258
NS Rota, Spain, tactical support center.....	85
Total.....	<u>7, 902</u>

Inside United States:

NAS Brunswick, operational trainer building.....	135
NCS Cheltenham, VLF antenna modifications.....	1, 300
NS Norfolk, Pier utilities.....	2, 057
NWS Yorktown, torpedo overhaul shop.....	1, 327
NS Charleston, communication facility.....	1, 321
Total.....	<u>6, 140</u>

Total Atlantic Fleet.....	<u>14, 042</u>
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Pacific Fleet:

Outside United States:

NM Guam, mine assembly facility.....	3, 229
AS Cubi, tactical support center.....	161
Total.....	<u>3, 390</u>

Inside United States:

NSSF San Diego, pier utilities.....	1, 253
NAS Moffett Field:	
Taxiway overlay.....	2, 115
Avionics shop.....	1, 600
NS Adak, runway taxiway overlay.....	4, 158
NCS Honolulu, Wahiawa: VLF antenna modification--	850
Total.....	<u>11, 846</u>

Total, Pacific Fleet.....	<u>15, 236</u>
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Total, sea control forces.....	<u>29, 278</u>
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Grand total, general purpose forces.....	<u>62, 113</u>
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Percent of program.....	8. 9
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Mr. SIKES. Thank you, Mr. Secretary, and let me assure you again that your observations are welcome. Your statement is a very useful and very comprehensive one. I have a few questions that I will ask you and then we will hear from Admiral Marschall.

#### NAVY'S MISSIONS

Is the division of naval forces into forward deployed, rapid reaction, and sea control forces something that is new, or is it somewhat of a modification of what we have been doing?

Mr. SANDERS. Mr. Chairman, this is a little bit of editorializing to try to present the Navy's basic missions and to divide our budget into an emphasis on these forces.

Of course, there is nothing new in this. The missions of the Navy's general purpose forces still center around our classic concepts of sea-power. We have attempted or are attempting to isolate our rapid reaction, our power projection forces. These are of course built around the nuclear task force and do not require the extensive logistics train of a conventional carrier task force.

Our forward deployed forces are forces which have always been used for naval presence, and of course our sea control forces, which will be a composite really of our forward deployed forces and rapid reaction forces, are there to protect the sea lines of communication, which is our third basic mission.

Mr. SIKES. How do you allocate forces among these three primary missions?

Mr. SANDERS. Mr. Chairman, we do not really attempt to allocate forces among these three primary missions. We examine each mission or the multiple missions that we have, or are called on to execute, and try to strike a balance—to hit the very best ones that we can.

#### OVERSEAS COMMITMENTS AND FORCES

Mr. SIKES. There appears to be a contradiction between the desire so frequently expressed in the United States to reduce overseas commitments and forces, and the Navy's apparent increase in forward deployed forces.

Will you discuss this?

Mr. SANDERS. Our overseas commitments and support of national policies have remained relatively constant with the exception, of course, of our surge in Southeast Asia, and I would like to make very clear that forward deployed forces have always been there in the Navy.

#### OVERSEAS HOMEPORTING

For example, in 1964 we had 49 ships homeported overseas. In 1965 we had 56. Currently we have 48. Now, forward deployed forces really consist of those homeported and those that are rotationally deployed. What we are trying to do with the so-called forward deployed forces we are talking about now is part of our effort to increase personnel enlistments and retention.

We found that one of the principal reasons people were not reenlisting has been the long family separation. We found that our overseas commitments are the things that drive the location of Navy ships

and Navy forces. We found that the tempo of operation as the Navy has become smaller—and I think you will see this when we discuss the realignment package this afternoon, dropping from something like 917 ships in 1964 to 523 this year without appreciable change in commitments—that the tempo of operation is putting a strain not only on the personnel but on the ships and hurting our maintenance program. So we are trying to increase our homeporting overseas in an effort to keep the family closer to the sailor and the officer and to provide more deployment time for the ship and cut out the lengthy transit time.

We are trying to do this by placing very limited reliance on shore support facilities; that is, living off the local economy without building additional bases.

In most cases ships are being homeported in areas where facilities are already in existence. What we are trying to do is to continue to maintain our commitments, not increase force levels, or numbers of military personnel overseas, since the homeported units are really going to replace similar units now rotationally deployed.

The only real new element is the introduction of additional American families in homeported areas. We could provide for the record, sir, or I could discuss now some of the first-term reenlistment rates that we are getting from homeported units and also some of the homeport time that these ships are getting.

Our reenlistment rate, for example, in Athens on the destroyer squadron is 9 percent higher than it is for the rest of the destroyers in the Atlantic. Destroyers in Yokosuka have twice the retention rate of the other destroyers in the Pacific area.

Mr. SIKES. Have you evaluated the economies of homeporting versus the system in use prior to homeporting, evaluated the gains in retention rates, the savings in the training costs, et cetera?

Mr. SANDERS. We haven't enough data yet to work it out in a finite fashion. Our preliminary judgment on this, and this is the reason we went this route, was that it would show an increase in retention.

This has been borne out so far. We have been able to hold our costs down. The proof of the pudding is going to be when we deploy the first aircraft carrier over there with its squadrons and see exactly what happens.

We are doing this, as you know, in Yokosuka, Japan, where we do have facilities available left over from prior work.

Mr. SIKES. Are there any cost comparisons on homeporting as against other alternatives.

Mr. SANDERS. We estimate, sir, that we have now about a \$4 million one-time cost and something like an annual cost increase of about \$15 million. These are for the Athens, Naples, La Maddalena, Yokosuka and Sasebo initiatives.

Mr. SIKES. Those are additional costs?

Mr. SANDERS. Yes, sir, something of that magnitude.

Mr. SIKES. What you are doing, in effect, is trying to give to the Navy, through homeporting, something of the privilege which has been enjoyed for years by other services. They have been able to take their dependents with them to overseas bases.

Mr. SANDERS. This is true, sir.

Mr. SIKES. It is as simple as that, isn't it?

Mr. SANDERS. Yes, sir, that is all it is, nothing more, without providing on-shore facilities of a domiciliary type for anyone. This I want to stress very carefully.

Mr. SIKES. It is a change from the system employed by the other services?

Mr. SANDERS. Yes, sir, we have no facilities ashore for barracks or anything of that type for enlisted personnel. We will have in certain areas clubs, recreation facilities, things of this type.

There are some facilities at Yokosuka in Japan which are left over from prior work there which may become available for the men in-port on a ship, to go off to, just as for the rotationally deployed ships, but this is catch-as-catch-can.

At Athens, for example, there is absolutely nothing.

Mr. SIKES. The homeporting is relatively small in comparison with the total Navy overseas operation, is it not?

Mr. SANDERS. Yes, sir.

Mr. SIKES. How many naval personnel are involved?

Mr. SANDERS. I would have to supply that for the record, sir. I don't think I have the actual number.

Mr. SIKES. Please supply it for the record.

[The information follows:]

There are presently 13,727 naval personnel homeported overseas.

Mr. SIKES. In how many areas are you homeporting and in how many areas do you plan subsequently a homeporting program?

Mr. SANDERS. As of the moment we are homeporting or have homeporting approved in Athens, Greece; Naples, and Gaeta, Italy; LaMaddalena, Sardinia; Rota, Spain; Holy Loch, Scotland; Bahrain, Persian Gulf; Guam; and Yokosuka and Sasebo, which are in Japan.

We are presently exploring a couple of additional homeporting areas, particularly in the Pacific area, but no approval has been forthcoming, and since foreign governments are involved I would rather not put that in the record.

Mr. LONG. What were the others besides Athens and Naples?

Mr. SANDERS. Naples, Gaeta, Athens, Rota, Holy Loch, Bahrain, Guam, Yokosuka, Sasebo, and LaMaddalena.

Mr. LONG. Where is that?

Mr. SANDERS. LaMaddalena is in Sardinia. Running through, the different locations we have six destroyers at Athens and are talking in terms of a carrier as well. We have one destroyer tender, four PGM's and a PG support ship at Naples. At Gaeta, there is one cruiser. We have one submarine tender each at LaMaddalena, Rota, Holy Loch, and Guam. Bahrain has one amphibious transport dock. We have one cruiser and six destroyers at Yokosuka and two service force ships at Sasebo. Sasebo is in the southern part of Japan.

There are adequate facilities at Sasebo, Yokosuka and at Naples for this homeporting. LaMaddalena and Athens require the leasing of some facilities, particularly family housing in LaMaddalena.

Mr. TALCOTT. Mr. Chairman.

Mr. SIKES. Yes, sir.

## OVERSEAS BASES AND BASE CLOSURES

Mr. TALCOTT. May I ask—perhaps you will want to elaborate for the record—why it is better to do this than to close the foreign bases instead of the ones at home?

Because of the base closure announcement many people, chambers of commerce, and Senators have suggested that it is wrong to close home bases when there are so many foreign bases. They say the foreign bases ought to be closed first.

Mr. SANDERS. In a nutshell, we are not putting any more ships overseas than we have deployed overseas now. The carrier is going to be deployed in WESTPAC.

Mr. TALCOTT. We are closing many large installations in the United States; for instance, Hunters Point, in San Francisco.

Mr. SANDERS. Yes; we would close Hunters Point regardless of homeporting.

Mr. TALCOTT. Let us go off the record.

[Discussion off the record.]

Mr. TALCOTT. Some Senators are saying you should close foreign bases first and you would save a lot of money.

Mr. SANDERS. In the Navy we have closed numerous overseas bases, particularly Sangley Point, which is in the Philippines, some time ago. We have one base left in the Philippines for fleet support at Subic Bay. We have concentrated everything there.

There is a communications station with which you are familiar just north of Subic Bay. In Okinawa we have cut back on our forces, particularly with the reversion. The only thing we have now are the Marines there with one small Naval support facility for ships coming and going through that area. We have concentrated on Guam, as we always have, with no real buildup.

We have continued to operate in Yokosuka as we have in the past. Sasebo is just a small base which has been there for some time. We have cut back on it drastically. In Japan we have given up one air base completely and part of another one, sir.

Moving to the Mediterranean, which is our other basic large fleet concentration, we have always had the base at Naples. We have cut back on the number of people there and I can supply that for the record if you would like.

[The information follows:]

Our support organization at Naples now has 35 percent less personnel than it had in 1968.

Mr. SANDERS. The committee is well aware of the support facilities we have built in a very minor fashion at Sigonella in Sicily and Souda Bay, which is on the Island of Crete, in an effort to protect our forward area operations in the Mediterranean when we have to move in those areas.

The homeporting we will do at Athens, the homeporting we will do at La Maddalena, will be with only a modicum of expenditure of leased funds to provide necessary support facilities for the families.

There is nothing being done by way of constructing facilities for the overhaul and repair of the ships or things of this type.

Mr. TALCOTT. The argument is that at San Francisco you are firing or "riffing" many thousands of workers who are good, solid Americans, and that we should perhaps close Subic Bay first because we are employing Filipinos over there to do the work. I think I am putting it as strongly as they are putting it.

Mr. SANDERS. The U.S. Navy at the moment, with the missions it has to go forward with in the Western Pacific, the commitments which we have to protect, couldn't possibly exist without a forward deployed base such as Subic. We have proven this on many, many occasions not only in the recent Vietnam conflict, but during the peacetime operations, both before and after Vietnam.

We have no desire to put a large amount of military construction funds and a large amount of our resources in overseas bases.

We are holding them to the very minimum. This is one reason why we are pursuing the homeporting policy as we are.

Mr. SIKES. Mr. Secretary, coming down to basics, isn't the requirement for overseas facilities a part of our worldwide commitments which haven't basically changed, other than the direct involvement in Indochina? We have the same general worldwide commitments we have had heretofore and to carry out those commitments we have to maintain forces overseas?

#### HOMEPORTING OVERSEAS

Mr. SANDERS. This is quite true, sir; and we are attempting merely to take some of these forces that we have to maintain overseas and utilize them in a proper fashion so that we can improve their first term reenlistment rate and so that we can improve the reenlistment rate throughout the Navy. This is where the money is, I would like to confirm this figure, but, I think, it costs something like \$24,000 or \$25,000 to train a highly qualified Navy technician.

If we can protect that \$25,000 by having a man with his experience reenlist, you and I are way ahead of the game as American taxpayers who support the Defense Establishment. The results so far have shown that we are increasing this retention rate because of forward deployment.

As a matter of fact, one of the very interesting things is that on our initial deployments we have tried to send only volunteers and in a number of instances we have had 100 percent volunteers in both officer and enlisted personnel.

As a matter of fact, the lowest number of volunteers we had has been 82 percent at one homeport.

Mr. SIKES. Mr. Secretary, basically you are trying to provide for a limited number of Navy dependents the same privilege of being overseas with their member who is in uniform that the Army and the Air Force have enjoyed for a long time.

In the other services it has been customary to provide the facilities that they need overseas. Other than for strict reasons of economy and gold flow, what is the rationale behind the fact that you do not provide facilities for Navy personnel? The number who would benefit from homeporting is comparatively limited compared to the other two services.

Mr. SANDERS. Mr. Chairman, the Navy is a very flexible instrument of our foreign policy and of our national security forces. We cannot be tied down by foreign bases, so that we must operate only in certain specific locations.

We also have a dollar constraint problem to live with. We feel that there are adequate facilities existing in the locations where we are going to provide most of the facilities which our military family requires.

In many instances, and thanks in large part to the help of this committee, we are leasing other facilities, but we can walk away from these very easily and return them to the local economy without any difficulty at all, without having hanging over our heads the large overhead cost of running a shore establishment.

There is a side issue to this, sir, to be quite frank with you. We have noticed a payoff in many areas already. These people are living with the local people. They are getting to know the local economy, the local people. They are communicating. They are translating the American way of life to other countries and at the same time absorbing local culture and mores. They are benefiting by their contacts with many of these local people and as a result our communications are being strengthened.

Mr. SIKES. There are, of course, advantages in that, but would it not be logical to provide at least certain basic facilities such as clubs, even commissaries?

Mr. SANDERS. Yes, sir. We are providing certain support facilities for both enlisted men and officers, primarily recreation, commissaries where it is necessary, and medical—

Mr. TALCOTT. Schools?

Mr. SANDERS. Schools are provided by the Defense Department. I don't think we are building any schools, at all, Mr. Talcott. Arrangements are being made for schools without very much cost, sir.

Mr. SIKES. Are you providing commissaries?

Mr. SANDERS. Yes, sir, in certain areas. In certain areas we are not. In Naples we already have facilities of that type. Commissaries will be supplemented in the Athens area. We will have to work out something with reference to the one ship at La Maddalena. There it will be the very minimum.

They will all be in leased facilities that we can walk away from.

Mr. SIKES. Off the record.

[Discussion off the record.]

Mr. SIKES. What impact will overseas homeporting have on the U.S. international balance of payments?

Mr. SANDERS. Mr. Chairman, we estimate that the effect on the international balance of payments it will be roughly about \$28 million, which is approximately one-half of 1 percent of our total IBOP.

#### OVERSEAS COMMITMENTS

Mr. SIKES. Is an effort being made to reduce naval commitments overseas to conform with reduction in the size of the fleet?

Mr. SANDERS. Yes, sir. The best evidence of this is that since 1968 we have reduced our NATO commitment by some 60 active ships.

By the end of this calendar year we anticipate an additional reduction of some 36 ships. This is something that is watched very carefully by the Navy and we are in constant discussion with the Secretary of Defense and the Joint Chiefs of Staff on this particular matter.

Mr. SIKES. Percentagewise are we basing more of the ships that are commissioned in the United States or overseas with the reduced fleet?

Mr. SANDERS. Mr. Chairman, I don't think I can quite answer that question.

Mr. SIKES. Provide the answer for the record.

[The information follows:]

Present plans for the numerically reduced fleet will ultimately result in 42 ships being homeported overseas, which is 8 percent of the present fleet of 532 ships. By comparison, in 1965 there were 56 ships homeported overseas, 6 percent of a fleet of over 900 ships.

Mr. SIKES. By basing some of our naval forces overseas, are we increasing their vulnerability? Are we opening ourselves to increased commitments to protect foreign bases or to support the countries in which they are located?

Mr. SANDERS. No, sir; in no way at all. As I pointed out, by basing naval forces—that is, homeporting forces—overseas, we are merely homeporting ships that are going to be there, anyway, overseas, and keeping a few others from coming out on a long transit voyage.

With the exception of Spain, in every country in which ships are forward deployed, we have separate and unrelated mutual security arrangements, thus the commitments exist regardless of whether we have homeports there.

In Greece and Italy, NATO commitments apply. In Japan, the mutual security agreement defines the U.S. obligation. No mutual security agreement exists with Spain for the sub tender homeport at Rota and it is a matter of record, very clearly, that the utilization of Rota in no way implies a mutual defense commitment with Spain.

We see no way in which we are increasing the vulnerability of our forces by stationing them overseas. If anything, I think we are helping.

#### DEPLOYMENT OF NEW WEAPONS SYSTEMS

Mr. SIKES. The Navy is introducing modern weapons systems such as Trident submarines, nuclear carrier task forces, sea control ships, and small fast patrol craft such as hydrofoils and air-cushion vehicles. The Trident with its longer range missiles and nuclear carriers and their escorts, which have higher speed and less reliance on logistics, lend themselves to being based in the United States, but have a need for rather extensive facilities to support them. Has it been determined whether sea control ships, surface effects ships, and the new weapons will be based in the United States or overseas, or what special support requirements they may have?

Mr. SANDERS. At the present time, sir, we have no plans, don't envision homeporting sea control ships or some of the others you have referred to such as the hydrofoils or the surface effect ships overseas.

Needless to say, this is going to remain under continuing study. It will depend largely, particularly in the case of surface effects ships and hydrofoils, which are well out into the future, on what reaction we have from the homeporting effort we are making now.

At the present time, we are programming the support for the sea control ships and for the small, fast patrol craft from existing U.S. shore facilities. We probably will have to have some specialized facilities down the line. They are not included in the program yet. I don't mind telling you frankly that with the NATO nations also procuring the PHM or the hydrofoil, that there could be some cooperative type arrangement worked out for this small craft in certain locations.

#### FACILITIES SUPPORT FROM ALLIES

Mr. SIKES. To what extent do we and can we in the future rely upon our allies to provide us the facilities which we require to support Navy forces overseas?

Mr. SANDERS. Of course, we have not really relied on our allies to any appreciable extent to provide facilities for us, except for those called for under our treaties and mutual security arrangements. The leasing we are doing is basically with the approval and sometimes through the local government directly or indirectly with local businessmen, just as you would do in this country.

Our reliance on our allies depends on formal defense treaties such as NATO; or in the case of Spain, on the complete lack of formal defense agreement for homeporting the sub tender at Rota.

We really don't have to rely that much on them, sir.

Mr. NICHOLAS. Is there a possibility, for instance, within the NATO infrastructure plan of getting more facilities from our allies than we are at the present time, or do we need more facilities?

Mr. SANDERS. Under our NATO infrastructure program, we are trying to obtain more infrastructure funds from NATO than we have received in the past.

We are making a very valiant effort in this area. As this committee is well aware, it takes a great deal of time to work through the NATO bureaucracy. We are making some progress, but these are facilities and dollars generated by NATO, not by any specific country apart from NATO.

#### COSTS AND SAVINGS FROM FORWARD DEPLOYMENT

Mr. SIKES. Of course, there are additional costs associated with forward deployed forces. Is there any appreciable change in the relative cost? Is it down in this fiscal year, or about level, or is it higher?

Mr. SANDERS. In this fiscal year, sir, our cost for forward deployed forces should be slightly higher than it was last year because we now will have had the destroyer squadron in Athens a full year.

Further, the AS has deployed to *La Maddalena*—that is a submarine tender—on a homeported basis. If I could repeat, for the *Athens*, *Naples*, *La Maddalena*, *Yokosuka*, and *Sasebo* homeported ships, we are talking about a one-time cost of about \$4 million, an annual cost increase of about \$15 million.

Mr. NICHOLAS. Mr. Secretary, in general, looking at the question of the forward deployed forces, it obviously takes more ships to support a given commitment in a particular area if those ships are based in the United States.

Is there any rough figure you can use? Would it take a third more ships in order to support our Pacific commitments, if everything were based in Hawaii and Conus. Are there rough figures on how much larger the Navy would have to be if it were to be a totally U.S.-based Navy and still had to maintain its basic commitments?

Mr. SANDERS. Captain Nicholson is our resident expert on that.

Captain NICHOLSON. As an example, since carrier task groups are the key element in peacetime presence, I will use carriers in explaining backup requirements. The Navy is currently planning on maintaining a minimum peacetime ship deployment rotation of 1 in 3, that is, 6 months deployed with 12 months between deployments. A force level of \_\_\_\_\_ carriers is necessary to support the requirement for one carrier constantly deployed in the Mediterranean on a 1 in 3 rotation. \_\_\_\_\_ carriers are necessary to keep one carrier deployed in the Western Pacific on a 1 in 3 rotation, the difference being the longer transit time in the Pacific. However, if one carrier homeports overseas—Atlantic or Pacific—only \_\_\_\_\_ carriers are required to sustain this level. These figures do not take into account the requirement for ready carriers to meet emergency contingency requirements, and so forth, and should therefore not be utilized to develop force levels.

Mr. NICHOLAS. Does this mean there would have to be more ships in the Navy in order to support a given deployment if they were all U.S. based and conversely if you put a ship in overseas homeport such as Athens you can reduce the number of ships in the Navy?

Captain NICHOLSON. Yes, sir.

That is why we are forward deploying, because with a reduction of forces with no reduction of requirements we must do it with less ships.

Mr. NICHOLAS. Can you provide more details and examples of the type of increases in ships or decreases in ships you mean?

Captain NICHOLSON. Yes, sir. I would like to do that for the record, if I may.

[The information follows:]

[Deleted.] Therefore, it is essential that we homeport at least one carrier task group in the Mediterranean and one in the Pacific in order to meet our commitments.

Mr. TALCOTT. Is it anything more than the waste of time going back and forth?

Captain NICHOLSON. We save quite a bit of money in transit costs.

As the Secretary stated, if we retain our qualified personnel we save money in training costs. If we can retain those qualified people we don't have to train new people. Those are our big savings.

#### NEW BASES OVERSEAS

Mr. SIKES. Mr. Secretary, there has been discussion of a requirement for the development of additional forward bases, particularly in the Pacific.

Do I take it there is nothing in the fiscal 1974 program looking toward the development of new bases in areas such as the Marianas.

Mr. SANDERS. There is nothing in the fiscal 1974 program in this respect at all unless we have some forward deployment that we may be called upon to do later, sir.

## ECONOMICS OF VOLUNTEER FORCE

Mr. SIKES. Dr. Long.

Mr. LONG. We are putting great emphasis on a volunteer force, and we hear an awful lot about how much more it is costing us. It seems to cost an enormous sum of money, at least in certain areas.

I got the impression here from you that we were saving some money but I gather that this is only saving in a certain area; that the net cost of a volunteer force is much greater than a conscripted force.

Mr. SANDERS. Dr. Long, I would personally disagree with you there as far as the Department of the Navy is concerned which is the only area in which I have any expertise.

Mr. LONG. When you take all into consideration?

Mr. SANDERS. Yes, sir. I think if we could develop in the Navy an All-Volunteer Force with the proper percentages of retention, especially skill retention, in the long run we are going to be so far ahead—

Mr. LONG. In the long run.

Mr. SANDERS. Costwise, professionalwise, and every way I can think of.

Mr. LONG. That leads to the next question.

Is this really a matter of cost, because it would seem to me even if you could get the job done more cheaply by having a rapid turnover, it still wouldn't be satisfactory because you want an efficient operation; and you can only get an efficient operation by having trained people over the long term. Right?

Mr. SANDERS. Yes, sir.

Mr. LONG. I think that is where we made a lot of mistakes in Vietnam from what people tell me—that we turned people over too fast.

Mr. SANDERS. Let me say this very clearly.

Obviously we would have a more efficient force. I personally feel we will have a less costly force.

Mr. LONG. So that we can get both advantages?

Mr. SANDERS. Yes, sir.

Mr. LONG. It is not a matter of greater cost for more efficiency, but possibly even less cost.

Mr. SANDERS. For example, this is a very simple pen. It has four colors in it. Someone gave it to me. It cost \$1. It took me about 3 weeks to figure out how to replace one of these cartridges when the first one ran dry. Now I can do it in a few seconds and I have pretty darn good utilization.

This is about the third or fourth set of pens that have been in that one holder. The first one I had is all broken up from my trying to learn how to replace the thing. If you magnify this simple example by the complex radar equipment, the sophisticated electronics, the weapons systems that we have on board, the poor condition of maintenance in our fleet left over from the increased tempo of operations we had in Vietnam, then your savings are just going to magnify like a snowball rolling downhill.

It is very difficult to quantify it. But as that experienced man comes into the Navy, knows what to do with a piece of sophisticated equipment, and he puts the right gadget or gadget in there instead of the wrong one, and it operates better, then the dollar savings are going to be astronomical.

Mr. LONG. Which do you feel is the more important, lower cost or greater efficiency?

Mr. SANDERS. Both, sir. They go hand in hand.

Mr. LONG. To me it would be greater efficiency.

Mr. SANDERS. Yes; I would be willing to pay a cost for greater efficiency but the point I am making is I don't think we are going to have to pay that cost.

Mr. LONG. But in the short run we will.

Mr. SANDERS. Yes, sir.

Mr. LONG. Is there any time when you feel these savings will begin to show up in decreased costs, rather than increased costs as they seem to be doing right now?

Mr. SANDERS. Yes, sir. I can relate one specific example. We have been able in the last 6 months to begin to stabilize the tours of duty and to stabilize the people out on the carriers in the Pacific Fleet. The other day I was talking with a commander of Naval Air Forces in the Pacific.

He can already see his maintenance cost begin to come down as maintenance gets better on ships, as he inspects them, as these boys settle down, as they spend a longer time on the job, as they begin to know what they are doing.

Mr. LONG. I saw a television review on the volunteer concept, and I thought they tried to do a balanced job, but the whole theme of the examination of our volunteer force was that volunteers are good, average people; but you don't get a lot of bright people the way you might under conscription. Consequently, we are getting kind of a mediocre Armed Force as far as personnel are concerned.

They didn't mention this business of greater efficiency, because it seems to me even a mediocre man is going to be a more effective if he knows his work, and spends a number of years at it than some bright guy out of a university who has to learn it too quickly and some other bright guy comes along a little later and has to learn it after he has left.

I wonder if you would comment on that.

Mr. SANDERS. Yes, sir, I would be happy to. Actually, we have heard this criticism leveled at the all-volunteer effort. We have heard a great deal of this criticism leveled at us. Our actual experience shows that if anything the level of intelligence and the type of young man we are getting is higher, and I can speak for the Navy and for the Marine Corps here. It is higher today than we were getting under the draft, much higher.

Now that represents—and with your background as an educator you can appreciate it—that represents one of the greatest challenges to Navy-Marine Corps management that we have seen. One, we have to train better, both in our actual basic training in our specialty training. Two, we have to train better in the fleet when a man gets out there on the job. Three, we have to learn to manage our manpower better. This is probably the greatest challenge that we face in the Navy today.

In the Defense Department in 1964, roughly 42 percent of our dollars went for manpower. Today 56 percent goes into manpower and related items. We have to learn to manage that manpower better.

We are spending a great deal of time on just this simple fact. That is the challenge for us.

There is no question but what the American youngster coming out of school today is highly educated, a better educated person than he has ever been before. That young man or woman, motivated to be in the military service and properly trained, is going to give us the best fighting man this country has ever seen.

It is going to be a challenge to supplement the improved education he is getting at the high school level today, even junior high school, provides a background much more advanced than we got when we went to school.

Mr. LONG. You know, the armed services made a complete 180 degree turn on this. When I first came to Congress, 10 years ago, I was on the Armed Services Committee, and at that time it would have been rank heresy to suggest a volunteer force. We were snowed under by arguments, statistics, on the opposite side.

I am just wondering what has caused the complete 180-degree turn. Most people think it is because the disaffection among the young people has been so great that the military have finally decided well, gee, the heck with all these agitators, unwilling people, all that; they have now decided to try to get a volunteer force. But having done that, now they are looking at things differently.

I am a little worried when the people suddenly give me exactly the opposite arguments from what they used to give on the same question.

Mr. SANDERS. No, sir. We are talking about an All-Volunteer Force in an era where there are no major conflicts.

Mr. LONG. I think that was 10 years ago, that was roughly true.

Mr. SANDERS. No, sir. We were just coming out of Korea, we had just had the unrest in Southeast Asia, the unrest in Russia.

Mr. LONG. I do not think we had as much unrest in Southeast Asia in those 10 years as we do at this moment. We had some volunteers over there, but we did not have any people bombing and fighting.

Mr. TALCOTT. It looked ominous. More young men started going to college.

Mr. LONG. Looking back now, it did not look ominous.

Mr. TALCOTT. The kids knew the answer.

Mr. SIKES. Mr. Secretary, please provide a brief answer.

Mr. SANDERS. There is another factor, briefly. Due to the sophistication of our weapons systems, we are able to maintain a smaller force now. We have the smallest Navy since Korea, but it is as good a Navy as, or better than, we have ever had because of its modernity.

Mr. TALCOTT. One thing about personnel management, the Navy has a policy—I am not exactly sure how it originated—that some of the young officers who are getting graduate degrees, increasing their career advancement, cannot go to certain universities, such as Stanford, Dartmouth, Yale, Harvard, Columbia, Tufts, some universities that are considered quite excellent, simply because they abandoned ROTC.

That seems to me to be a very short-sighted personnel practice, something that is cutting off your nose to spite your face.

Mr. SANDERS. Might I point out, Mr. Congressman, that this is a policy dictated by the Congress of the United States.

Mr. SIKES. Mr. Davis, you have questions at this point?

Mr. DAVIS. Yes.

## TRANSFER OF BUDGET BOGEY TO FAMILY HOUSING

There is one thing that I wish you would clear up for me, Mr. Secretary. It is something on which I do not have any background. That is on page 14 of your statement where you mention the augmentation of your family housing program with \$20 million from the regular Navy budget authority. That was also in 1973. I am not familiar with that.

Would you update me on that?

Mr. SANDERS. Yes, sir. The family housing program is funded under a Department of Defense appropriation. It is managed by them. The Office of the Secretary of Defense allocates funds to the Navy for family housing as part of the overall family housing program. This is in addition to the allocation of millions of dollars to operate the regular programs of the Navy other than family housing.

Regarding the \$20 million. For 3 years, I believe the Secretary of the Navy has taken money out of his regular appropriations, in the amount of \$20 million, and supplemented the allocation made for family housing by the Secretary of Defense.

Do I make myself clear?

Mr. DAVIS. Tell me how that is done.

Mr. SANDERS. This is done within the Department of Defense budget. In our program planning budget cycle, we receive certain guidelines each year.

Those guidelines provide for a amount of money to operate the Navy, construction, everything else—ships, some \$25 billion this year.

There is another account managed at the Secretary of Defense level for, among other things, family housing. The Secretary of Defense allocates from this family housing account so much for each one of the military services. The Navy has said for the last 3 years that we would like to supplement that allocation for family housing by \$20 million out of the larger Navy appropriations. And the Secretary of Defense has permitted us to do that.

Mr. DAVIS. But what was that money originally appropriated for?

Mr. SANDERS. This was in the planning cycle before the appropriation was made. The only thing that you have seen appropriationwise has been the \$20 million. This was done during the preparation of the budget.

Right now, for example, we are preparing the program and the budget for fiscal year 1975. We have been told how much money we will have for family housing out of the Secretary of Defense account. We are debating now whether once more to ask the Secretary of Defense to take \$20 million from the other Navy programs which we control ourselves, and place it in the fiscal year 1975 family housing program. This is done before the program reaches the Congress, sir.

Mr. DAVIS. Who sees that \$20 million?

Mr. SANDERS. You see it as you review it here, as you review our programs here. The Secretary of Defense sees it and the Office of Management and Budget sees it as they review our program before it comes up to you.

Mr. DAVIS. Are the other branches of the services doing this?

Mr. SANDERS. I do not know if any of the other services have done it. We saw family housing deficits in the Navy, which were rather star-

ting when we started this in fiscal year 1970-71. We looked very hard at why we were not retaining the people. Our retention rates were down, absurdly low, as I pointed out a moment ago.

When we examined why they were low, and why people were not staying in the service, lack of adequate family housing was right up on top of the list. So Secretary Chafee made the decision that retention was so important to his personnel objectives that he would add to the funds normally made available to him for family housing.

Mr. DAVIS. From what source?

Mr. SANDERS. From his overall \$25 billion to operate—from the total amounts assigned to him to program for the Navy, sir, before the appropriation process. You see, I am talking about the budget formulation now.

Do I make myself clear?

Mr. DAVIS. No, I am still a little hazy on it now.

Mr. SANDERS. All right, sir, let me say it this way.

I have a son at home who works. He earns  $x$  amount of money and he uses that money for purposes that he sees fit. I give him, also  $y$  amount to buy shoes with.

Mr. SIKES. Who is ahead?

Mr. SANDERS. He is ahead. He says to me, Dad, I want to take some of my money that I earned and buy an extra pair of shoes. So he goes ahead and does it.

This is really what we have done in our family housing. We are taking funds that are normally spent for military personnel, maintenance of the fleet, procurement of weapons, ammunition, what have you, and said because the overriding program in the Navy is family housing, we are going to put \$20 million more in family housing than OSD has allocated.

Mr. DAVIS. All right, so you make that decision.

Mr. SANDERS. Yes, sir.

Mr. DAVIS. Where do you get the money from?

Mr. SANDERS. It comes out of one of these other areas, sir; the whole gamut of other Navy requirements, military personnel, modernization, fleet maintenance, what have you.

Mr. DAVIS. All right, now, is the Navy then justifying that \$20 million for other purposes?

Mr. SANDERS. No, sir; emphatically not.

When it is presented to anyone outside of the Navy from the Secretary of Defense, the Office of Management and Budget, and the Congress, that \$20 million is justified only for additional family housing.

Mr. DAVIS. Does it come then out of this subcommittee or out of the Defense Subcommittee?

Mr. SANDERS. It comes before this subcommittee. It never sees the Defense Subcommittee at all, sir. This is all done before the budget is put together and presented to you.

Mr. LONG. Would the gentleman yield?

Does that mean then that you are asking for less money from the Defense Subcommittee for these other purposes and asking more money, \$20 million altogether, from this committee?

Mr. SANDERS. That is right, this is the point. We are asking \$20 million more for family housing here than we would ordinarily ask if we did not have this \$20 million in here above the amount allocated

to us by Defense for family housing. There is no reprogramming involved, there is no change in appropriations. This is just priority of projects within the Navy, worked out before the budget is submitted to the Congress.

Mr. DAVIS. Let me see if I understand: The family housing was provided in an appropriation to the Defense Department?

Mr. SANDERS. That is right, sir.

Mr. DAVIS. Now, do we have before us two packages of family housing for the Navy?

Mr. SANDERS. No, sir, you have one package.

The Defense Department, when they first formulated the program gave us guidance for the formulation of the 1974 budget and allocated amount in their program for family housing. All right, sir? The Navy then said, this is not enough for family housing for our people. We would like to have you allocate \$20 million more than you have allocated in the Department of Defense appropriation for this purpose. We are offering to make that money available from other Navy planning dollars that you have given us. That is all it is.

So Defense added \$20 million more to the appropriation you have before you for family housing than they would ordinarily have put in. We have done this for 3 years now.

Mr. DAVIS. And are you the only department that is doing this?

Mr. SANDERS. Yes, sir, I think I am pretty safe in saying that we are the only department that has done it. I am not too sure about the Air Force in 1 year. There was some talk that they would. Army has done it this year, someone tells me.

Mr. TALCOTT. I need to ask a question to satisfy myself on this now. As I understood it, the Defense Department, when you were arguing between the services and everything for the various things that you needed, weapons procurement, military construction, family housing, the Defense Department allocated to each of the services a certain amount for family housing. The Navy has said for the last few years that it feels that Navy housing is very inadequate and it wants to add \$20 million to this?

Mr. SANDERS. That is right.

Mr. TALCOTT. It was not \$20 million 3 years ago.

Mr. SANDERS. Yes, it has been \$20 million.

Mr. TALCOTT. I thought it was a lesser amount.

So you have really added this. Now that is part of the budget presented to us?

Mr. SANDERS. That is right.

Mr. TALCOTT. But it has not taken just an allocation within the Navy to develop this budget—

Mr. SANDERS. No, sir. This is part of the presentation to you, sir, that you have now. You have stated it correctly.

Mr. McEWEN. Will you yield?

Mr. TALCOTT. Yes, I yield.

Mr. McEWEN. Mr. Secretary, the other services, as far as you know, have not done this or have done it only to a limited extent.

Mr. SANDERS. Yes, sir. I do not know how much the Army has added this year. Maybe someone here can say.

Captain RED. I understand that the Army this year has for the first time put in about \$100 million of their own money. That is the

reason they have such a large number of quarters in their request. It is the first time that I know of that any of the other services have done it.

Mr. SIKES. All right. Are there further questions on my right on the Secretary's statement?

Mr. LONG. First I thought I understood this. Now I am not quite sure. What do you mean by their own money?

Mr. SANDERS. Let me mention this again.

The President allocates amounts for planning purposes—and let me underscore planning here—prior to submission of the budget to the Congress. The President gives us certain fiscal guidance; a amount of dollars to run the Department of Defense. The Secretary of Defense breaks that down for the Department of the Navy, the Department of the Army, the Department of the Air Force, and the defense agencies appropriations. He handles family housing as a defense appropriation.

There are no funds given to the individual services to plan with for family housing. It is controlled at the defense level. The funds made available to the services are for functions basically other than family housing; the whole gamut of military requirements.

Mr. LONG. You have just tightened up your belt a little in other areas and loosened it in family housing, but it is the same total amount?

Mr. SANDERS. This is right.

Mr. LONG. Congress has been fully consulted on this reprogramming, if you want to call it that.

Mr. SANDERS. It is not a reprogramming.

Mr. LONG. It may not be.

Mr. SANDERS. As we have presented it, what we have said is that we feel so strongly that we need more family housing, that we have taken \$20 million out of this pocket and said, Mr. Secretary, would you please add that to your family housing request to the Congress so that we can get more houses in the Navy?

Mr. SIKES. That is very clear.

Mr. TALCOTT. The only difference I think, gentlemen, is that this is the first time this procedure has been really discussed with us. They have just never explained it as clearly to us as they have this time.

Mr. SIKES. Further questions on my right?

On my left?

Mr. DAVIS. Just one more. All right. Then the budget that we see over in the Defense Subcommittee reflects a reduction in other areas made by the Secretary of the Navy from what the Secretary of Defense had previously approved.

Mr. SANDERS. No, no, no, definitely not.

Mr. MCKAY. Is it increase overall?

Mr. SANDERS. Definitely not. There is no relationship between the \$20 million and the family housing budget and the budget you see. If we did not have the family housing additional \$20 million, hopefully we would see it in another segment of the budget before you.

Mr. SIKES. This is a shift in Milcon?

Mr. SANDERS. It is just a shift in total Navy resources. If we got right down to it, I would have trouble identifying where the \$20 million came from. It is just when we started to say here is \$25 billion to run the Navy, the Secretary of the Navy says one of my top priorities is

\$20 million for family housing. So we took that off the top and \$20 million went in.

Mr. TALCOTT. In effect, what Mr. Davis is saying is right.

Mr. SANDERS. No; I could take it out of military construction and it would not affect the amount before that other committee.

Mr. TALCOTT. Yes.

Mr. SANDERS. It could come out of anything in the whole gamut of the Navy.

Mr. SIKES. That is what Mr. Davis said.

Mr. SANDERS. Yes, sir; but the point I am making is, it would not necessarily effect the other committee. It could be this committee, too, in terms of the Milcon. I cannot identify where it came from.

Mr. DAVIS. But the potential is there?

Mr. SANDERS. Yes, sir.

Mr. DAVIS. I am assuming the Secretary of the Navy prepares his requirements, and he goes with that to the Secretary of Defense. Then the Secretary of Defense says "All right, you can develop your budget within this amount of money" the Secretary of Defense might have indicated that he wanted 565,000 people in the Navy, we will say, instead of 550,000, but the Secretary of the Navy says no, I would rather have 15,000 less people—that does not balance up—I would rather take that money and put it into family housing.

Mr. SANDERS. Yes, sir; this could be done.

Mr. McKAY. Then is that a transfer without the necessary approval of the Defense Committee and this Committee? After you get this money, do you transfer it to whatever you choose?

Mr. SANDERS. No. This is all done before anything is submitted to Congress. There are no appropriations involved in this at all. This is planning before the budget is formulated and put together for your approval, sir.

Mr. SIKES. You are readjusting your bookkeeping, is that correct? Maybe I had better not start another possible—

Mr. SANDERS. No.

Mr. DAVIS. I will reserve further questions, Mr. Chairman.

Mr. SIKES. All right.

Mr. LONG. You really started something.

Mr. SIKES. Now we are going to hear the statement of Admiral Marschall. This is his first appearance in his present capacity.

#### BIOGRAPHICAL SKETCH OF ADMIRAL MARSCHALL

Again we congratulate you. We will put your biographical sketch in the record.

[Biography follows:]

REAR ADM. ALBERT R. MARSCHALL, CIVIL ENGINEER CORPS, U.S. NAVY

Albert Rhoades Marschall was born in New Orleans, La., on May 5, 1921, son of Albert L. and Halcyon (Rhoades) Marschall. He attended Tulane University in New Orleans from 1937 until 1940 and in 1941 entered the U.S. Naval Academy, Annapolis, Md., on appointment from his native State. Graduated with distinction in the class of 1945 on June 7, 1944 (accelerated course due to World War II), he was commissioned ensign and subsequently advanced in rank to that of rear admiral, to date from July 1, 1970. He was transferred from the line of the Navy to the Civil Engineer Corps in 1948. His selection for the rank of rear admiral was approved by the President on June 16, 1969.

Following graduation from the Naval Academy in 1944, he joined the U.S.S. *Ross* (DD-563) and while on board that destroyer participated in the invasion of Leyte and the occupation of Japan. In June 1946 he reported as first lieutenant on board the U.S.S. *Forrest Royal* (DD-872). Detached from that destroyer in July 1946, he next had postgraduate instruction at the Rensselaer Polytechnic Institute, Troy, N.Y., from which he received the degrees of bachelor of civil engineering and master of civil engineering. He served as assistant public works officer and public works officer at the Bureau of Yards and Docks Supply Depot, Davisville, R.I., from September 1948 to September 1950, after which he attended the junior course at the Amphibious Warfare School, Marine Corps Schools, Quantico, Va.

In January 1951, he joined Amphibious Construction Battalion Two and in April 1953, reported as assistant civil engineer corps detailer in the Bureau of Naval Personnel, Navy Department, Washington, D.C. From September 1955, to July 1957, he had duty in connection with construction and real estate at the U.S. Naval Academy, then was assigned to the District Public Works Office, 12th Naval District, headquartered in San Francisco, Calif., where he remained until July 1960.

Completing instruction at the Armed Forces Staff College, Norfolk, Va., in January 1961, he returned to the Bureau of Naval Personnel to serve as civil engineer corps detailer. Transferred in July 1962 to the Bureau of Yards and Docks, Navy Department, he served as director of weapons and other support divisions until July 1964, when he became public works officer at the Naval Academy. In September 1966, he assumed command of the 30th Naval Construction Regiment and from June 1967, had additional duty as commander 3rd Naval Construction Brigade.

He reported in October 1967, as commanding officer of the Southeast Division, Naval Facilities Engineering Command and district civil engineer on the staff of the commandant of the 6th Naval District, with headquarters in Charleston, S.C.

On March 2, 1970, he became deputy commander of the Pacific Division, Naval Facilities Engineering Command, Southeast Asia, with headquarters in Saigon, Republic of Vietnam, with additional duty as officer in charge of construction, Naval Facilities Engineering Command Contracts, Republic of Vietnam and commander 3d Naval Construction Brigade. In May 1971, he reported as Director of the Shore Installations Division, Office of the Chief of Naval Operations, Navy Department and in June 1972 was ordered detached for duty as vice commander of the Naval Facilities Engineering Command and Deputy Chief of Civil Engineers, Navy Department.

Rear Admiral Marschall's personal decorations include the Distinguished Service Medal, Legion of Merit with combat distinguishing device, Meritorious Service Medal, Combat Action Ribbon, Order of Military Merit, Chung Mu (Korea), and National Order (Vietnam). He is also entitled to wear the Navy Unit Commendation Ribbon with bronze star; Meritorious Unit Citation with bronze star; American Defense Service Medal; American Campaign Medal; Asiatic-Pacific Campaign Medal; World War II Victory Medal; Navy Occupation Service Medal, Asia Clasp; National Defense Service Medal with bronze star; the Vietnam Service Medal; the Philippine Liberation Ribbon with two stars; Philippine Presidential Unit Citation Badge; the Republic of Vietnam Campaign Medal and the Republic of Vietnam Armed Forces Meritorious Unit Citation (Gallantry Cross). In 1967 he received the George Goethals Medal from the Society of American Military Engineers.

His official home address is 2848 State Street, New Orleans, La. He is married to the former Marie Gamard of New Orleans, and they have five children, Thomas Rhoades Marschall, David Gamard Marschall, Mrs. Laurel Patterson, Pamela Joan Marschall and Albert Louis Marschall II.

Rear Admiral Marschall is a member of the Society of American Military Engineers, Tau Beta Pi, the National Society of Professional Engineers, the American Public Works Association and the American Society of Civil Engineers. He is registered as a professional engineer and land surveyor in Louisiana.

Mr. SIKES. We would be glad to hear from you. Please proceed.

#### STATEMENT OF COMMANDER NAVAL FACILITIES ENGINEERING COMMAND

Admiral MARSCHALL. Thank you. It is a real treat to be with you and the distinguished members of your committee.

Mr. Chairman and members of the committee: I am Rear Adm. A. R. Marschall, commander of the Naval Facilities Engineering Command. I relieved Rear Adm. W. M. Enger as commander on May 11, 1973. I consider it an honor and privilege to present the Navy's fiscal year 1974 military construction appropriation budget.

Brig. Gen. M. T. Jannell, U.S. Marine Corps, will present the Marine Corps portion of the budget.

#### FISCAL YEAR 1974 MILITARY CONSTRUCTION APPROPRIATION

The total direct program authority requested this year is \$697.4 million. A \$12 million saving in Southeast Asia and other military construction appropriations will be utilized to fund some projects this year; therefore, the new budget authority request is \$685.4 million. The appropriations request for fiscal year 1973 was \$554.2 million, and the amount appropriated was \$517.8 million.

#### BASE CLOSURES

The Secretary of the Navy and Chief of Naval Operations have both stated the need to tailor shore based logistic support to match the requirements of our strategic and general purpose forces. The base closure announcement of April 17, 1973, initiates action to meet the objective of reducing general support expenditures for shore installations.

I will depart from the procedure used in presenting the program for the last couple of years. The comparative analyses by categories of facilities and naval districts are included at the end of my statement for insertion into the record, if desired. I would like to comment on the important elements of this program and relate these elements to other Navy budgets examined by members of the committee.

I will discuss military construction projects associated with: strategic forces (which is primarily Trident), an All-Volunteer Force, major weapons systems, pollution abatement, new technology, and training facilities.

#### STRATEGIC FORCES

Under strategic forces, approximately 18 percent of this year's program has been allocated to initiate construction of a Trident refit complex and facilities for flight testing the Trident missile. The facilities requested this year are essential for meeting the initial operational capability date of late calendar year 1978 for this weapons system. A briefing later will provide details on the requirement for and the facilities construction associated with the Trident facilities project.

#### ALL-VOLUNTEER FORCE

Projects that will assist the Navy in achieving and maintaining all-Volunteer Force are projects in the categories of bachelor housing, community support facilities (which are clubs, exchanges, commissary stores, and recreational facilities), medical facilities and cold iron facilities. Cold iron facilities are shoreside utilities which enable a ship in port to shut down its boiler plant and electrical generation equipment and literally go cold iron. Projects associated with an All-Volunteer Force constitute 26 percent of the program.

## BACHELOR HOUSING

Taking each of the programs related to an All-Volunteer Force in order, this year's bachelor housing program requests \$80 million for providing bachelor housing and messing facilities. This is a reduction from last year's appropriations for bachelor housing. The emphasis placed on bachelor housing the last couple of years still exists, with bachelor housing constituting 12 percent of this year's program. This year's program will provide 5,378 new spaces for the Navy and 3,990 new spaces for the Marine Corps. For the Navy, the program will also provide 103 new bachelor officer spaces, and the modernization of 29,719 bachelor enlisted and 126 bachelor officer spaces.

## COMMUNITY SUPPORT FACILITIES

Community support facilities—Navy exchanges, commissaries, and clubs provide some benefits traditional with service life. Facilities for recreation and welfare are necessary to provide stimulating leisure activities for Navy personnel comparable to those of their civilian contemporaries. These facilities have received a minimum of funding the last several years. The request for community support facilities is \$12 million.

## MEDICAL PROGRAM

The medical program requested this year represents a significant increase over the program appropriated last year. It has long been recognized that one of the major benefits of military service is complete medical care. There is a recognition within the Defense Department of a serious need to upgrade medical facilities so that the delivery of medical care will be improved. The quality of medical care has always remained high, but the delivery of medical care has left something to be desired for the last several years. Some of the inefficiencies in our present health care system stem from the inadequate facilities in which many of our physicians and dentists are required to practice their profession. Medical facilities that are undesirable from a professional standpoint have an adverse effect on medical officer retention. This year's program of \$65.3 million, or 9.4 percent of the program, includes a replacement hospital at the Naval Training Center, Orlando, a hospital addition at the naval hospital, New Orleans, the upgrading and modernization of 2 hospitals, the replacement of 11 dispensaries and dental clinics, 2 dispensary additions and the replacement of 1 preventive medicine unit. This year's appropriations request is \$23 million greater than the amount appropriated last year. The improved delivery of medical care expected when these facilities are completed should make a significant contribution toward the goal of achieving and maintaining an all Volunteer Force.

## COLD IRON PROGRAM

The cold iron program is directed toward reducing watch standing requirements when a ship is in port, and thereby maximizing the amount of time ships' personnel may spend with their families. The provision of utilities from the shore also provides, and this is a very key item, benefits in shipboard equipment maintenance and fleet readiness. Last year \$23 million was appropriated for 14 projects. This

year's program requests \$26 million for six pier and berthing wharf utilities projects, one berthing pier project, and one project for expansion of a steam distribution system.

#### MAJOR WEAPONS SYSTEMS

Requested for major weapons systems this year is \$10 million, excluding Trident. An aircraft systems training building is requested at the Naval Air Station, Oceana, Va., for the F-14 supersonic jet carrier based fighter aircraft. For the A-7E attack aircraft, an integrated avionics shop is requested at the Naval Air Station, Lemoore, Calif., at the Naval Air Station, North Island, Calif., an avionics facilities project is requested for the S-3A long range antisubmarine warfare aircraft. For the mark 48 torpedo, a torpedo overhaul shop is requested at the Naval Weapons Station, Yorktown, Va. This year's request for major weapons systems is slightly less than the \$11 million appropriated last year. This element is significantly larger than last year when Trident facilities are included.

#### POLLUTION ABATEMENT

This year's request for \$92.3 million continues an aggressive program initiated by the Navy in 1968 to abate air and water pollution at Naval and Marine corps installations. The Congress has given strong support to our requests and appropriated, through fiscal year 1973 \$198 million for pollution abatement facilities. The breakdown between air and water pollution abatement facilities is \$52 and \$146 million, respectively.

For air pollution abatement the navy had programed \$27.6 million for 18 facilities at 15 Naval and Marine Corps installations; 8 facilities costing approximately \$18 million are for control of the particulate and chemical fume emissions produced in the industrial operation of coating metal surfaces; 3 facilities will improve boiler plant emissions through fuel conversions.

Rounding out the air pollution abatement facilities are four facilities to improve air emissions, two pipe insulation working facilities, and smoke-abatement facilities for a firefighting school.

For water pollution abatement, funding is requested in the amount of \$64.7 million for 45 facilities at 39 Naval and Marine corps installations. A major portion of this request is for construction of pier sewers for collection of sanitary wastes from ships in port. In this, the second year of a 5-year program for constructing disposal ashore facilities, there are 13 facilities costing approximately \$34 million. The pier sewers are planned to coincide with scheduled ship alterations. There are eight facilities for handling of fuels and collection, treatment, and disposal of oils and oily waste products, from ships and shore installations. There are 3 municipal sewer connections, 11 improvements to sewer systems and treatment plants, 7 facilities for collection and treatment of industrial wastes, and 2 facilities for treatment of filter backwash water at water treatment plants.

The other significant and slightly unique facility is the provision of a facility to dispose of unserviceable ammunition that may no longer be disposed of by deep water ocean dumping. In looking ahead, we

expect over the next few years to construct additional facilities to transfer ship wastes ashore. Based on technology now in the research and development stage, facilities will be required to control smoke and gases from jet engine test cells. Additional air, water, and for the first time, noise pollution control facilities will be required to meet standards now being established under the "best practicable" and "best available" technology requirements of Federal pollution control acts.

In summary, we have made considerable progress with our pollution abatement programs, but we also expect, for the reasons provided above, a significant pollution abatement program for the next several years.

#### NEW TECHNOLOGY

For the element new technology, this year's program requests \$23 million for research, development, test, and evaluation facilities associated with underwater acoustic surveillance, communications, manned underwater systems, and coastal region warfare. This excludes \$4 million of R.D.T. & E. facilities associated with the Trident missile, since all Trident facilities are included under the strategic forces element. To advance basic research in underwater surveillance, an acoustic research facility has been requested for the Naval Research Laboratory, Washington, D.C. Undersea surveillance research has the objective of increasing the Navy's capability for acoustic surveillance of submarines. This research is directed toward techniques utilizing large, high power, low frequency acoustic energy sources and large receiver arrays. The basic research findings of the Naval Research Laboratory will be used by personnel of the New London Laboratory of the Naval Underwater Systems Center. The new engineering building requested at New London is needed for personnel engaged in the research and development of sonar systems, and improved underwater acoustic sensors for antisubmarine warfare ships. Sonar, which is an acronym for sound, navigation, and ranging, is the underwater equivalent of radar. The development of prototypes of acoustic energy transmitting and receiving (transducer) components will also be performed in the engineering building. A transducer is a device for converting electric energy into sound (projector) or sound into electricity (receiver or hydrophone). Some sonars use the same transducer for generating and receiving sound. Other R.D.T. & E. to be performed in the engineering building is in the fields of the generation of spurious signals and electromagnetic silencing or jamming systems. The acoustic R.D.T. & E. to be performed in both facilities should find direct application in the Trident weapon system.

In the communications area, an electronics development and testing laboratory is requested at the Naval Electronics Laboratory, San Diego. This Laboratory is needed for effective development and "try-before-buy" performance testing of electronic command control, communications and surveillance systems for the new guided missile frigates, destroyers, amphibious assault ships, and Trident submarine. A facility for testing and evaluating airborne electronic equipment and systems is requested for the Naval Air Test Center, Patuxent River, Md.

In the field of manned underwater systems, this year's program requests facilities to perform experimentation with animals to a 3,300-

foot depth so that operational human diving depths may be lowered from 1,500 feet to 2,000 feet and beyond. The Environmental Health Effects Laboratory at the Naval Medical Research Institute, Bethesda, will provide the facility for this experimentation. The Laboratory will also provide facilities for personnel engaged in seeking a solution to medical problems associated with the inhalation of toxic vapors and the absorption of toxic compounds in weapon systems atmospheres. The toxic vapors or compounds are those associated with existing processes such as fueling missiles and torpedoes of the Polaris/Poseidon submarine fleet. At the Navy Coastal System Laboratory, Panama City, Fla., an experimental diving facility is requested that will utilize the results of the basic research completed at the Environmental Health Effects Laboratory in testing and evaluating diving schedules, excursion diving, crew training, and underwater salvage operations. The experimental diving facility is a logical adjunct to the ocean simulation facility funded in fiscal year 1969 to provide a facility for development, test, and evaluation of the man/equipment interface in and on excursions from manned diving systems to depths of 2,200 feet.

In the coastal region warfare field, a systems development and test facility is requested for coastal technology, and amphibious operations research; the development and testing of vehicles, sensors, and other equipment utilized in riverine operations and inshore underseas warfare, and research, development, and support of Marine Corps investigations of countermeasures for land mines; sensor equipment; and overland mobility equipment.

There is one project at the Naval Research Laboratory, Washington, for an Integrated Electromagnetic Test and Analysis Laboratory. This Laboratory will provide facilities to conduct basic research required to develop and evaluate countermeasures against threat weapons systems such as the antiship cruise missile.

#### TRAINING FACILITIES

The Navy operates one of the largest school systems in the country, with some 450 schools graduating about 600,000 students per year. Since trained personnel are the Navy's greatest asset, the Navy is taking several concurrent actions to strengthen, modernize, and vitalize its training programs. One action was the establishment in August 1971 of the Chief of Naval Training with the responsibility of overseeing and managing all training, whether academic or applied, shipboard, aircraft, or submarine. Training with a common core curriculum will be consolidated to the degree feasible at one installation, and efforts are being undertaken to raise the quality of training in all areas to the high standard of submarine and aviation training. Seven percent of this year's programs is devoted to Naval and Marine Corps training facilities. The majority of the training program is directed toward applied instruction with facilities for new flight simulators being provided at three installations.

The new flight simulators with 6° of freedom and visual motion integration, will enable some of the flight hours of the jet pilot training syllabus to be transferred to the simulators with a resultant increase in safety. For shipboard personnel, the training program will provide facilities for: (1) Annually training about 3,000 technicians

and operating personnel who will be deployed aboard nuclear-powered vessels, (2) facilities for expanding by 350 students annually the training facilities available for basic electricity and electronics training, which is a prerequisite course for training in 17 percent of the Navy rates, (3) machinist mate and boilerman training on the high pressure (1,200 psi) propulsion plants going into the newer fleet ships. In the ordnance area, a training building is requested to provide facilities for nuclear weapons orientation training annually of 3,800 officer and enlisted personnel of the Atlantic Fleet. In the electronic warfare area, an electronics warfare training building is requested for conducting annually advanced training for 700 electronic warfare technicians, 150 naval flight officers and electronic warfare officers, and 400 aviation electronic warfare equipment maintenance specialists. Electronic warfare is the reception of electronic signals to identify and locate enemy weapon systems, the transmission of electronic signals to decoy, deceive, or make ineffective enemy electronically controlled weapons, and the development of countermeasures, including tactics to defeat enemy measures to counter our electronically controlled weapon systems. There is a very serious shortage of personnel with electronic warfare training, which makes this project so very important to the Navy.

In the field of academic training, facilities are requested for conducting tactical command and direction systems training at two installations. At the Naval Academy, the construction proposed will modernize, in consonance with the master plan, an existing building to provide classrooms, laboratories, and simulation training spaces for weapons and systems engineering courses.

#### SUMMARIES

This year's program provides facilities for those elements with the greatest need. The projects are required this year to satisfy new and current missions, and to provide facilities to modernize the Shore Establishment. We appreciate the past support of the committee and earnestly seek it for this year's program.

We will be pleased to answer any questions of the committee. Thank you.

[Attachments follow.]

APPROPRIATIONS COMPARISON OF ELEMENTS OF FISCAL YEAR 1974 AND FISCAL YEAR 1973 MILITARY  
CONSTRUCTION PROGRAMS

[All dollars in thousands]

	Fiscal year 1974 request	Per- cent	Fiscal year 1973 appropriation	Per- cent	Change
<b>Strategic forces:</b>					
Trident <sup>1</sup> .....	125,223	18.0			
Other.....	177				
Subtotal, strategic forces.....	125,400	18.0			+18.0
<b>All volunteer force:</b>					
Bachelor housing <sup>2</sup> .....	79,880	11.5	112,233	21.7	
Community support facilities <sup>3</sup> .....	12,307	1.8	13,973	2.7	
Medical facilities.....	65,275	9.4	42,440	8.2	
Cold iron facilities.....	25,873	3.7	23,471	4.5	
Subtotal, all volunteer force.....	183,335	26.3	192,117	37.1	-10.8
<b>Major weapons systems:</b>					
F-14 fighter aircraft.....	3,386	.5	726	.1	
A-7E attack aircraft.....	1,933	.3			
S-3A antisubmarine warfare aircraft.....	1,640	.2	4,136	.8	
Mark 48 torpedo.....	1,327	.2	1,064	.2	
SSN 688 nuclear attack submarine.....			5,032	1.0	
Airborne mine counter measures.....	1,321	.2			
Subtotal, major weapons systems.....	9,607	1.4	10,958	2.1	-.7
<b>Pollution abatement:</b>					
Air.....	27,636	3.9	24,194	4.7	
Water.....	64,675	9.3	51,216	9.9	
Subtotal, pollution abatement.....	92,311	13.2	75,410	14.6	-1.4
<b>New technology:<sup>4</sup></b>					
Research development.....					
Test and evaluation facilities.....					
Acoustic surveillance.....	4,340	.6			
Communication systems.....	4,198	.6	140		
Manned underwater systems.....	7,735	1.1	4,500	.9	
Coastal region warfare.....	2,100	.3	500	.1	
Aircraft.....			4,033	.8	
Other.....	4,655	.7	2,695	.5	
Subtotal, new technology.....	23,028	3.3	11,868	2.3	+1.0
<b>Training facilities:</b>					
Academic instruction.....	6,024	.9	17,792	3.4	
Applied instruction.....					
Aviation.....	15,422	2.2	16,008	3.1	
Ships.....	16,018	2.3	6,008	3.1	
Ordnance.....	2,470	.3			
Electronic warfare.....	3,982	.6	4,998	1.0	
Marine Corps.....	2,992	.4			
Operational trainer facilities, aviation.....	3,803	.5			
Other training facilities, Marine Corps.....	544	.1			
Subtotal, training facilities.....	51,255	7.3	44,816	8.6	-1.3
Subtotal, above elements.....	484,936	69.5	355,196	64.7	+4.8
Other operational and logistic support facilities.....	212,464	30.5	183,161	35.3	-4.8
Total, obligational authority.....	697,400	100.0	518,330	100.0	
Less prior year funds.....	12,000		500		
New obligational authority.....	685,400		517,830		

<sup>1</sup> Excludes \$10,800,000 of planning and design funds.

<sup>2</sup> Excludes Naval Home—\$9,444,000.

<sup>3</sup> Excludes employees parking structure, NSA, New Orleans, \$2,323,000.

<sup>4</sup> Excludes R.D.T. & E. facilities for Trident and amendments, \$6,239,000.

## APPROPRIATIONS SUMMARY BY NAVAL DISTRICT

[Dollars in thousands]

Naval district	Fiscal year 1974	Fiscal year 1973
<b>Inside the United States:</b>		
1st Naval District .....	\$367	\$21,340
3d Naval District .....	12,695	8,375
4th Naval District .....	1,130	4,388
Naval District, Washington, D.C. ....	25,491	21,186
5th Naval District .....	50,358	22,426
6th Naval District .....	85,476	81,735
8th Naval District .....	23,181	19,068
9th Naval District .....	19,908	5,255
11th Naval District .....	43,853	33,672
12th Naval District .....	22,571	37,967
13th Naval District .....	11,073	16,537
14th Naval District .....	15,694	9,584
Marine Corps .....	54,844	61,083
<b>Various locations:</b>		
Trident facilities .....	125,223	0
Pollution abatement—Air .....	27,636	24,194
Pollution abatement—Water .....	60,680	50,016
<b>Total inside the United States .....</b>	<b>580,180</b>	<b>416,835</b>
<b>Outside the United States:</b>		
10th Naval District .....	2,852	3,099
15th Naval District .....	0	0
Atlantic Ocean Area .....	17,478	5,699
European Area .....	8,192	15,188
Indian Ocean Area .....	0	6,100
Pacific Ocean Area .....	14,903	9,809
<b>Various locations:</b>		
Pollution abatement—Air .....	0	0
Pollution abatement—Water .....	3,995	1,200
<b>Total outside the United States .....</b>	<b>47,420</b>	<b>41,095</b>
<b>Classified programs .....</b>	<b>0</b>	<b>0</b>
<b>General support programs .....</b>	<b>627,600</b>	<b>457,930</b>
<b>Urgent minor construction .....</b>	<b>15,000</b>	<b>14,600</b>
<b>Planning and design .....</b>	<b>53,800</b>	<b>42,800</b>
<b>Access roads .....</b>	<b>1,000</b>	<b>3,000</b>
<b>Total continuing authorization .....</b>	<b>69,800</b>	<b>60,400</b>
<b>Total obligational authority .....</b>	<b>697,400</b>	<b>518,330</b>
<b>Reductions in total obligational authority .....</b>	<b>12,000</b>	<b>500</b>
<b>New obligational authority .....</b>	<b>685,400</b>	<b>517,830</b>

## FISCAL YEAR 1974 MILITARY CONSTRUCTION PROGRAM APPROPRIATION SUMMARY BY FACILITIES CATEGORIES

[In thousands of dollars]

Description	Fiscal year 1974 budget request				Fiscal year 1973 appropriation			
	Navy	Marine Corps	Total	Percent	Navy	Marine Corps	Total	Percent
Operational.....	71,938	333	72,271	10.4	42,407	2,983	45,390	8.7
Training.....	47,719	3,536	51,255	7.3	44,816	0	44,816	8.6
Maintenance production.....	129,003	3,317	132,320	19.0	44,886	10,210	55,096	11.4
R.D.T. & E.....	29,267	0	29,267	4.2	11,868	0	11,868	2.3
Supply.....	1,299	747	2,046	3	47,578	1,778	9,356	1.8
Medical.....	61,450	3,825	65,275	9.4	41,180	1,260	42,440	8.2
Administrative.....	12,439	5,204	17,643	2.5	4,963	1,122	6,085	1.2
Housing and community.....	76,418	27,536	103,954	14.9	85,113	41,093	126,206	24.4
Housing.....	(63,893)	(25,431)	(89,324)	(12.8)	(72,045)	(40,188)	(112,233)	(21.7)
Community support.....	(12,525)	(2,105)	(14,630)	(2.1)	(13,068)	(905)	(13,973)	(2.7)
Utilities.....	50,912	9,711	60,623	8.7	34,626	2,637	37,263	7.2
Pollution abatement <sup>1</sup> .....	92,311	0	92,311	13.2	175,410	0	175,410	14.6
Air.....	(27,636)	0	(27,636)	(3.9)	(24,194)	0	(24,194)	(4.7)
Water.....	(64,675)	0	(64,675)	(9.3)	(51,216)	0	(51,216)	(9.9)
Real estate.....	0	635	635	1	0	0	0	0
Subtotal.....	572,765	54,844	627,600	90.0	396,847	61,083	457,930	88.4
Contract authorization.....	69,800	0	69,800	10.0	60,400	0	60,400	11.6
TOA.....	642,556	54,844	697,400	100.0	457,247	61,083	518,330	100.0
Fund adjustments.....	12,000	0	12,000	0	500	0	500	0
NOA.....	630,556	54,844	685,400	0	456,747	61,083	517,830	0

<sup>1</sup> Includes the pollution abatement portion of the Marine Corps program.

## NARRATIVE CATEGORY ANALYSIS APPROPRIATIONS

## OPERATIONAL FACILITIES, \$72,271,000

This category represents 10.3 percent of the appropriations request. It contains projects for essential aviation, communications, and waterfront operational facilities. Included are three Marine Corps projects that will provide airfield approach lighting, aircraft corrosion control facilities, and a telephone cable. Major Navy airfield projects include a runway and taxiway overlay at Naval Station, Adak, Alaska; a taxiway overlay at Naval Air Station, Moffett Field, Calif.; and an aircraft parking apron at Naval Detachment, Souda Bay, Crete, Greece. Included in the communications area are: a satellite communications terminal at the Naval Communication Station, Wahiawa, Hawaii, which will expand the existing capacity to allow for additional communications satellite equipment; and a communication facility with a classified mission at Naval Station, Charleston, S.C. Other operational facilities include berthing piers at Naval Station, Norfolk, Va., and Naval Station, San Diego, Calif., and a wharf and dredging facilities for the Trident project. Two projects will provide modernization of VLF antennas at Naval Communication Stations, Cheltenham, Md., and Wahiawa, Hawaii.

## TRAINING FACILITIES, \$51,255,000

Training facilities included in this construction program cover a wide range of naval training activities for officer and enlisted personnel. The majority of the training program will provide applied instruction facilities; in the aviation field, major projects include new flight simulators to be provided at the Naval Air Stations, Memphis, Tenn., and Miramar, Calif. In addition, an applied instruction building will be provided at the Fleet Combat Direction Systems Training Center, Dam Neck, Va., and an aircraft systems training buildings project will be provided at Naval Air Station, Oceana, Va. For shipboard personnel, the following major applied instruction facilities will be provided: an applied SONAR instruction building at Naval Station, Norfolk, Va.; a nuclear power training building and a basic electricity and electronics training building at Naval Training Center, Orlando, Fla.; and a machinist/boilerman instruction building at Naval Training Center, Great Lakes, Ill. Other applied instruction facilities include a nuclear training building at Nuclear Weapons Training Group, Norfolk, Va.; an electronic warfare training building at Naval Communications

Training Center, Pensacola, Fla.; and applied instruction buildings at Marine Corps Base, Twenty-nine Palms, Calif.

The second major area of training facilities is the academic instruction facilities. Included under this heading are the Maury Hall rehabilitation project at Naval Academy, Annapolis, Md., and the academic instruction building at Fleet Combat Direction Systems Training Center, San Diego, Calif. The Marine Corps also has a project to provide combat training ranges at Marine Corps Base, Camp Pendleton, Calif. The training category represents 7.3 percent of the appropriation request.

#### MAINTENANCE AND PRODUCTION, \$182,320,000

The maintenance and production category represents 18.9 percent of the appropriation request. The projects will provide support to aircraft-oriented engine and avionics maintenance activities, mine assembly and torpedo overhaul shops, as well as shops to support maintenance of station facilities. The major portion of this category is for the refit facilities of the Trident submarine weapons system. Two shipyard modernization projects will provide a service group building at Long Beach Naval Shipyard, Long Beach, Calif., and a machine shop at Norfolk Naval Shipyard, Portsmouth, Va. Naval air rework facilities projects are the avionics building environmental control at Naval Air Station, Alameda, Calif.; an aircraft final finish facility at Naval Air Station, Jacksonville, Fla., and the maintenance hangar addition at Naval Air Station, North Island, Calif. Other projects include the integrated avionics shops at Naval Air Stations, Moffett Field, Calif., and North Island, Calif.; the mine assembly shop at Naval Magazine, Guam; the torpedo overhaul shop at Naval Weapons Station, Yorktown, Va.; the air/underwater weapons compound at Naval Air Station, Bermuda; a helicopter maintenance hangar at Naval Air Station, Norfolk, Va.; an intermediate maintenance facility at Naval Air Station, Cecil Field, Fla.; and the five Marine Corps projects which will provide a hangar addition, automotive vehicle shops, a parachute and survival equipment shop, an avionics shop, and a hangar modification.

#### RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, \$29,267,000

These projects represent an investment in our future security. This segment of our construction request, representing 4.2 percent of the total request, will provide the buildings, laboratories, and specialized test structures that are required in the conduct of a quality research and development program. The major laboratory projects are the electronics development and test laboratory at Naval Electronics Laboratory Center, San Diego, Calif., and phase II of the environmental health effects laboratory at Naval Medical Research Institute, Bethesda, Md. Other important projects include the engineering building that will provide space for engineering and scientific support of underwater sensor systems at Naval Underwater Systems Center, New London, Conn.; a missile checkout building and launch complex for Trident; and a systems development and test facility which will provide the special facilities required to permit effective systems development and testing of coastal region warfare equipment at Naval Coastal Systems Laboratory, Panama City, Fla. An experimental diving facility at Naval Coastal Systems Laboratory, Panama City, Fla., will provide laboratory facilities and recompression chambers for the Navy experimental diving unit which is being relocated from the Washington Navy Yard. Two amendments are included in this category. One is for the deep ocean engineering pressure facility at the Naval Coastal Systems Laboratory, Panama City, Fla., and the other for the hypervelocity wind tunnel at Naval Ordnance Laboratory, White Oak, Md.

#### SUPPLY FACILITIES, \$2,046,000

Supply and storage facilities include two projects for warehouses, one special purpose storage facility, and one Marine Corps project for a cold storage and ready issue warehouse. These four projects represent 0.4 percent of the total request.

#### MEDICAL FACILITIES, \$65,275,000

This year's program, representing 9.4 percent of the total appropriation program, accelerates the replacement of World War II and other substandard medical facilities. This is a significant increase over prior year programs and will

result in major improvements in the delivery of medical care to Navy and Marine Corps personnel and their dependents. A new hospital is requested at Orlando, Fla., where the existing facilities are overcrowded, substandard, and incapable of providing the required medical services. Other projects in this category include modernizing hospitals at Great Lakes, Ill., and Oakland, Calif., and a hospital addition at New Orleans, La. Dental clinics will be provided at the Naval Air Station, Lemoore, Calif., and Naval Training Center, Orlando, Fla. Medical/dental clinics will be provided at Naval Air Stations Chase Field and Kingsville, Tex., Meridian, Miss., Whiting Field, Fla., and at the Naval Amphibious Base, Little Creek, Va. At the Naval Training Center, Great Lakes, Ill., two projects will provide a dispensary/dental processing facility and a dispensary/dental clinic. In this category there is one Marine Corps project for a dispensary at Marine Corps Recruiting Depot, San Diego, Calif.

#### ADMINISTRATIVE FACILITIES, \$17,643,000

The projects in this category represent 2.6 percent of the total program request. One project will provide facilities for the relocation of the Military Sealift Command to Military Ocean Terminal, Bayonne, N.J., from the Brooklyn Army Terminal. An administrative complex requested at the Naval Support Activity, New Orleans, will provide administrative space for relocating the Armed Forces Entrance Examining Station from leased space in downtown New Orleans, and for consolidation at one location the Naval Reserve Manpower Center, Personnel Management Information Center, and Enlisted Personnel Distribution Office. An administrative building is also requested for the Naval Technical Training Center, Naval Air Station, Meridian, Miss., and for the Marine Corps Supply Center, Albany, Ga.

#### TROOP HOUSING, \$89,324,000

Significant emphasis is again being placed this year on bachelor housing and messing facilities for improving the living environment for Navy and Marine Corps personnel. This year's program will provide 9368 new spaces and will modernize 2,719 spaces for bachelor enlisted personnel. For bachelor officers, this year's program will provide 103 new and the modernization of 128 spaces. The provision of modern facilities, which compare favorably with similar civilian community facilities, is considered to be a key factor in improving morale and retention of skilled personnel. This category represents 12.8 percent of the total appropriation request. The Marine Corps lays great stress on the provision of modern functional quarters for its personnel with 51 percent of their portion of the program devoted to bachelor housing and messing facilities.

#### COMMUNITY FACILITIES, \$14,630,000

Community facilities are requested in order to provide for the welfare and morale of Naval personnel and their dependents, both in the United States and overseas. This category includes facilities for a dependent school addition, exchanges, commissaries, gymnasiums, theaters, and EM/CPO and officers clubs. Including two Marine Corps projects, this category constitutes 2.1 percent of the program.

#### UTILITIES AND GROUND IMPROVEMENTS, \$60,623,000

This category makes up 8.7 percent of the total request and includes projects to install the necessary utility support for existing and programmed construction. Many systems are operating under full or overtaxed capacities and will be replaced. A significant portion of the utility projects, approximately 43 percent, is devoted to the Navy's "cold iron" program which allows ships to shut down their shipboard equipment while in port, thus allowing more time for equipment maintenance and giving more opportunities for shore leave for ship's personnel. Approximately 20 percent or \$9.7 million of the Marine Corps program is assigned to utilities improvements.

#### POLLUTION ABATEMENT, AIR AND WATER, \$92,311,000

The Navy is continuing its emphasis on pollution abatement by allocating 13.2 percent of the appropriations request for these facilities.

## REAL ESTATE, \$635,000

Funds are being requested for one real estate acquisition at the Marine Corps Air Station, Yuma, Ariz. This acquisition will provide the land for an aviation ordnance missile assembly and storage facility.

## CONTINUING AUTHORIZATION, \$69,800,000

Under this category, funding is provided for codified authorization for planning and design, urgent minor construction, and access road projects.

Mr. SIKES. Thank you, Admiral Marschall, that is a very good beginning.

Now would you mind going back through that part about the Naval Coastal Systems Laboratory at Panama City? I like that better. It seems like you left out something though. There is not as much there as I had hoped for.

Mr. LONG. Is that in the United States, Mr. Chairman?

Mr. SIKES. It is on the edge in the Gulf of Mexico. From there you can go in any direction, anywhere.

Mr. Secretary, we will have questions on Admiral Marschall's statement at 2 o'clock. I believe that you have a guest you want to introduce.

Mr. SANDERS. Yes, sir.

## INTRODUCTION OF MR. JACK BOWERS—ASN (I&amp;L)

If I could introduce to the committee Mr. Jack Bowers, who has been nominated by the President to be the Assistant Secretary of Navy for Installations and Logistics. Mr. Bowers comes to us from industry, having been a vice president of General Dynamics. He is a man that several of us have worked with for many years and whom we hold in high regard.

Mr. SIKES. Glad to have you aboard.

[Discussion off the record.]

Mr. Secretary, let's recess now until 2 o'clock.

## AFTERNOON SESSION

Mr. SIKES. The committee will come to order.

All right, Admiral Marschall, again thank you for your statement.

## DEFICIT

What is the amount of the Navy's shore facilities construction deficiency?

Admiral Marschall, as I am sure you understand here, you have backup witnesses. Don't hesitate to use them. That is what they are for.

Admiral MARSCHALL. Yes, sir.

Right now, Mr. Chairman, the construction deficiency is approximately \$8 billion and this compares with an estimated \$9 billion previously reported. I think we have purged our system through the shore facilities planning and programing system so that we have a better handle on what we now have as a backlog.

I think this is a fairly reasonable figure, \$8 billion.

Mr. DAVIS. Could you tell us how that was developed and arrived at, Admiral?

Admiral MARSCHALL. Yes, sir. We have a shore facilities planning system whereby each station determines its requirements; these stations then go through a major claimant indicating what construction projects they need to fill out their base, or what they need to upgrade the base with replacement facilities.

This all goes into a computer program, a type of inventory of things we need, and each year from this master list of deficiencies throughout the system we draw the annual Milcon program.

Now, admittedly, many of the things in this \$8 billion we may never see and hopefully in future years we can continue to purge this system as we have over this past year, going down from \$9 to \$8 billion for facilities, and that was before any shore establishment realignment.

But I think as the world situation stabilizes, and the Navy in particular stabilizes, we will present much more meaningful figures in the future.

Mr. DAVIS. Would this be properly called, then, an unscreened shopping list?

Admiral MARSCHALL. Basically, yes, sir, it is, but I'd like to provide a more detailed description of the process for the record.

[The information follows:]

The Chief of Naval Operations sets missions and allots basic resources for the accomplishment of these missions. Each activity translates these mission statements and basic resources into facility requirements through use of facility planning criteria guides. The Engineering Field Divisions of the Naval Facilities Engineering Command validate these requirements along with the current inventory of facilities at the activity. From comparing the inventory with the requirements a list of excesses and deficiencies is obtained. Excesses are screened carefully to determine if they can be used to satisfy deficiencies. All remaining deficiencies make up the construction backlog.

Mr. DAVIS. Based upon existing foreseeable missions that would be supported at that installation?

Admiral MARSCHALL. Yes, sir; and I think too often in the past we have just accepted these. We have really tried now to purge the system, as I said, and we are making headway.

Mr. SIKES. At the present rate of military construction funding, how much time will be required to eliminate the deficiency?

Admiral MARSCHALL. At the present rate and based on the figures which we have just discussed it won't be possible to eliminate this deficiency because the average annual program required for replacement of our wornout plant and facilities to fulfill new mission requirements is approximately \$870 million.

Again it may be feasible as we purge our system to come to a more meaningful figure.

#### REPLACEMENT AND MODERNIZATION

Mr. SIKES. Tell us about the progress in modernization. How does this year's program compare with other recent years?

Admiral MARSCHALL. This year, sir, \$201 million is devoted to replacement and modernization, or approximately 29 percent of the total program, somewhat less than 1973.

However, we hope to continue to peck away at this particular problem.

Mr. SIKES. Is this year's level a catchup level?

Admiral MARSCHALL. No, sir, it is not.

[Supplementary information follows:]

The \$201 million figure above represents a corrected figure from that previously furnished OSD by the Navy and used by them before this committee. The larger amount of \$343 million contained projects in error which when removed resulted in the above \$201 million.

#### 5-YEAR PROGRAM AND DEFICIT BY CATEGORY

Mr. SIKES. Can you provide for the record a listing of the Navy 5-year construction program by facilities category. Also show the current deficit above that anticipated at the end of fiscal year 1978.

[The information follows:]

#### DEPARTMENT OF THE NAVY DEFICIENCIES, BY FACILITY CATEGORY

[In millions of dollars]

Facility class	Current deficit	Fiscal years					Balance after
		1974	1975	1976	1977	1978	
Operations.....	1,014.2	72.3	82.2	37.8	47.2	71.0	703.7
Training.....	442.6	51.3	27.3	14.0	12.2	21.6	316.2
Maintenance/production.....	1,675.6	132.3	262.3	161.7	102.8	66.7	949.8
R.D.T. & E.....	368.7	29.3	22.2	19.9	19.6	31.4	246.3
Supply.....	423.5	2.0	9.3	15.7	18.3	24.5	353.7
Hospital/medical.....	847.0	65.3	133.5	167.6	132.1	102.8	245.7
Administration.....	498.1	17.6	5.0	21.8	16.6	39.1	398.0
Barracks/personnel support.....	1,749.8	104.0	151.1	115.3	121.5	119.4	1,138.5
Utilities/ground improvements.....	1,052.0	152.9	135.7	141.7	117.3	80.2	424.2
Real estate.....	143.8	.6	17.6	4.9	.7	8.1	111.9

Note: The amounts shown on the preceding tabulation for fiscal year 1974 through fiscal year 1978 represent internal Department of Defense planning estimates only, covering anticipated program levels which have not been approved by the President.

#### VOLUNTEER FORCE FACILITIES

Mr. SIKES. I note your emphasis in this year's program on personnel support facilities such as bachelor housing and medical facilities modernization. How long do you expect to continue this emphasis before achieving suitable all-volunteer force facilities?

Admiral MARSCHALL. We feel it necessary to continue the medical improvement program through fiscal year 1979 before achieving suitable all-volunteer force facilities. We feel that we have made significant strides forward in improving bachelor housing. We currently plan a significant amount for bachelor housing improvements in the 75 program but hope to taper off thereafter.

#### COLD IRON FACILITIES

Mr. SIKES. I believe this is the third year of emphasis on "cold iron" facilities. Do you have evidence that the cold iron program has improved the effectiveness of the fleet or increased volunteer or retention rates?

Admiral MARSCHALL. We have had a cold iron program for some years, Mr. Chairman, but special emphasis has been applied for only the past 2 years.

As a result, it is a little bit early to quantify the results.

Mr. SIKES. Actually has there been any significant completion of cold iron facilities to this date?

Admiral MARSCHALL. No significant completion, Mr. Chairman, and some attempt on our part to use temporary facilities to provide cold iron which has helped us a great deal, but not the items which you have approved for the long haul.

#### MEDICAL FACILITIES JOINT USE

Mr. SIKES. Has the Defense medical facilities regionalization program been in effect long enough to show results in better utilization of doctors or increased efficiency in medical facilities?

Admiral MARSCHALL. In some areas cross-utilization of physicians and paramedical personnel has been possible, sir. For example, in the Portsmouth, Va., area an optometry van visits Army and Air Force installations as well as Navy installations and provides refractions and spectacle fabrication on the spot.

Also in the Tidewater area some Navy specialist coverage is provided other services when their normally assigned physician is on leave or ill.

Mr. SIKES. Can more be achieved in this area?

Admiral MARSCHALL. I certainly think so, sir; and I think the efforts are continuing to achieve these desired results.

Mr. SIKES. Do you feel that your medical facilities modernization program will contribute to this?

Admiral MARSCHALL. Yes, sir.

Mr. SIKES. In a significant way?

Admiral MARSCHALL. "Significant" is the key word, sir. For example in Monterey, Calif., the Navy has been denied permission to replace a dispensary at the post graduate school because there will be a new dispensary dental clinic for the Army at the Defense Language School and I think the combined use of these facilities is driving this particular decision.

#### HOSPITAL WORKLOADS

Mr. SIKES. Please provide for the record the past, present, and projected workload for each of the major naval hospitals.

[The information follows:]

Workload for the major Naval Hospitals <sup>1/</sup>:

<u>HOSPITALS</u>	<u>71</u>	<u>72</u>	<u>73</u>	<u>74</u>	<u>75</u>
<b>BETHESDA</b>					
Outpatient Visits	417,816	401,578	487,865 <sup>2/</sup>	485,622 <sup>3/</sup>	484,593 <sup>3/</sup>
Average Daily Patient Load	620	511	484	462	461
Required <sup>4/</sup>	775	639	605	578	577
<b>CAMP PENDLETON</b>					
Outpatient Visits	255,831	258,113	290,473	289,902	289,902
Average Daily Patient Load	358	270	279	275	275
Required	448	338	349	344	344
<b>CHARLESTON</b>					
Outpatient Visits	247,657	253,049	235,421	266,077	293,415
Average Daily Patient Load	290	216	217	237	261
Required	363	270	272	296	326
<b>GREAT LAKES</b>					
Outpatient Visits	206,797	221,675	239,234	243,807	240,459
Average Daily Patient Load	585	397	357	362	357
Required	731	496	446	453	446
<b>JACKSONVILLE</b>					
Outpatient Visits	262,995	268,911	279,494	280,457	283,818
Average Daily Patient Load	311	296	256	257	260
Required	389	370	320	322	325
<b>OAKLAND</b>					
Outpatient Visits	276,323	298,229	254,928	253,116	249,757
Average Daily Patient Load	622	551	498	486	480
Required	778	689	623	608	600
<b>PENSACOLA</b>					
Outpatient Visits	175,419	211,812	226,724	224,088	222,768
Average Daily Patient Load	213	182	162	160	159
Required	266	228	203	200	200

<u>HOSPITALS</u>	<u>71</u>	<u>72</u>	<u>73</u>	<u>74</u>	<u>75</u>
PHILADELPHIA					
Outpatient Visits	161,153	165,400	169,296	163,197	161,191
Average Daily Patient Load	816	686	672	645 <sup>1</sup>	637 <sup>2</sup>
Required	1,020	858	840	806	796
PORTSMOUTH VA					
Outpatient Visits	337,783	342,230	322,230	317,901	310,933
Average Daily Patient Load	918	834	793	777	760
Required	1,148	1,043	991	971	950
SAN DIEGO					
Outpatient Visits	697,605	746,979	711,316	688,647	675,062
Average Daily Patient Load	1,389	1,137	1,205	1,140	1,118
Required	1,736	1,421	1,506	1,425	1,398

- 1/ Of the fourteen Naval Hospitals, with more than 500 personnel, ten provide residency (specialty) training, a full range of medical capabilities and they have research responsibilities. The above ten hospitals have the largest staffs and budgets. Reflects FY 1974 and FY 1975 base closures plan.
- 2/ Utilization rate does not reflect unmet need by beneficiary population due to major alterations and installations of air conditioning in patient care and ancillary support service area.
- 3/ Utilization rate reflects anticipated redevelopment impact due to commencement of modification at present facilities and subsequent construction of new facilities.
- 4/ This line denotes the actual number of beds required to support the reported average daily patient load on the preceeding line. It is calculated using the average daily patient load as 80% of the needed capacity and is referred to as the dispersion factor which compensates for peak periods of operation, as well as for unoccupied beds in restricted specialty care units (i.e., obstetric beds that cannot be used by male patients and beds used to isolate communicable diseases).

## MEDICAL SUPPORT FOR RETIRED PERSONNEL

Mr. SIKES. To what extent are you programing hospital space for retired personnel?

Admiral MARSCHALL. Mr. Chairman, under the current DOD guidelines we are allowed to program 5 percent more beds than otherwise would be provided in a nonteaching hospital and we can provide up to 10 percent more beds in teaching hospitals.

Mr. SIKES. What proportion of the Navy's medical requirements will be provided by the CHAMPUS program rather than by Navy's own medical resources?

Admiral MARSCHALL. During fiscal year 1972 the average percentage utilization of CHAMPUS, that is, average of both inpatient and outpatient care, was 29 percent of the Navy medical requirement. It is predicted that CHAMPUS utilization will continue to increase over the next several years at approximately 1 percent of the current utilization per year leveling off at about the midway point of the accredited medical facilities modernization program. Upon completion of the modernization program when naval medical facilities can favorably compete with civilian medical facilities, a 25 percent reduction of current CHAMPUS utilization is predicted, provided adequate resources, both staff and funds, are available.

## BACHELOR HOUSING

Mr. SIKES. What effect will the reduction in the size of the Navy and the All-Volunteer Force concept have on the need for bachelor housing?

Admiral MARSCHALL. The Navy's bachelor housing requirements are determined from an annual bachelor housing survey which has been conducted navywide for 3 consecutive years. The bachelor housing survey conducted in 1972 to determine valid requirements for the Navy's fiscal year 1974 program was based on force projections for fiscal year 1977. Assets were also evaluated for adequacy based on improved habitability criteria. Navy requirements are; therefore, based on projections which incorporate long range personnel reductions as well as increased habitability in keeping with the All-Volunteer Force concept.

Mr. SIKES. Does the Navy still plan to change its policy so that men can live off station and collect basic allowance for quarters rather than live in bachelor enlisted quarters? With the All-Volunteer Force, is such a policy change warranted?

Admiral MARSCHALL. The Navy's current policy of permitting personnel to live off station and collect a basic allowance for quarters rather than live in inadequate quarters is based on guidelines promulgated by the Department of Defense. DOD policy provides that only when adequate quarters are not available will commanders issue certificates of nonavailability, thereby authorizing the payment of basic allowance for quarters. The Navy is not aware of any planned change to this policy. Navy's current policy with regard to quarters assignment for personnel without dependents may be summarized as follows:

Navy permits voluntary occupancy of inadequate Government quarters by all pay grades. Pay grades 0-4 and above, by Executive Order

11157 of June 24, 1964, may elect to receive a basic allowance for quarters and live off base regardless of quality of available accommodations. Personnel are not involuntarily assigned to accommodations not meeting the assignment criteria except by reason of military or training necessity or in overseas locations for reasons of personal health, safety, or host country agreement. Involuntary occupancy of adequate assets is required to the extent necessary to utilize all such accommodations.

When accommodations meeting the assignment criteria are not available, members are authorized to live in the civilian community and be paid a basic allowance for quarters.

The Department of Defense, on May 12, 1972, promulgated a new criteria for determining adequate quarters. Implementation of this policy is to be accomplished by the Armed Forces as funds become available to pay the additional personnel that would no longer have adequate quarters and thereby are eligible to move off the station. Example: The new criteria provides that pay grades E-7 through E-9 will be provided a private bath. Few, if any, of our present adequate quarters for these top enlisted pay grades meet the new criteria. Measuring our present adequate assets with the pending new DOD criteria, we have a total deficit of 74,233 adequate spaces. The cost of additional basic allowance for quarters, if all personnel for whom the Navy does not have adequate quarters elected to move off the station, would exceed \$50 million. This estimated cost is determined by multiplying the amount of the basic allowance for quarters for each pay grade by the space deficit.

The Navy's instruction directs the area coordinators to insure that commanding officers make liberal rather than restrictive interpretations of the assignment criteria for the benefit of the individual members.

While many Navy bachelors desire to live ashore and are authorized to do so if adequate quarters are not available, they find the cost exceeds their allowance for quarters and, after a short trial period, return to the station even though quarters available do not meet the assignment criteria. It has to be recognized that the majority of our people seeking housing off the station are having to do so in high cost areas.

We are most desirous of allowing our personnel not required to live on-station to choose between on-station or off-station housing. To this end, we are continuing to review this policy, but the current budgetary restraints make further significant implementation impractical at this time.

Mr. SIKES. What is your estimate of the Navy's shortage of bachelor housing units, and how would it be affected by such a revised policy?

Admiral MARSCHALL. Upon completion of fiscal year 1973 bachelor housing construction, we estimate our bachelor housing deficiency to be 8,159 officer and 66,074 enlisted. If the 1974 program is funded as requested these figures would be reduced by 229 for officers and 12,087 for enlisted.

We would expect these deficits to drop by 20 to 25 percent if a more liberalized off-base housing policy could be implemented.

## POLLUTION ABATEMENT

Mr. SIKES. We know that Environmental Protection Agency, State, and local pollution standards are becoming more strict. Is the Navy able, at the present rate of pollution abatement project funding, to reduce the number of its violations of these standards, or is it falling behind?

Admiral MARSCHALL. The Navy, to date, has been able to keep pace with evolving Federal, State and local standards and due to the excellent support of Congress, has a program underway tailored to meet and anticipate the most restrictive standards promulgated, consistent with available technology. While the Navy has not only kept pace, but has often led in compliance with standards, much effort still lies ahead as standards are still evolving in water and air, and the impact of the noise law, Public Law 92-574, still must be assessed.

Mr. SIKES. Have there been any technological breakthroughs in shipboard waste disposal which will permit a reduction of disposal facilities ashore?

Admiral MARSCHALL. There have not been any major shipboard waste disposal technological breakthroughs to date, which will permit reduction of disposal facilities ashore. The Navy is studying its shore facilities with a view to consolidating and upgrading them to handle additional waste loads with a minimum of additional operational costs. Further, the Navy currently has underway extensive test and evaluation of several marine sanitation devices to insure their performance and reliability. To date, these devices, which are designed to treat shipboard sanitary wastes and comply with the EPA-published no discharge standards, have not proven themselves and the Navy has proceeded with the ship waste water collection-holding-transfer system wherein ships at berth will hold their wastes and transfer them ashore for treatment. It should be noted that marine sanitation devices, when developed, will have a yet to be evaluated space-weight impact on densely populated warships. The Navy is also looking at new packaging materials and techniques to reduce the volume of solid waste generated as well as installing compactors and encapsulators and developing a new generation of incinerators for various ships which will comply with air pollution requirements. Ship alterations are underway to enable ships to offload oily bilge wastes for shore treatment and the Navy concurrently is testing and evaluating state-of-the-art oil water separators, testing Navy modified commercial units and initiating a major research and development project to develop oil water separators to enable ships to keep from discharging oily waste into the seas.

## RELOCATION FROM WASHINGTON

Mr. SIKES. What are the Navy's plans to relocate personnel or facilities out of the National Capital region? That, Admiral, is one matter which has been of very great interest to this committee and, quite frankly, we haven't seen much in the way of results.

What is the Navy doing this year, if anything, to move people out of the National Capital area?

Admiral MARSCHALL. This year, Mr. Chairman, we have made firm decisions to relocate some 9 activities and 604 personnel out of the

Capital region. Continuing efforts are being made to reduce Navy space by consolidations and further relocations.

Mr. SIKES. That level, 9 activities and 604 people, is quite small. I believe you will agree. It still does not appear that you are accomplishing very much.

Admiral MARSCHALL. Sir, the staffs in Washington have been reduced by 25 percent. As a result of that we anticipate the reduction of space within Washington by a commensurate amount. We have, I hope, been able to see our way clear to the goal which Mr. Laird set of some almost 900,000 square feet of space for the Navy in the Capital area in the way of a reduction.

We do hope to continue planning along these lines but with the shore establishment realignment occupying a great deal of the attention of the Navy in this past year, I am afraid we just haven't achieved all you would have hoped for.

Mr. SIKES. Well, do you have any more to offer in the future?

Admiral MARSCHALL. Sir, I certainly hope that we can continue to plan and make an effort to reduce the size of the Navy in the Capital region.

Mr. SANDERS. Mr. Chairman, if I could interrupt for a moment, Mr. Laird, of course, took the tack as Secretary of Defense in this area of calling for a reduction in space occupied in the National Capital area. We met that cut in space by doing something that was called for, reducing the number of people, staffs and otherwise in the Washington area by roughly 25 percent over a 2-year period.

The new Secretary of Defense had it on his list as something to look at again, to reexamine it. We have been asked by the Secretary of Defense to continue to take a look at this problem.

As you are well aware, our difficulty in the Navy is that we have so much of our, in effect, field activities tied right into the headquarters activities in the Washington area.

#### TRAINING WORKLOADS

Mr. SIKES. To what extent has the reduction in the size of the Navy permitted a reduction or consolidation in the number of schools or training facilities? Can you provide for the record your estimated workloads, past, present, and future, for each of your major training facilities?

[The information follows:]

## WORKLOAD FOR MAJOR TRAINING FACILITIES

	Fiscal year—										
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
San Diego.....	17,520	14,577	12,063	12,403	12,175	11,690	11,739	11,146	10,255	11,107	
RTC.....	11,375	8,327	6,490	6,334	6,884	6,249	6,257	5,664	4,773	5,625	
SSC.....	4,653	4,866	4,231	4,859	4,266	4,416	4,457	4,457	4,457	4,457	
HC SCOL/NAVDENCEN..	1,492	1,384	1,342	1,210	1,025	1,025	1,025	1,025	1,025	1,025	
Great Lakes.....	21,999	17,963	15,257	14,195	13,772	14,622	16,024	15,234	14,045	15,181	
RTC.....	13,853	9,990	7,968	7,625	7,392	6,841	8,243	7,453	6,264	7,400	
SSC.....	8,146	7,703	7,289	6,570	6,380	7,781	7,781	7,781	7,781	7,781	
Orlando.....	2,935	3,411	3,867	4,710	5,556	6,487	8,675	9,885	9,378	10,361	
RTC.....	2,935	3,323	3,770	4,103	4,250	4,904	6,182	5,590	4,698	5,550	
RTC(W).....	1,461	1,436	1,471	454	857	1,000	1,000	1,000	1,000	1,000	
SSC.....		88	97	153	449	583	260	595	580	566	
NUCPWR.....							1,233	2,700	3,100	3,245	
Memphis.....	10,018	9,520	9,301	8,048	6,382	9,383	8,513	8,507	8,485	8,529	
NATTC.....	7,148	6,395	6,361	5,588	4,282	9,383	8,513	8,507	8,485	8,529	
Res. recruit.....	2,870	3,125	2,940	2,460	2,100						
Norfolk.....	2,326	2,490	2,299	1,722	1,633	1,779	1,970	1,970	1,970	1,970	
NAVGUIDEDMISCOL....	973	1,026	1,042	722	495	617	617	617	617	617	
Scol of music.....	442	367	388	308	439	435	435	435	435	435	
NSC.....	639	825	598	418	425	452	643	643	643	643	
AFSC.....	272	272	271	274	274	275	275	275	275	275	
Pensacola.....	4,726	5,078	3,594	2,946	2,586	3,289	3,821	3,720	4,272	4,046	
NAVCOMTRACEN.....	1,327	1,628	1,275	745	899	1,023	1,823	2,035	3,035	3,035	
Aviation training.....	3,399	3,450	2,319	2,201	1,687	2,266	1,998	1,685	1,237	1,011	

<sup>1</sup> Bainbridge.

## TURNKEY AND RELOCATABLE CONSTRUCTION

Mr. SIKES. Is the Navy satisfied with OSD guidance on the use of turnkey and relocatable construction?

Admiral MARSCHALL. Yes, sir; very much satisfied with the guidance on turnkey. As far as relocatable construction, this guidance was received last month and we are reviewing it. We see no immediate problems with it and if there are problems I am sure that we can make an accommodation with the Department of Defense there.

## COST ESCALATION ALLOWANCES

Mr. SIKES. What construction cost escalation has been used in estimating this year's program? Over what time period have you projected these costs in the fiscal year 1974 program? How have your cost estimates compared with actual costs over the past few years?

Admiral MARSCHALL. The construction cost escalation used in estimating this year's program varies based on location. We rely on each of our engineering field divisions to establish cost escalation factors based on conditions in their respective areas. For those projects estimated in the early part of our programming process, cost escalations averaged 9 to 10 percent; for those projects estimated in the latter portion of the programming cycle, the average has been 6½ to 7 percent. We make our projections from time of estimate to estimated time of award. In the past few years, our cost estimates have been slightly higher than actual cost which has resulted from a higher projected escalation than actually occurred.

## EXECUTIVE ORDER 11508

Mr. SIKES. What percentage of Navy land and what amount of acreage, if you can determine it, do you expect to declare excess as a result of the President's Executive Order 11508?

Admiral MARSCHALL. Total Navy and Marine Corps acreage is approximately 4.5 million acres, sir. Of this, nearly 4 million acres at 180 activities have been surveyed in accordance with the Executive order. As a result of these individual surveys the Navy has agreed to excess 235,000 acres.

The remaining activities are generally smaller and more compact and I might add generally located in urban areas and I think the percentage of excess may drop off in the future.

Mr. SIKES. Generally this committee has cautioned against too much zeal in disposing of land. We have had experience in land disposal and land acquisition and it happens very frequently that we need more rather than less land. There have been some unhappy experiences about excessing land too soon.

Has the Navy been given sufficient flexibility or a satisfactory degree of flexibility in deciding what land is actually needed and what can be excessed?

Admiral MARSCHALL. I think we have been given a great deal of flexibility, sir, and I don't think at this point that we have lost anything we need in the way of an operational nature.

Mr. SANDERS. Mr. Chairman, I should speak to that, I think, and point out that the Navy has been given its day in court on any piece of land that has been recommended for disposal either by us or by those making surveys.

We have absolutely no complaints in this regard.

Mr. SIKES. Very well.

Mr. SANDERS. As you are aware, the House Armed Services Committee goes over these quite thoroughly. They have held up two or three that were recommended for disposal, which we still are holding onto.

## HOUSING COST LIMITATIONS

Mr. SIKES. Are the proposed statutory cost limitations on bachelor and married housing construction adequate?

Admiral MARSCHALL. Yes, sir; I think they are. With regard to bachelor housing, we have had some difficulties with certain recent limitations. On 21 bid openings that we have had to date we have awarded 15. Six have required escalations with one of the escalations being in excess of 25 percent.

Statutory waivers have had to be obtained on two of these projects. I think as we draw near to the end of the bidding year we will see prices go up even more, taking the natural course of escalation.

Mr. SIKES. Will the proposed increases provide you with more than just enough to stay even? Will you be able to get more house than you are getting now with the new limits, or will it be about the same, or will you actually find that you are having to take less house?

Admiral MARSCHALL. I presume now you are talking about married housing, sir.

Mr. SIKES. Yes.

Admiral MARSCHALL. I think that probably we will be able to get the house we want.

Mr. SIKES. What does that mean?

Admiral MARSCHALL. In the more recent limitations up until this year we have had to drop out such things as carports, sidewalks, patios, landscaping, privacy fencing, and tot lots, such equipment, TV antennas, and what-not. I think that with the new limitations expected this year we can achieve the house which we design and get the full package as opposed to having to delete certain items which we think are highly desirable.

#### FAMILY HOUSING DEFICIT

Mr. SIKES. How much has the family housing deficit decreased as a result of pay raises and increased community support?

Admiral MARSCHALL. As a result of the recent pay increases, which caused gains in adequate community support, the net affect on the Navy's programable deficit, from fiscal year 1973 to fiscal year 1974, was a decrease of about 3,400 units.

Mr. SIKES. What is your current family housing deficit, and how much of this is overseas?

Admiral MARSCHALL. The currently projected programable deficit, after the realignments in the naval shore establishment have been effected, is 17,600 units, of which 2,200 is outside CONUS.

Mr. SIKES. How much of this deficit realistically should be met by increased construction, and how much new construction do you plan over the next 5 years?

Admiral MARSCHALL. In considering that question, it must be realized that our programable deficit is set after deducting both a 10 percent safety factor from our eligible requirements, and all of our ineligible requirements. This leaves some 35,000 personnel who actually require adequate housing but who are not included in our long-range planning. Additionally, we are currently embarking on a program to upgrade or replace many of the older units in our existing military inventory. Specifically then, in view of these factors, I believe that a new construction program of about 4,000 units annually over the next 5 years, including some replacement units, will effectively satisfy our requirements.

#### FAMILY HOUSING IMPROVEMENTS

Mr. SIKES. What is your improvements backlog? Could you spend more in this area?

Admiral MARSCHALL. The improvement backlog is approximately \$183,000,000, of which \$147,000,000 is applicable to Navy and \$36,000,000 is applicable to the Marine Corps. Navy's program for fiscal year 1974 amounts to \$10,600,000. Navy can realistically provide an improvement program which would entail an expenditure of approximately \$25 million per year.

#### HOUSING FOR INELIGIBLES

Mr. SIKES. What are your plans to house so-called ineligibles and who is an ineligible under your current procedure?

Admiral MARSCHALL. At the present time, Mr. Chairman, an in-

eligible is an E-3 or below. The 1974 programing base, as you know, was expanded to include E-4's. They are now eligibles. We in the Navy and Marine Corps are supporting a plan for the inclusion of E-1 to E-3 in future programs, and I think there is some hope of success here.

Mr. SIKES. When you say "future" are you talking about 5, 2, or 10 years?

Admiral MARSCHALL. We are pressing for it in the next year's program if at all possible.

Mr. SIKES. Will that be a realistic achievement? Even if you get them included do you have the housing for them?

Admiral MARSCHALL. At the present time we don't have fully available housing. Through your good offices we do have section 236 housing available in some areas now. We have already opened up mobile home parks. We have our housing referral office actively engaged in seeking out houses on the civilian economy and I think they are reasonably taken care of but we can certainly do a lot better.

#### HUD HOUSING

Mr. SIKES. How is the HUD military preference housing program working?

Admiral MARSCHALL. Sir, it has been very good where we have had it. We, as you know, started this program in 1971 when we were allocated 1,706 units. In 1972 we had 1,950 units, for a total of 3,656, and for 1,373 we have requested 2,125. However, there has been a moratorium and the total which we have received has been significantly less than the amount we require.

Mr. SIKES. How many have you received? Do you know? You can provide that for the record if necessary and provide also the timetable on which you have expected to receive these units had there not been a moratorium.

[The information follows:]

#### HUD SECTION 236 MILITARY PREFERENCE HOUSING

We received funding for 2,454 units. Navy deleted 202 units due to programing changes, and we expected occupancy of the 1,000 unit balance of the fiscal year 1972 units caught in the moratorium during the time frame of June-September 1974. Occupancy of the 2,125 units requested for fiscal year 1973 was expected during January-March of 1975.

Mr. SIKES. Of course, we understand the problem of the moratorium.

There is in addition some question as to the effect of the higher pay scale on the eligibility of personnel. It has been indicated there may be a need to change the eligibility pattern either by designating numbers of individuals among those ineligible for on-base housing or by raising the statutory limits under which they participate.

Does the Navy have any suggestions for legislative changes to allow better use of this program?

Admiral MARSCHALL. Sir, if you don't mind I would like Captain Reed, who is our housing expert, to answer this question.

Mr. SIKES. We will be glad to have any comments you want to make about this program, what future it appears to have, assuming the moratorium will be decided favorably for some housing of this

general type. Also, whether there will be a need for legislation so that you can continue to use it.

Captain REED. Sir, the 2,125 units we requested were requested with the understanding of the new maximum allowable housing code. Of course, you know that the eligibility is varied by location, in accordance with the local pay scale. I think that legislation which set a range, say such as an E-3, as eligible regardless of his pay state or his family state would be very useful because our E-3's typically have a wife who is working and we do have trouble with 236 because the kid moves in, his wife goes to work, and he is no longer eligible, this type of situation.

Mr. SIKES. Are there questions on the Admiral's statement?

#### PROVISION OF FAMILY HOUSING

Mr. DAVIS. Yes; we have been discussing this family housing thing in a rather general way. I think it would be helpful to me if you could give us a rundown of the alternatives available to you.

You see a family housing deficiency in X area. What are the alternatives open to you under existing law to meet that deficiency and why would you decide to go one way or another way, as a general proposition, in handling it?

Admiral MARSCHALL. First of all, sir, when you talk about a family housing deficiency, it means that you have already exhausted the available housing on the local market which is within the means of the serviceman.

Then you eliminate the lower pay grades, as I said, the E-3's and below, and you allow yourself, depending on the area, only somewhere between 90, 95 percent, sometimes less, of this deficiency, and when you have done all this you are talking about considerably lower numbers of requirements than the true requirement which would exist if you considered everyone.

Then you have several ways of skinning the cat at this time. We have a program of rental guarantee housing overseas; we have a leasing program on the local community, both in and out of the United States; and we have the construction of quarters by one means or another.

We have had the Wherry, the Capehart, and the normal Milcon type appropriation in the past.

As far as the rental guarantee, I find this difficult to equate to a local situation. As far as leasing is concerned, we have been very successful in some areas in alleviating temporary housing problems.

To use as an example the chairman's own home district, Pensacola, we leased an apartment complex there for a surge period and were able to get rid of it after we didn't need it. This is particularly good where we don't know the exact future of the business and we must wait for the permanent satisfaction of the requirements.

But in the long run for a stable community building public quarters I think is probably the best answer, as I say, after we have considered all the community assets.

Mr. DAVIS. What alternatives do you have available to you for actually building quarters?

Admiral MARSCHALL. The only available means we have of building quarters is by getting them from the Congress. We have no other way of building them.

## TURNKEY

Mr. DAVIS. You do have turnkey, for instance.

Admiral MARSCHALL. Oh, I beg your pardon, sir. Is that what you mean?

Mr. DAVIS. Yes.

Admiral MARSCHALL. I am sorry. In the past, as you know, we issued plans and specifications and took bids. In recent years we have gone to this turnkey process of buying our housing and have found it extremely successful. I would say—I don't have the precise figures at the moment but we have gone to something between 50 and 80 percent on our turnkey housing and have had good results to date both from the standpoint of getting the projects within the money and getting a quality product.

The turnkey thing has turned out extremely well. We are very, very happy with it.

We anticipate in this year's program 75 percent of the housing which we plan to do will be turnkey.

Mr. DAVIS. You have the turnkey program. What else?

Admiral MARSCHALL. Normal bidding practices whereby we issue plans and specifications and bid the job on the market. Those really are the only basic two.

Overseas I think you have heard of us leasing housing.

Mr. DAVIS. Yes. You talked about that. What about mobile homes? Does the Navy use those?

Admiral MARSCHALL. We have in the past built some pads for mobile homes, but we don't have the actual units themselves. We provide facilities for those who do own them.

Mr. DAVIS. And they are individually owned by the serviceman?

Admiral MARSCHALL. Yes, sir.

Mr. SANDERS. And we have built a large number of pads, sir. The Air Force has done the same thing at various locations on base generally to meet this requirement. We own none except a few left over from emergency back in Korea, and then I believe some of the services have them on Kwajalein.

Mr. McEWEN. Admiral, you expressed satisfaction with the turnkey approach for housing. This is new to me, to get involved in this matter of turnkey as opposed to conventional plans, specifications, and bids. I want your observation. What are the advantages of turnkey?

Admiral MARSCHALL. One of the big advantages as I see it is that we can go to a homebuilder, for example, who has been in the business of developing large tracts of homes on his own. We can take advantage of a proven design which he has had in the past, his ability to draw on the commercial market for all the appurtenances, the whole broad spectrum of equipment and supplies within the house, from a large organization, and we are dealing with housebuilders for houses as opposed to the general construction industry which is prone to bid everything we issue. There is a big difference.

The housebuilders are a different type of constructor, specialized in that area, and they do quite well at it.

Mr. McEWEN. Normally when you seek proposals on a turnkey project, how many proposals would you receive for one project?

Admiral MARSCHALL. Here again, sir, it depends on the size of the project and the location in which we happen to be operating, but on a statewide project of the order of let us call it 500 units, we would have competition of anywhere from 8 to a dozen large firms.

Mr. McEWEN. For one project?

Admiral MARSCHALL. For one project.

Mr. SIKES. Gentlemen, let us suspend.

[A brief recess.]

Mr. SIKES. Would you proceed, Mr. Davis.

Mr. McEWEN. Mr. Chairman, if I might just conclude, I was asking the admiral about turnkey.

You said, I believe, that 50 to 80 percent of your family housing is built under turnkey?

Admiral MARSCHALL. I said in the 1974 program we hope to put about 75 percent of the awards out under turnkey arrangements.

Mr. McEWEN. The others will be conventional plans and specifications?

Admiral MARSCHALL. Yes, sir.

Mr. McEWEN. Bidding. And in what areas and for what reason will you go to conventional bidding rather than turnkey?

Admiral MARSCHALL. In some areas it is necessary for us to use site adaptations of previous jobs for compatibility's sake. In some areas the jobs are small enough so we feel they should be bid on the open market and there is a construction market there available in which to be bid, but by and large we have found that this turnkey method is much more satisfactory for housing jobs.

Mr. McEWEN. Have you ever encountered the situation, Admiral, in an area where there was not a great deal of homebuilding or development of housing projects, where therefore you didn't have homebuilders who have plans in their inventory, where contractors, if they were to make a proposal, have to go out and employ an architect and draw plans specifically for that project? Have you run into that situation at all?

Admiral MARSCHALL. I personally have not, sir, but in a case of that sort we certainly would go conventional. It is not our idea to go to the industry and cause a great deal of expense in preparing proposals just to satisfy our desire to go one way or another.

Inevitably we examine the market when we go to bid on any of our work, housing or otherwise, so that should this case occur we certainly would just go to conventional procedures.

Mr. McEWEN. Then in most of your turnkeys, those who are making the proposals have plans already on hand, or possibly with some modification, for your project?

Admiral MARSCHALL. One of the criteria is that this fellow should have built this particular house before he submits it to us and the result there is that instead of developing, reinventing the wheel, so to speak, he does a little architect treatment, a little site development, and is able to give us a package.

Mr. McEWEN. Thank you very much.

Mr. SIKES. Any further questions, Mr. Davis?

Mr. DAVIS. No.

Mr. SIKES. Very well. Thank you, Admiral.

STATEMENT OF ASSISTANT QUARTERMASTER GENERAL (FACILITIES),  
MARINE CORPS

We are ready now to hear Brig. Gen. M. T. Jannell discuss the military requirements for the Marine Corps for the fiscal year 1974 program.

I am advised, General Jannell, that this will be your last regular appearance before this subcommittee before reassignment. Is that correct?

General JANNELL. Yes, sir.

Mr. SIKES. Let me wish you well in what you are doing. You have been a valiant witness in your appearances here. We have been very, very appreciative of your help to the committee and the capable testimony that you have given us.

We will insert your biographical sketch in the record.

[The biographical sketch follows:]

BRIG. GEN. MANNING T. JANNELL, USMC, ASSISTANT QUARTERMASTER GENERAL (F. & S.), HQMC

Manning Titcomb Jannell was born January 17, 1921, in Farmington, Maine. He graduated from high school in 1940 in Weymouth, Mass., and attended Valley Forge Military Academy, Junior College for 2 years. He later received a BA degree in military science from the University of Maryland.

He enlisted in the U.S. Navy Reserve in March 1942, and was subsequently assigned to flight training at Corpus Christi, Tex. Upon graduation in April 1943, he was designated a naval aviator and commissioned a second lieutenant in the Marine Corps Reserve. Immediately following flight training, Lieutenant Jannell was assigned as an instructor at the Naval Air Training Command, Corpus Christi, Tex. Lieutenant Jannell sailed for Okinawa in 1944 where he served as electronics officer with Marine lighter Squadron 441.

Returning from Okinawa, Lieutenant Jannell was assigned to the Marine Corps Air Infantry School, Quantico, Va., where he was promoted to captain. Upon graduation, Captain Jannell returned to Corpus Christi, Tex., as a flight instructor.

Assigned next to Headquarters Marine Corps, he served as a staff officer with the Division of Aviation. Captain Jannell saw action in Korea while serving as a flight officer with Marine All Weather Fighter Squadrons 542 and 513, 1st Marine Aircraft Wing.

In September 1951, Captain Jannell was ordered to Headquarters, Air, Fleet Marine Forces, Pacific, Marine Corps Air Station, El Toro, Calif., and assumed the duties as Officer in Charge, Flight Section and Staff Pilot. During this assignment, he was promoted to major. Returning to Korea in 1954, he commanded Marine Fighter Squadron 311 until mid-1955. For the next 3 years, Major Jannell served as an instructor, Marine Corps Schools, Quantico, Va. During this period, he attended and graduated from the University of Maryland under the college degree program. Major Jannell completed helicopter flight training in 1959 and served as executive officer, and subsequently, commanding officer of Marine Helicopter Squadrons 363 and 364. He was promoted to lieutenant colonel in July 1962 while serving as commanding officer, Marine Helicopter Squadron 364.

Colonel Jannell graduated from the Armed Forces Staff College in June 1963 and then was assigned duty in Europe where he served as operations staff officer, Headquarters, U.S. European Command, Camp de Loges, France. In August 1966, he reported to the Republic of Vietnam for duty as the logistics officer (S-4), Marine Aircraft Group 16, and later, as commanding officer, Marine Helicopter Squadron 164, 1st Marine Aircraft Wing.

Returning to the United States in late 1967, he was assigned duty on the staff, Armed Forces Staff College, Norfolk, Va. In this billet, he was promoted to colonel, and later assigned to the Industrial College of the Armed Forces, Washington, D.C. Graduating in June 1970, he reported again to Headquarters, Marine Corps, for duty. Colonel Jannell served as Director, Facilities Division, in the Office of the Assistant Quartermaster General (Facilities and Services). Upon receiving his advancement to brigadier general, August 5, 1971, he was assigned as the Assistant Quartermaster General (Facilities and Services).

His personal decorations include the Distinguished Flying Cross with one Gold Star in lieu of a second award, the Bronze Star Medal with Combat "V," the Air Medal with bronze numeral "17," the Joint Service Commendation Medal with Oak Leaf Cluster, the Navy Commendation Medal, and the Purple Heart Medal.

General Jannell and his wife, the former Lenora B. Jones of Weymouth, Mass., have four children: Lenora Kay, Joseph M., Richard E., and Angela J. His parents are Mr. and Mrs. Joseph L. Jannell of South Weymouth, Mass.

General JANNELL. Thank you, Mr. Chairman.

Mr. SIKES. Would you proceed?

General JANNELL. Mr. Chairman, gentlemen, it is my pleasure to again have the opportunity to present the Marine Corps military construction program. This year's request reflects our continuing major effort to provide new and improved personnel support facilities. In addition, construction dollars for operational, utility, and combat training oriented facilities are requested. The Marine Corps appropriations request for fiscal year 1974 military construction totals \$54,844,000. Exclusive of our aforementioned request is \$7,550,000 for pollution abatement projects at Marine Corps installations.

In addition to the appropriation dollars requested, the Marine Corps will request authorization only for the acquisition of interests in lands contiguous to the Marine Corps Air Station, Yuma, Ariz., to be accomplished through exchange of excess Department of Defense real estate. The acquisition would provide encroachment protection of the air station which would assure the unimpaired mission accomplishment in addition to protecting the potential homeowner against overflight hazards and high noise levels.

The backbone of our \$54,844,000 request before this committee is concentrated in our concern to satisfy deficiencies in bachelor enlisted quarters and other personnel support facilities. The remainder will provide certain urgent operational facilities essential to our readiness posture, and for transfer of our inventory control point, Philadelphia, Pa., to Marine Corps Supply Center, Albany, Ga. Our personnel support projects represent 57 percent of this \$54.8 million. And \$25.4 million will provide room configured housing facilities and three modern messhalls for our bachelor enlisted marines. Additionally, \$5.9 million is requested for a gymnasium, commissary, and a dispensary, which will provide needed recreational and personnel welfare facilities. The Marine Corps has dedicated a major portion of its construction efforts to bachelor housing facilities, for the past 5 fiscal years. We are convinced that the provision of modern and reasonably comfortable living accommodations for our bachelor marines is in the best interest of both the marine and the corps. In view of this conviction, we will continue to place personnel support projects to the foreground until we feel we have provided a reasonably sound functional physical plant for the needs of our men and women. The remaining \$23.5 million request provides \$2.7 million for air and ground operational facilities, \$9.1 million for utilities, \$0.07 million for cold storage warehouse, \$1.7 million for roads and vehicle maintenance facilities, \$0.06 million for real estate necessary for ordnance storage, and \$3.5 million for a combat training complex and applied instruction facilities. Additionally, \$5.2 million is required for facilities at Marine Corps Supply Center, Albany, Ga., to accept movement of the inventory control point from Marine Corps supply activity, Philadelphia, Pa.

Gentlemen, that summarizes our program by facility category, which we believe to be a well-balanced program. I shall attempt to answer any questions you may have.

Mr. SIKES. Thank you, General Jannell.

Mr. Secretary, soon after you joined the secretariat in the Navy you called to my attention some deficiencies in Marine Corps facilities which were disturbing you. I was surprised to find that the Marines did not seem to be keeping abreast of the other services in the replacement of older inadequate facilities.

I don't know whether that situation has improved or not. The Marine share of the budget has never been particularly large. Are you satisfied with the present progress?

Mr. SANDERS. Yes, sir. The emphasis the commandants have placed on replacing and modernizing their personnel facilities, both General Chapman and now General Cushman, is beginning to pay off very rapidly.

I would ask General Jannell to comment with reference to the deficiencies in this area but there has been a very marked improvement.

Mr. SIKES. General Jannell, do you want to comment on the general progress and on the elimination of the deficiency?

General JANNELL. Sir, the deficiency in our total personnel support facilities currently equates to \$360 million. Of this total, \$292 million relates to bachelor housing. At a level of \$33 million per year it is estimated to take 16 years to meet our deficiency.

This projection is based on a 6-percent construction cost escalation and maintains current construction standards.

#### MARINE CORPS RECRUITMENT

Mr. SIKES. Is the Marine Corps meeting its All-Volunteer Force recruiting objectives?

General JANNELL. Quantitative requirements are currently being met and we anticipate continuation of this trend in fiscal year 1974. The Marine Corps is chiefly concerned today with improving the quality of the enlisted accessions.

Mr. SANDERS. Let me point out, sir, if I could elaborate that, several months ago the Commandant took action to increase the standards governing the recruit he would take into the Marine Corps. We have been able in these months to meet the quotas with the higher standards.

#### OFF-BASE BACHELOR HOUSING POLICY

Mr. SIKES. What is the Marine Corps policy on off-base housing for bachelor personnel?

General JANNELL. In general terms the Marine Corps policy is that officers and staff noncommissioned officers will rely on the civilian community as the primary source of housing and that sergeants and below will normally be housed on board the installation.

Mr. SIKES. Is this policy applied uniformly at all bases?

General JANNELL. Yes, sir, it is. This policy is applied uniformly at all bases. However, wide differences in both on-base and off-base housing as well as differences in contingency missions of units will result in variations in assignment of personnel from one installation to another.

## REALINEMENTS OF MARINE CORPS FACILITIES

Mr. SIKES. Is the Marine Corps planning realignments which will eliminate or consolidate facilities? Has there been a realignment of Marine Corps forces worldwide as a result of our Southeast Asia agreement? Does this change your facilities requirements?

General JANNELL. The Marine Corps continues to study and reevaluate its alignments and posture in light of both qualitative and quantitative factors. At present our plans reflect the relocation of the inventory control point from Philadelphia to Marine Corps Supply Center, Albany, Ga.

In regard to Marine Corps involvement in Southeast Asia, during the Vietnam buildup, the Marine Corps did not expand its permanent base posture. Troop strength increases were positioned in combat zones and were absorbed as transient peak capacities at our existing installations. In the disengagement period, reductions in forces generally paralleled withdrawal of Marine units from combat areas. As a result of absorbing strength reductions in this manner, our permanent facility requirements have remained stable during the disengagement from Southeast Asia.

Mr. SIKES. What requirements do you anticipate as a result of new missions or new weapons systems?

General JANNELL. The Marine Corps does not anticipate any major facility requirements as the result of change in missions or weapons systems that cannot be accommodated in our existing installation inventory.

## EXECUTIVE ORDER 11508

Mr. SIKES. Has the Marine Corps had any more serious problems with Executive Order 11508 actions?

General JANNELL. No, sir; it has not.

Mr. SIKES. Do you anticipate any in view of the present surveys and discussions of surplus action?

General JANNELL. No, sir. The total acreage which has been exceded as a result of this Executive Order 11508, in addition to that leased to the State of California, Camp Pendleton, is 34,461 acres, which represents 3 percent of our total inventory.

Mr. SIKES. There was some discussion about the excessing of some of the land at Quantico. Has that been dropped?

General JANNELL. Yes, sir; we have exceded almost 5,000 acres at the Marine Corps Development and Education Command (MCDEC) at Quantico.

Mr. SIKES. Is that a sound action?

General JANNELL. Yes, sir; we believe so.

## COMPATIBLE USE ZONES

Mr. SIKES. You have in this budget a request to establish a compatible use zone at Yuma. Are there other instances where you have problems on compatible use zones around air installations or other installations?

General JANNELL. In our air use zones surrounding our air installations we have not been successful to date in implementing our land

exchange authorization at Marine Corps Air Station El Toro and Marine Corps Air Station, helicopter, at Santa Ana.

Mr. SIKES. Those two are still up in the air; is that correct?

General JANNELL. That is correct, sir. We are making progress with the Hunters Point land but as yet we have not made any finalized agreement on that, sir.

Mr. SIKES. Do you anticipate a change in that situation, or does the problem look insurmountable?

General JANNELL. There is a possible break on this. However, we are now looking at this whole project in detail in order to make this determination.

Mr. SIKES. Are there other instances than these where you have a problem with use zones?

General JANNELL. No, sir.

Mr. SIKES. You seem to be getting a better grip on the housing problem. What is your next most serious deficiency in Marine Corps facilities?

General JANNELL. In our total personnel support facility program, I think we are getting a handle on the bachelor enlisted housing but I would suggest possibly the other personnel support facilities such as the mess halls, and our recreational type facilities. We have a gymnasium in this year's program, as well as a commissary. I don't really see a big problem in that area, though, sir. Those that I have mentioned are in the personnel support area; however, we recognize other deficiencies in the operational area, as well as in aging utility systems.

Mr. SIKES. General Jannell, thank you. I believe we should turn to base realignments.

#### NAVAL SHORE ESTABLISHMENT REALIGNMENT

Mr. SANDERS. Mr. Chairman, what I would like to do is very quickly to give you a general picture of the Navy's recent shore establishment realignment action.

Mr. SIKES. All right.

Mr. SANDERS. What I would propose to do is give you the background of the problem as we saw it, criteria we used generally for our actions, touch upon the two major areas of homeporting and the Naval shipyards, and answer any specific questions you might have.

The Navy witnesses appearing before you in connection with the MILCON program will be prepared to speak to any specific projects or any specific installations you might want to discuss.

**FORCE LEVELS VERSUS INSTALLATIONS**  
**COMPARATIVE REDUCTIONS IN FORCE LEVELS VERSUS INSTALLATIONS**

Forces	Fiscal year—		
	1964	1969	1974
Active fleet ships.....	917	926	523
Carriers.....	24	22	15
Active fleet aircraft.....	5,014	5,051	3,956
Reserve aircraft.....	763	802	447
Installations:			
Active ship home port complexes.....	10	10	10
Active aircraft basing complexes.....	17	17	17
Reserve aircraft airfields.....	13	12	7
Naval shipyards.....	11	10	10
Naval air rework facilities.....	7	7	7
Naval hospitals.....	30	30	30

Mr. SANDERS. Actually, sir, here is how we found ourselves some time ago: We had reduced the Navy drastically, from 917 ships in 1964 to 523 in fiscal year 1974. Carriers dropped from 24 to 15, and the 15 heading downward in our out-year planning. The same way with reference to aircraft, 5,000 to under 4,000 and reserve aircraft from 763 to 447, basically, with little or no reduction in shore stations. Now it is perfectly obvious that in an era of fiscal constraints we were floating with a very significant overhead in our naval shore establishment. Mr. Packard referred to the shore establishment problem on several occasions, as far as the Department of Defense was concerned, while he was Deputy Secretary of Defense. The Navy has had a desire for some time to bring down the size of its Shore Establishment in line with the reduced size of the fleet.

I might point out, if you are interested in statistics, that this represents a reduction of about 42 percent in the number of ships, about 21 percent in the number of aircraft, and something like 15 percent reduction in manpower.

**ASSUMPTIONS**

*Charter*

- Tempo of operations not to exceed 1 in 3 rotation
- Minimum conus dispersal
- Achieve early savings by accelerated actions
- Maximum reductions consistent with fleet support

*Other*

- Shipyards and homeports in close proximity
- Personnel support policies will maintain
- Navy operational and economic factors govern

Mr. SANDERS. We established certain criteria for a look-see at this total Shore Establishment. This has been going on in one form or another since 1969. It is not something hastily put together. These are the basic assumptions that we had, including trying to maintain the tempo of our operations so we get our traditional 1-in-3 rotation and let the man on the ship spend time at home with his family.

We made the sacrifice of minimum dispersal in continental United States. This did not present a problem to us. Obviously in our situation with fiscal constraints and with this problem having lagged for so many years, we did push for the achievement of early savings by accelerated actions to the maximum extent that we could. Of course,

we continued to put fleet support first and made maximum reductions consistent with fleet support.

We continued the policies with which you are familiar of trying to keep our shipyards and homeports in close proximity, again to hold down a permanent change of station costs and to keep the men close to their families and to their normal sphere of operation.

We did continue to maintain our personnel support policies to the best of our ability and, finally, of course, to have naval operational and economic factors override almost anything.

#### SHIP HOMEPORT CRITERIA

At least two homeports on each coast capable of homeporting Forrestal and later class aircraft carriers.

At least two homeports on each coast capable of homeporting surface combatants.

At least two homeports on each coast capable of homeporting submarines.

At least two homeports on each coast capable of homeporting auxiliaries.

At least one homeport on each coast capable of homeporting amphibious ships.

FBM submarine training support on each coast.

Mr. SANDERS. Now, let me discuss first, if I might, our homeport criteria, and the way we took a look at the homeport situation.

We found that we needed, after careful review of our operational requirements and the size of our projected Navy, at least two homeports on each coast capable of homeporting the *Forrestal*, the *Enterprise*, or the later class attack carrier, the *Nimitz*. We wanted two homeports on each coast capable of homeporting our surface combatants, two on each coast capable of homeporting submarines, two capable of homeporting the service force or the auxiliary fleet, and one on each coast capable of homeporting the amphibious ships, work with the Marines, and one on each coast for fleet ballistic missile training.

Mr. DAVIS. Was there any doubling up of those?

Mr. SANDERS. Yes. I will show you these.

These were basically the criteria we used and I will show you what we did

EAST COAST HOME PORTS—NUMBER AVAILABLE VERSUS NUMBER REQUIRED

	Required	Available	Narragansett Bay	New London (Groton)	Norfolk	Charleston	Mayport	Key West
Carriers.....	2	3	X		X		X	
Surface combatants.....	2	5	X		X	X	X	X
Submarines.....	2	4		X	X	X		X
Auxiliaries.....	2	6	X	X	X	X	X	X
Amphibious.....	1	1			X			
FBM submarine training.....	1	1				X		

#### EAST COAST HOMEPORTS

Mr. SANDERS. This is the east coast homeport matrix worked out in very short order applying those criteria. You will see that for the carriers, we required two homeports and we had three; the surface combatants, two against five; the subs, two against four; auxiliaries, two against six, and the amphibious force and FBM training support, we had one base for each one.

You can see that the driving factor in our homeporting is the carrier, particularly the large *Nimitz*-class and the *Forrestal*-class carriers.

We had three carrier ports, Narragansett Bay, Norfolk and Mayport.

Any two of these three locations had the capability together with Charleston of meeting the requirements for surface combatants, submarines, and auxiliaries.

I think that answers your question.

Mr. DAVIS. Yes.

Mr. SANDERS. We looked very carefully at the entire picture. Norfolk is very much a must for us, Hampton Roads is a large area with considerable Navy investment.

Actually, what we looked at in the final analysis, really was Narragansett Bay and Mayport.

EAST COAST HOMEPORTS SHIPS/MIX FISCAL YEAR 1969 (POST REALIGNMENT)

	Nlon/Groton (fiscal year)		Norfolk (fiscal year)		Charleston (fiscal year)		Mayport (fiscal year)	
	1969	1974	1969	1974	1969	1974	1969	1974
Ships/mix (total).....	55	43	162	116	71	59	34	29
Carriers .....	0	0	5	4	0	0	3	2
Combatants .....	1	0	48	44	16	24	23	17
Auxiliaries .....	4	3	46	23	34	11	8	10
Amphibious .....	0	0	53	30	0	0	0	0
Submarines .....	50	40	10	5	21	24	0	0

Mr. SANDERS. Looking at this, we made a conscious decision to take the fleet out of Narragansett Bay, consolidate submarine work at New London-Groton, Norfolk, Charleston, which is a must because of our capability of our fleet ballistic-missile operations there as well as the submarine, and then Mayport with its carrier complex.

It is obvious that our problem was with reference to Mayport versus Narragansett Bay. We looked very carefully again at the cost involved in this respect. We found that we had taken the ASW carrier, the so-called CVS, out of Narragansett Bay. We then decided to take the CVS's completely out of the Navy. So we are projecting no CVS-ASW-type carrier. Our entire concept is based on turning the large attack carrier into what we call a CV.

Narragansett Bay and Quonset Point will not handle the large carrier. We estimate a cost of something like \$25 million in order to dredge the channel, build the piers, and other necessary facilities at Quonset Point in order just to provide the facilities for the large attack carrier.

In addition, we like to have near the carrier a master jet field or a jet-capable field. The carrier aircraft can offload, practice, do their training while the carrier is in port.

The naval air station at Quonset, due to geographical problems and other restrictions, is impossible to expand into the capability to handle our modern high-performance jet attack aircraft. So what we have done is consolidated on the east coast at Norfolk, Charleston, and Mayport. We have had to increase some of the ships numbers at

Charleston, some of the destroyers at Norfolk in order to meet our total requirement.

Now the question is often asked: All right, you took the carriers out of Narragansett Bay some time ago, why take the other ships out?

Simply stated, we have enough facilities in existence with some slight, slight construction at Norfolk, Charleston, and Mayport to handle all of the surface combatants and the auxiliaries now stationed in Narragansett Bay. So, rather than keep the large overhead necessary to support the surface combatants in Narragansett Bay other than carriers, we moved them and dispersed them to Norfolk, Charleston and a few down in Mayport. This basically eliminated the overhead.

Of course, when we did this, the requirement for many of our facilities in the Boston area, the shipyard, to a lesser extent the hospital and other things, also went by the board.

#### WEST COAST HOMEPORTS

##### WEST COAST HOMEPORTS—NUMBER AVAILABLE VERSUS NUMBER REQUIRED (PREREALIGNMENT)

	Number required	Available	San Diego	Long Beach	Alameda	Pearl Harbor
Carriers.....	2	3	×	×	×	
Surface combatants.....	2	3	×	×		×
Submarines.....	2	2	×			×
Auxiliaries.....	2	4	×	×	×	×
Amphibious.....	1	2	×	×		
FBM submarine training.....	1	1		×		×

Mr. SANDERS. Now, if I could turn to the west coast for the moment. We see virtually the same situation. We had homeports at San Diego, Long Beach, Alameda, in San Francisco Bay and Pearl Harbor. Again we had the same criteria, same problem; two carrier homeports with three available, two surface combatant homeports with three available, two submarines with two available, two auxiliaries with four available; one amphibious with two available; and one, with one available for FBM training.

We examined this in exactly the same fashion as we did the east coast, having the capability to consolidate all of the activities on the west coast, exclusive of Pearl Harbor, into two locations.

##### WEST COAST HOMEPORTS SHIPS/MIX FISCAL YEAR-1969-74 (POST REALIGNMENT)

	San Diego, fiscal year—		Alameda, fiscal year—		Pearl Harbor, fiscal year—	
	1969	1974	1969	1974	1969	1974
Ships/mix (total).....	187	120	7	9	89	58
Carriers.....	2	2	4	5	0	0
Surface combatants.....	70	46	0	0	36	21
Submarines.....	19	15	0	0	24	21
Auxiliaries.....	43	24	3	4	29	16
Amphibious.....	53	33	0	0	0	0

Mr. SANDERS. We did this by eliminating the homeporting in Long Beach and consolidating basically at San Diego, Alameda in the bay area, and with a slight buildup still over in Pearl Harbor. You

can see that this gives us a large number of ships down at San Diego. We have been criticized, and questioned about how the Navy can get that many ships homeported in San Diego.

I want to point out that our projection for San Diego shows 67 less ships homeported there under the realignment package than we had in fiscal year 1969. We anticipate no problem.

[Supplemental information follows:]

Of the 120 ships which will be homeported in San Diego, 31 require deep draft berthing space when in port. Eventually, five of these ships will be nuclear powered surface ships, so the new pier will be designed to support nuclear ships though the majority of its requirement is for nonnuclear deep draft ships.

Mr. SANDERS. There are certain military construction requirements, particularly at San Diego, that you will see in here which are necessary in order to accomplish this, particularly with reference to the homeporting of the nuclear noncarrier surface fleet at San Diego. There is a large pier required.

#### NAVAL SHIPYARDS

##### NAVAL SHIPYARD CRITERIA

Two naval shipyards on each coast for carrier overhaul/drydocking; one naval shipyard on each coast for surface nuclear ship overhaul; three naval shipyards on each coast for nuclear submarine overhaul; three naval shipyards on each coast for sophisticated electronics, fire control.

Drydocks; utilize facilities; homeport.

Mr. SANDERS. Taking a look at the shipyards, if I might, another large area of controversy. We examined our shipyard requirements.

Could I go off the record for a moment, sir?

Mr. SIKES. Yes.

[Discussion off the record.]

Mr. SIKES. Proceed.

Mr. SANDERS. In looking at our shipyard requirements, if I may mention the criteria that we worked out on what was required: Two Navy shipyards on each coast for carrier overhaul and drydocking capability, feeling that we had to have two versus one, in case there was an accident and closed down one; one on each coast for surface nuclear ship overhaul; three on each coast for nuclear submarine overhaul, primarily because of the buildup, and three on each coast for our sophisticated electronics, fire control, other things that we have on our surface forces.

We had the other criteria for drydock problems, utilizing existing facilities which are available with a minimum of military construction and, of course, trying to locate the shipyard as close to a homeport as we could get with these other criteria overriding, as you will see in just a moment.

## EAST COAST NAVAL SHIPYARDS (PREREALINEMENT)

	Number required	Charleston	Norfolk	Philadelphia	Boston	Portsmouth
Carrier overhaul/drydock.....	2	-----	1 X	3 X	-----	-----
Surface nuclear ship overhaul.....	1	-----	X	X	-----	-----
Nuclear submarine overhaul.....	3	X	X	X	-----	X
Sophisticated electronics fire control.....	3	3 X	4 X	5 X	6 X	7 X
Carrier drydocks (Forrestal class/CVN).....	2	-----	1	2	-----	-----
Other large drydocks.....	11	3	3	5	3	2
Total drydocks.....	20	6	7	5	5	3

- 1 Nuclear.  
 2 Nonnuclear.  
 3 AAW, ASW, SUB, SSBN.  
 4 AW, AAW, ASW, SUB.  
 5 AW, AAW.  
 6 AAW, ASW.  
 7 SUB, SSBN.

Mr. SANDERS. This basically is what we had before the realignment.

With reference to the carrier overhaul, two required, one present at Norfolk and, of course, Philadelphia, with a nonnuclear capability there. Surface nuclear ship overhaul, one at Norfolk, the nuclear submarine overhaul, three required, with three, Charleston, Norfolk, and Portsmouth.

Then the sophisticated electronics and fire control, three required, with basically all five in whole or in part capable of meeting the requirements.

The carrier drydocks, of the *Forrestal* class other than some of the others, the large ones, you see the explanation there.

## EAST COAST NAVAL SHIPYARDS (POST REALINEMENTS)

	Number required	Charleston	Norfolk	Philadelphia	Portsmouth
Carrier overhaul drydock.....	2	-----	1 X	3 X	-----
Surface nuclear ship overhaul.....	1	-----	X	X	-----
Nuclear submarine overhaul.....	3	X	X	X	-----
Sophisticated electronics fire control.....	3	3 X	4 X	5 X	6 X
Carrier drydocks (Forrestal class/CVN).....	2	-----	1	2	-----
Other large drydocks.....	11	3	3	2	2
Total drydocks.....	20	6	7	5	3

- 1 Nuclear.  
 2 Nonnuclear.  
 3 AAW, ASW, Sub, SSBN.  
 4 AW, AAW, ASW, Sub, SSBN.  
 5 AW, AAW, ASW.  
 6 Sub, SSBN.

Mr. SANDERS. Then of course our other large drydocks available. A total of some 20 drydocks required with 26 available.

We again examined very carefully our capability of putting the workload and the requirements of these shipyards into the minimum number essential. As a result of that, bearing in mind our homeporting, we dropped Boston, retained our capability at Charleston, Norfolk, Philadelphia, with Portsmouth of course being a peculiar submarine yard.

This of course dropped Boston out of the east coast.

## WEST COAST NAVAL SHIPYARDS (PREREALIGNMENT)

	Number required	Long Beach	Hunters Point	Mare Island	Puget Sound	Pearl Harbor
Carrier overhaul/drydock.....	2	1 <sup>1</sup> X	1 <sup>1</sup> X		2 <sup>2</sup> X	2 <sup>2</sup> X
Surface nuclear ship overhaul.....	1			X	X	X
Nuclear submarine overhaul.....	3			X	X	X
Sophisticated electronics fire control.....	3	2 <sup>3</sup> X	1 <sup>4</sup> X	1 <sup>5</sup> X	2 <sup>5</sup> X	2 <sup>6</sup> X
Carrier drydocks (Forrestal class/ CVN).....	2	1	1		2	1
Other large drydocks.....	11	3	2	3	3	4
Total drydocks.....	24	6	6	5	6	5

<sup>1</sup> Nonnuclear.

<sup>2</sup> Nuclear.

<sup>3</sup> AAW, ASW.

<sup>4</sup> AW, AAW, ASW.

<sup>5</sup> AW, Sub, SSBN.

<sup>6</sup> AAW, ASW, Sub.

Mr. SANDERS. Going to the west coast, we have the same type of situation, but a little more complicated in that we had capability at Long Beach, and Hunters Point in the Bay area, Mare Island a submarine yard with a nuclear surface capability, also in the Bay area, Puget Sound up in the Seattle area and of course Pearl Harbor over here. Again it is perfectly apparent from these figures that we had additional, excess capability in our shipyard plants on the west coast.

We examined very carefully this entire matter. Mare Island, peculiarly submarine and therefore very much required; Pearl Harbor, because of its forward position, the ability to homeport the fleet there, the obvious advantage, pretty well set; Puget Sound, a nuclear capability with the carriers up there, a capability also for nuclear FBM submarine overhaul, also with the Trident program and all these other things beginning to go in.

We really got down to Long Beach versus Hunters Point, or we were really talking nonnuclear surface ship drydock.

After a great deal of analysis, that we can go into as much as you like, we made a decision to close Hunters Point and maintain the shipyards as you can see at Long Beach, Puget Sound on the west coast, with Mare Island continuing as a submarine yard and Pearl Harbor out here.

## WEST COAST NAVAL SHIPYARDS (POSTREALIGNMENT)

	Number required	Long Beach	Mare Island	Puget Sound	Pearl Harbor
Carrier overhaul/drydock.....	2	X		X	X
Surface nuclear ship overhaul.....	1		X	X	X
Nuclear submarine overhaul.....	3		X	X	X
Sophisticated electronics, fire control.....	3	1 <sup>1</sup> X	2 <sup>2</sup> X	2 <sup>3</sup> X	2 <sup>4</sup> X
Carrier drydocks (Forrestal class/CVN).....	2	1 <sup>5</sup> 1		1 <sup>6</sup> 2	1 <sup>6</sup> 1
Other large drydocks.....	11	3	3	3	4
Total drydocks.....	24	6	5	6	5

<sup>1</sup> AAW, ASW.

<sup>2</sup> AW, Sub, SSBN.

<sup>3</sup> AW, Sub, SSBN.

<sup>4</sup> AW, ASW, Sub.

<sup>5</sup> Nonnuclear.

<sup>6</sup> Nuclear.

Mr. SANDERS. Now, the question is often asked: Why Long Beach and why maintain a shipyard at Long Beach, at the same time you take the fleet out of Long Beach and put it at San Diego?

Two problems there: No. 1, there is grossly insufficient capacity at Long Beach to satisfy the homeporting and the requirements compared to that which we have down at San Diego.

San Diego is a large naval base, built up, requires some additional construction which you will see later on; much more economic to do than to build up Long Beach.

No. 2, Long Beach is within a few hours of San Diego. For homeporting purposes, when the ship is in Long Beach for overhaul and repair, homeported at San Diego, we have always considered that a homeport overhaul.

#### COSTS AND SAVINGS

Now, what about the economics of the situation in gross? The question is asked: Well, with all your costs of doing this, your one-time costs, how does that tie into the savings? We estimate gross one-time costs, military construction, severance pay, everything else that goes with it, relocation pay, of roughly \$277 million. We estimate at a minimum annual savings on a comparable basis of \$200 million. So we should in effect amortize the costs with the savings basis in less than 2 years with this type of action.

I will be happy, sir, to try to answer any questions that you might have.

Mr. SIKES. This has been a very interesting presentation and one that is helpful to the committee, Mr. Secretary. Are these charts available for the record?

Mr. SANDERS. Yes, sir; they are. I believe the committee has a copy of them.

#### EFFECT ON CONSTRUCTION

Mr. SIKES. What effect will the shore establishment realignment decisions have on the Navy's total construction deficit?

Mr. SANDERS. The shore establishment realignment will reduce the Navy's total construction deficit by approximately \$100 million.

Mr. SIKES. How many bachelor and family housing units will you lose?

Mr. SANDERS. I would like to provide a table for the record.  
[The information follows:]

#### FAMILY AND BACHELOR HOUSING ASSETS TO BE EXCESSED AS A RESULT OF SHORE ESTABLISHMENT REALIGNMENT

	Bachelor				Family	
	BEQ		BEQ		Excess adequate	Excess substandard
	Adequate	Sub-standard can be modernized	Adequate	Sub-standard can be modernized		
NSY, Hunters Point.....	51		427	37	128	11
NAS, Imperial Beach.....	84		717			
NS, Long Beach.....	30		1,000			588
NS, Key West.....	0		0	584		
NAS, Albany.....	72	13	1,295	255	270	
NAS, Glynco.....	306		997		437	
NAD, Oahu.....	3					
NSA/NSY, Boston.....				142	49	
NH, Chelsea.....	77		351			
NTC, Bainbridge.....			206	357		
NS, Newport.....	357		472	535	735	
NAS, Quonset Point.....	140		1,578		7	468
NH, St. Albans.....			176			
Total.....	1,120	13	7,219	1,910	1,626	1,067

Mr. SIKES. How much will the backlog of maintenance be reduced as a result of the planned base closures?

Mr. SANDERS. Approximately \$23 million.

PROJECTS REQUIRED AND AVOIDED DUE TO REALINEMENTS

Mr. SIKES. I note from your statement, Mr. Secretary, that this year's program contains \$45 million for projects related to base closures. How much military construction do you anticipate will be required as a result of base closures in fiscal year 1975 and beyond until a stable short establishment condition is reached?

Provide details of projects required and avoided in all programed years and the out years as a result of these realinements.

[The information follows:]

*Projects Required to Support Realinements*

<i>Activity and project</i>	<i>Program amount (thousands)</i>
<b>Fiscal year 1974:</b>	
NSA Brooklyn, BEQ modernization-----	\$1,056
NSA Brooklyn, relocate telephone switchboard-----	75
NSY Philadelphia, computer support facility-----	180
NSY Philadelphia, electronics equipment facility-----	735
FCDSTC Dam Neck, applied instruction building-----	5,959
NAS Norfolk, helicopter maintenance hangar-----	2,525
NS Norfolk, relocation of fleet landing-----	803
NS Norfolk, dredge south side pier 2-----	314
NS Norfolk, vehicle parking area-----	310
NS Norfolk, applied instruction building-----	3,950
MCSC Albany, administration building-----	5,204
NAS Cecil Field, intermediate maintenance facility-----	2,845
NAS Cecil Field, weapons system training facility-----	791
NAS Jacksonville, BOQ modernization-----	850
NAS Jacksonville, bachelor enlisted quarters-----	1,494
NAS Memphis, applied instruction building-----	4,478
NS San Diego, berthing pier-----	10,000
NAS Miramar, avionics shop addition-----	331
NAS Miramar, applied instruction building-----	1,123
NAS North Island, applied instruction building-----	476
NSY Hunters Point, drydock support facility-----	250
NSY Mare Island, electronics shop alterations-----	200
NAS Moffett Field, BEQ modernization-----	500
NAS Moffett Field, parking apron-----	750
NAS Moffett Field, fuel storage-----	300
<b>Total</b> -----	<b>45,499</b>
<b>Fiscal year 1975:</b>	
NATF Lakehurst, engineering/development and shop space-----	5,030
NATF Lakehurst, administrative space-----	1,260
SPCC Mechanicsburg, ADP facility-----	300
NATC Patuxent River, engineering/development and shop space-----	1,337
FCDSTC Dam Neck, bachelor officers quarters-----	1,685
FCDSTC Dam Neck, bachelor enlisted quarters-----	1,095
NAS Norfolk, runway-----	1,530
NAS Norfolk, parking apron-----	1,364
NS Norfolk, fleet staff operations facility-----	1,214
NS Norfolk, BEQ modernization-----	2,680
NAS Jacksonville, maintenance hanger modernization-----	632
NAS Jacksonville, helicopter training facility-----	1,200
NAS Memphis, bachelor enlisted quarters-----	2,760
NAS Pensacola, aircraft parking ramp-----	1,260
NAS Pensacola, hanger-----	1,500

## Projects Required to Support Realignments—Continued

<i>Activity and project</i>	<i>Program amount (thousands)</i>
Fiscal year 1974—Continued	
NAS Pensacola, bachelor enlisted quarters	\$1, 200
NS San Diego, applied instruction building	476
NS San Diego, bachelor enlisted quarters	500
NAS San Diego, aircraft facility	3, 663
NAS San Diego, aircraft hanger	4, 700
NAS San Diego, EM club	300
NAS Miramar, electrical distribution improvements	1, 800
NAS Miramar, aircraft hanger	3, 669
NAS Miramar, aircraft apron	1, 123
NAS Miramar, bachelor enlisted quarters	822
NAS Moffett Field, aircraft hanger	2, 400
NAS Moffett Field, supply facility	400
NWS Concord, quality evaluation laboratory addition	368
<b>Total</b>	<b>46, 268</b>

## Projects avoided in fiscal year 1974 and future programs due to realignments

<i>Activity and project</i>	<i>Authorized program amount (thousands)</i>
NSY Boston, fuel conversion	\$937
NSY Boston, ground improvements/landscaping	195
NSY Boston, BEQ with mess	10, 648
NDISCOM Portsmouth, bachelor enlisted quarters	1, 077
NS Newport, BEQ modernization	492
NS Newport, BEQ modernization	1, 191
NS Newport, berthing pier No. 3	6, 261
NS Newport, land easement	326
NS Newport, berthing pier No. 13	5, 207
NS Newport, pier 9 utilities	2, 346
NS Newport, bachelor officers quarters (5th increment)	2, 465
NPWC Newport, ship wastewater collection ashore	3, 521
NPWC Newport, salt water service piers 1 and 2	993
NPWC Newport, electric facilities improvements (1st increment)	1, 402
NPWC Newport, utilities for ADM (2d increment)	863
NPWC Newport, water distribution system	696
NPWC Newport, compressed air, piers 1 and 2	919
NPWC Newport, electric service berthing piers	1, 916
NPWC Newport, POL pipeline to heating plant	151
NSC Newport, renovate fuel oil handling facility	441
NSC Newport, fuel containment structure	777
NSC Newport, fuel facility vapor recovery	264
NSC Newport, relocate fuel lines	140
NSC Newport, relocate fuel lines	160
NSC Newport, oil waste collection and reclaim	2, 392
NSC Newport, north fuel pier improvement	2, 816
COMSYSTO Newport, commissary store	2, 306
NCS Newport, communication center	524
NCS Newport, registered publications issue office vault	371
NAS Quonset Point, corrosion control facility	98
NAS Quonset Point, aircraft fire/crash station	483
NAS Quonset Point, air passenger terminal	834
NAS Quonset Point, general service equipment facility	1, 048
NAS Quonset Point, additional well	95
NAS Quonset Point, steam distribution system	826
NARF Quonset Point, S3A environmental control	752
NS Brooklyn, bachelor officers quarters with mess	285
NS Brooklyn, addition/rehabilitation, EM barracks	867
NS Brooklyn, personnel support facility	373
NAS Lakehurst, bachelor enlisted quarters	2, 801
NAS Lakehurst, bowling alley	769

Projects avoided in fiscal year 1974 and future programs due to  
reallocments—Continued

<i>Activity and project</i>	<i>Authorized program amount (thousands)</i>
NAS Lakehurst, bachelor officers quarters	\$2,000
NAS Lakehurst, substation	392
NAS Lakehurst, aircraft washrack	185
NAS Lakehurst, fire protection system, hangar area	462
NAS Lakehurst, perimeter road	565
NAS Lakehurst, storm sewer extension	362
NAS Lakehurst, water/fire protection	168
NTC Bainbridge, bachelor officers quarters without mess	516
NAS Albany, electrical distribution	139
NAS Albany, bachelor enlisted quarters	1,550
NAS Glynco, bachelor officers quarters modernization	252
NAS Glynco, maintenance hangar/apron	2,489
NAS Glynco, photo school building	4,478
COMSYSTO Glynco, commissary store	677
NS Key West, cold storage warehouse	1,200
NS Key West, small arms/pyro magazines	181
NS Key West, modify 5 bachelor enlisted quarters	995
NS Key West, enlarge primary electric feeder	80
NS Key West, incinerator—classified material	81
NS Key West, cold iron berthing improvements	1,173
NS Key West, water system fire protection	382
NS Key West, improve electrical distribution system	89
NS Key West, paving magazine, area roads	148
NS Key West, parking area/bituminous	71
NAS Imperial Beach, medical/dental facility	3,499
NAS Imperial Beach, structural fire/crash station	731
NAS Imperial Beach, aircraft maintenance facility	3,707
NAS Imperial Beach, general aviation warehouse	2,042
NAS Imperial Beach, aircraft maintenance hangar	4,742
NAS Imperial Beach, radio building/GCA crew addition	273
NAS Imperial Beach, roads/grounds	534
PAMI San Diego, data processing center	6,411
NS Long Beach, ship wastewater collection	2,076
NS Long Beach, pier 15 utilities	911
NS Long Beach, military personnel complex	1,746
NS Long Beach, new pier 15	4,621
NS Long Beach, berthing pier 13	5,207
NS Long Beach, pier 9 utilities	2,346
NS Long Beach, berthing pier 17	2,964
NSC Long Beach cold storage warehouse (slt increment)	1,408
NSC Long Beach, dike and catchment facilities	296
NSC Long Beach, modernization of fuel facilities	1,343
NSC Long Beach, bachelor enlisted quarters without mess	2,671
NSC Long Beach, supply management and storage building	6,976
NSC Long Beach, flammable warehouse	1,000
NSY Hunters Point, radar antenna test range	1,739
NSY Hunters Point, mess hall	1,358
NSY Hunters Point, marine barracks without mess	887
NSY Hunters Point, alterations, building 130	103
NSY Hunters Point, steam system improvements	2,111
NSY Hunters Point, slope stabilization	398
NSY Hunters Point, alterations, building 123	153
NSY Hunters Point, alterations, building 128	146
NSY Hunters Point, alterations, building 366	113
NSY Hunters Point, salt water system	1,726
NSY Hunters Point, replace wharf 1	2,932
NSY Hunters Point, bachelor officers quarters	2,757
NSY Hunters Point, EM barracks	6,690
NSY Hunters Point, fresh water system	760
NAD Oahu, bachelor enlisted quarters with mess	968
NAD Oahu, HERO shield ordnance facility	2,255
NAD Oahu, weapons evaluation/engineer facility (1st increment)	1,720

Projects avoided in fiscal year 1974 and future programs due to  
realignments—Continued

	Authorized program amount (thousands)
NAD Oahu, water main-----	\$89
MCSA Philadelphia, air conditioning-----	2, 112
MCSA Philadelphia, emergency generator plant-----	191
MCSA Philadelphia, alterations to central air-conditioning (2d increment) -----	1,115
MCSA Philadelphia, alterations to central air-conditioning (3d increment) -----	574
MCSA Philadelphia, alterations to central air-conditioning (4th increment) -----	932
<b>Total</b> -----	<b>166, 371</b>

SAVINGS

Mr. SIKES. When do you expect that major savings will begin to be achieved as a result of the shore establishment realignment?

Mr. SANDERS. The last year in which the Navy will have any substantial one-time costs associated with this realignment will be fiscal year 1976.

Mr. SIKES. Although the anticipated savings in future years may be large, have you properly discounted these to adequately compare them to the one-time costs which will occur this year and in the subsequent 2 years?

Mr. SANDERS. The discounting technique was not utilized as the ratio of one-time costs of \$277 million to future annual cost avoidance of over \$200 million is so high and the overall amortization period is so short.

CRITERIA FOR HOMEPORTS AND SHIPYARDS

Mr. SIKES. What determines the need for the number and location of ship homeports and shipyards on each coast of the United States, and what were the Navy criteria used in the determination? Provide that for the record.

[The information follows:]

The overriding consideration in numbers of ship homeports and shipyards is numbers of ships and ship work versus capacities of homeports and capabilities of shipyards. A list of specific criteria is provided elsewhere in the testimony. However, judgment was applied throughout the decision process. The criteria cannot be quantified or expressed in absolute terms. Another complication is that the Navy is continually studying its base structure in relation to its force levels and requirements. Additional bases will probably be closed in the next couple of years. To state now what the optimum or long term base structure should be would be premature. The following lists contain the number of homeports and shipyards considered necessary under present conditions within planned budgets. It is an interim base structure only.

SHIP HOMEPORTS (ON EACH COAST)

(a) Two homeports capable of berthing and supporting large *Forrestal* class and later class aircraft carriers.

(b) Two homeports capable of berthing and supporting surface combatants and service ships.

(c) Two homeports capable of berthing and supporting nuclear submarines.

(d) One homeport capable of berthing and supporting amphibious ships.

(e) One SSBN training and support complex.

## SHIPYARDS (ON EACH COAST)

(a) Two shipyards capable of drydocking, overhauling, and repairing large *Forrestal* and later class aircraft carriers, one of which must be nuclear capable.

(b) Three nuclear capable shipyards for the overhaul and repair of nuclear submarines.

(c) One shipyard capable of overhauling and repairing nuclear surface ships.

(d) Three shipyards to install, maintain, and checkout sophisticated electronics and missile systems.

Mr. SIKES. How many officer, enlisted, and civilian positions will be eliminated as a result of the Navy base realignments?

Mr. SANDERS. Based on June 30, 1972 actual on-board figures, the Department of the Navy realignment package will eliminate 1,228 officer, 5,969 enlisted and 14, 552 civilian positions.

## GEOGRAPHICAL FACTORS

Mr. SIKES. Was dispersal of bases considered to be an important factor in the base closure decisions?

Mr. SANDERS. Yes, sir.

As I mentioned, this is an important factor. It was not an overriding factor.

Mr. SIKES. What allowance was made in the economic and strategic analysis of the distance of alternate bases from expected ship operation areas?

Mr. SANDERS. This was a factor looked at very carefully. I do not have a map here, sir, but if you could picture the east coast—this is where it really comes into play and the deployment to the Mediterranean area. The Mediterranean is obviously a closer point, distance-wise, from Narragansett. However, naval operating procedures have the ships going to the Mediterranean, rendezvousing with the carrier going over, somewhere in the Atlantic, and then going over as a group.

So, the key is not the distance from the homeport to the Mediterranean, but the key is the distance from the homeport to the carrier deploying.

Now we cannot place carriers in Narragansett Bay without major expenditures. If we left the destroyer force in Narragansett Bay, they would still not go straight to the Mediterranean, but come down to the capes of Virginia, rendezvous with the carriers out of Mayport or Norfolk. So the actual geographical distance to the Mediterranean is not a very salient factor, sir.

## PERCENTAGE REDUCTIONS OF FORCES AND BASES

Mr. SIKES. I notice that the number of ships will have been reduced by 40 percent between 1964 and 1975.

By what percentage will the shore establishments be reduced during the same period?

Mr. SANDERS. Upon completion of the realignment actions underway, the number of active ship homeport complexes will have been reduced 30 percent; active aircraft basing complexes will have been reduced 30 percent; naval shipyards will have been reduced 20 percent; and air rework facilities 14 percent.

## CRITERIA

Mr. SIKES. Please provide for the record the criteria used in deciding which bases to close.

[The Navy's criteria follow:]

In the development of the Navy's shore establishment realignment proposals the following significant factors were considered.

1. *1974-1980 force levels/mix.*—Includes the numbers and type of each ship and aircraft, their weapon systems and specialized support required.

2. *Ship homeporting/aircraft basing excess capacities.*—Includes the identity of requirements for pier spaces, anchorages, boat landings, runways, taxi strips, parking aprons, hanger spaces and ship and aircraft support.

3. *Navigational limitations.*—Includes, restrictive drafts (depth of water), transit time, shipping congestion, length and breadth of channel, specialized navigational aids required, periods of reduced visibility and seasonal weather conditions.

4. *Air space restrictions.*—Includes, approach patterns, air space congestion (civilian), noise factors, civilian encroachment, periods of reduced visibility and seasonal weather conditions.

5. *Nuclear clearances.*—Includes nuclear area clearances existing by type and future clearances required.

6. *Shipyards locations and capabilities.*—Includes nuclear surface/sub-surface repair capabilities and requirements, weapon and electronic systems repair capabilities and requirements, specialized drydock requirements by number and type, civilian work force availability and general repair/design capabilities.

7. *Accessibility to operating areas.*—Includes, transit time, air and surface congestion, periods of reduced visibility, seasonal weather conditions and availability of services.

8. *BEQ/BOQ requirements.*—Includes increases in base complex population entitlements, availability and desirability of private rentals and adequacy of messing requirements.

9. *Cold iron facilities.*—Includes availability of steam, water, air, and electricity including nuclear ship electrical power requirements, pollution abatement and nuclear waste disposal requirements.

10. *Aviation support facilities.*—Includes air frame and engine rework requirements, new and future aircraft introductions and contractor operations.

11. *Medical and supply support.*—Includes active and retired triservice military populations, CHAMPUS/military hospital cost comparison, location of supply centers vis-a-vis force concentrations, supply control centers, usage data, and type, depth of supply support requirements.

12. *Personnel support facilities.*—Includes availability and adequacy of social and recreational facilities, public transportation, and distances from quarters to facilities, commissaries and exchanges.

13. *Private and public family housing.*—Includes availability and adequacy of public quarters and public rentals/sales. Excesses and short-falls have been identified.

14. *Impact on the civilian economy.*—Includes loss of job availability, payroll reductions, housing surpluses and unemployment.

15. *Environmental impact.*—Includes, decreases in solid waste, water, air, and noise pollutants at losing complexes.

16. *Costs to implement.*—Includes, severance pay and unused leave pay to discharged civilian employees, transportation costs for relocated employees, PCS costs for military personnel and dependents, preservation and caretaker costs, equipment transportation costs, and Milcon requirements at gaining activities.

17. *Savings achievable.*—Includes eliminated military and civilian salary avoidances, overhead and maintenance costs and approved Milcon costs avoidance.

## REDUCTIONS IN NARRAGANSETT BAY

Mr. SIKES. What minimum facilities and depth of water are required for homeporting your largest aircraft carriers?

Mr. SANDERS. The largest aircraft carriers require minimum water depths of 40 feet, a pier having a minimum width of 100 feet for

berthing on only one side; a nearby master jet base and an airfield capable of handling carrier aircraft squadrons composed of modern high-performance jet aircraft during loading operations.

Mr. SIKES. What is the cost estimate for providing these facilities in the Narragansett Bay?

What were the comparable costs at other locations considered?

Mr. SANDERS. The cost estimate for dredging a channel, turning basin and carrier berth and pier improvements in Narragansett Bay is \$25,400,000. Norfolk and Mayport already have the capability and no investment cost is required.

Mr. SIKES. Having determined that Newport was not a suitable carrier homeport, why did the Navy necessarily move destroyers, aircraft maintenance, supply and other facilities out of the area?

Mr. SANDERS. On the east coast, active fleet ships required to be homeported decreased some 38 percent since 1969 and other east coast homeports which have the special capability to homeport carriers and submarines also have the excess capacity to homeport other Newport based ships. Supply and other fleet support facilities in Newport are located in Newport because fleet ships are based there. When the ships move, the supply and other fleet support facilities are not required in Newport. Fleet aircraft forces have reduced also and are being co-located into fewer complexes having the capability to operate high performance tactical aircraft at or near carrier homeports. Aircraft maintenance is moved to the areas of major concentration of carriers, tactical and antisubmarine warfare aircraft in these complexes.

#### CLOSURE OF NAS GLYNCO, GEORGIA

Mr. SIKES. What factors led you to close Naval Air Station Glynco as opposed to other naval air stations with similar missions on the east coast?

Mr. SANDERS. We looked at our naval air training stations very carefully, sir, primarily because of the buildup in naval aviation training. We found that we did have excess capacity. We looked at what would have the least effect on the training load, which would be the most economical to close down.

We found at Glynco that, except for the naval flight officer training, no actual flight training took place at Glynco.

We also found that this advanced flight officer training could be quite easily combined without additional facilities cost with the basic naval flight officer training taking place at our very permanent installation at Pensacola, sir.

We also found that Glynco ranks within the lower 30 percent of the 10 naval air bases as far as plant account was concerned, meaning we had more military construction programs looking at us in the future there than we would elsewhere.

We also found, again, that the other naval air training bases had the capacity to supply all the operational support without any increase in fixed airfield overheads and with a minimum in military construction.

#### CLOSURE OF BAINBRIDGE TRAINING CENTER

Mr. SIKES. Will you provide for the record an up-to-date economic analysis of the costs and savings of relocating the remaining functions

from Naval Training Center, Bainbridge, with the exception of the Naval Academy Prep School?  
 [The information follows:]

**ECONOMIC ANALYSIS/PROGRAM EVALUATION—SUMMARY OF COSTS FOR FORMAT A-1**

1. Submitting DOD component : SECNAV.
2. Date of submission : June 11, 1973.
3. Project title : Closure of NTC Bainbridge.
4. Description of project objective: Reduction of Navy operation resource requirements :
  - 5a. Present alternative: A note 1.
  - b. Proposed alternative: B note 1.
  - 6a. Economic life : Note 2.
  - b. Economic life: Note 2.
  7. Project year, 1-25.
  8. Recurring (operations) costs (thousands of dollars) :
    - a. Present alternative, note 3.
    - b. Proposed alternative, \$7,038.
  9. Differential cost (thousands of dollars), \$7,038.
  10. Discount factor, \$9,524.
  11. Discounted differential cost (thousands of dollars), \$67,030.
  12. Totals, \$67,030.
  13. Present value of new investment :
    - a. Land and buildings and equipment, note 4.
    - b. Other relocation costs, \$2,759.
  14. Total present value of new investment (that is, funding requirements), \$2,759.
  15. Plus value of existing assets to be employed on the project, note 4.
  16. Less value of existing assets replaced, note 4.
  17. Less terminal value of new investment, note 5.
  18. Total new present value of investment, \$2,759.
  19. Present value of cost savings from operations (paragraph 11), \$67,030.
  20. Plus present value of the cost of refurbishment or modifications eliminated, note 4.
  21. Total present value of savings, \$67,030.
  22. Savings/investment ratio (paragraph 21 divided by paragraph 10), 24.3.
  23. Source/derivation of cost estimates: Recurring cost (operations) : Data and cost estimations obtained from activity functional commander and major claimant levels.

Note 1 :

Alternate A—Continue operations at NTC Bainbridge.

Alternate B—Relocate operations and close NTC Bainbridge.

Note 2 : Economic life is assumed at expected life of replacement facilities of 25 years for both alternates.

Note 3 : Alternate A is the base case in this incremental economic analysis. Costs/savings displayed are additions/reductions from the base case.

Note 4 : Facilities at Bainbridge are considered as past economic usefulness and replacements must be provided either at Bainbridge or at another location. Land buildings and equipment are ; therefore, offsetting between the alternates and are not included in this analysis.

Note 5 : New investments considered to be utilized to extent of economic life.

**SUMMARY OF OUTPUTS FOR ECONOMIC ANALYSIS OR PROGRAM EVALUATION STUDIES,  
 FORMAT B**

1. Submitting DOD component : SECNAV.
2. Date of submission : June 11, 1973.
3. Project title : Closure of NTC Bainbridge.
4. Description of project objective: Reduction of Navy operating resource requirements.
5. Alternative : B.
6. Economic life: 25 years.
7. Outputs :  
 To outputs—expected benefits, output, and indicators of effectiveness :

In addition to the significant annual operating savings which will occur in the outyears as a result of the disestablishment of NTC Bainbridge, the following actions occasioned by the closure will significantly benefit the Navy:

1. The radioman (RM) school at Bainbridge will consolidate with the RM school at San Diego, pooling scarce resources and expertise.
2. A necessary dislocation of clerical schooling from San Diego to NAS meridian in order to accommodate the Bainbridge RM personnel in San Diego, brings about a desirable pooling of clerical skill training with attendant resource conservation.
3. The nuclear power school, Bainbridge will move to NTC Orlando, a previously planned move, to be joined at a later date by nuclear power school, Mare Island.
4. Fiscal and manpower economics will be achieved by a consolidated Reserve personnel activity designated as the Naval Reserve Personnel Center (NRPC) to be collocated with the chief of naval reserves in New Orleans.
5. Savings in personnel and overhead expenditures will be realized by combining three existing personnel and manpower accounting installations (PAMI) into a Personnel Management Information Center (PERMIC).

#### LONG BEACH REDUCTIONS

Mr. SIKES. According to your criteria, why is Long Beach, which has a shipyard, less adequate as a naval station than San Diego, which does not?

Mr. SANDERS. San Diego is the largest naval complex on the west coast. The complexity and completeness of support facilities and the availability of ships berthing does not exist at any other naval station or combination of west coast, including Hawaii, naval stations. There are no restrictions on size or type of ship. While San Diego does not have a naval shipyard in San Diego Bay, the Long Beach Naval Shipyard is within reasonable distance and is considered to be within overhaul in homeport criteria.

#### PROJECTS NOT REQUIRED

Mr. SIKES. What amount of projects, including family housing projects, for which funds were provided in prior years will not be required as a result of base realignments?

When will you determine this more exactly?

Please provide that for the record.

[The information follows:]

The following listing includes projects for which there is authorization and appropriation and on which some savings may be achievable. Completed projects are not shown. It is anticipated that the projects under review will be resolved in 90 days.

#### PROJECTS NOT UNDER CONSTRUCTION AND NOT REQUIRED

<i>Activity</i>	<i>Family housing</i>	<i>Cost</i> <i>(thousands)</i>
Fiscal year 1973:		
NC Newport (150 units)-----		\$4, 800
NAS Lakehurst (200 units)-----		5, 130
NC Long Beach (400 units)-----		9, 430
<b>Total</b> -----		<b>19, 360</b>
Fiscal year 1972:		
NC Long Beach (300 units)-----		\$6, 900

*Military construction*

<i>Activity and project</i>	<i>Cost (thousands)</i>
Fiscal year 1973:	
NS Newport, dock basin for floating drydock-----	\$2, 050
NH Newport, BEQ modernization-----	423
NPWC Newport, utilities for floating drydock-----	546
NAS Quonset Point, weapon system training facility-----	791
NAS Quonset Point, intermediate maintenance facility-----	2, 845
NARF Quonset Point, engineering and systems analysis addition----	1, 460
NEST&EF St Inigoes, communication equipment R.D.T. & E. bldg---	140
NAS Glynco, BEQ modernization-----	1, 213
NAS Imperial Beach, bachelor enlisted quarters-----	1, 252
NAD Oahu, electrical substation-----	89
<b>Total -----</b>	<b>10, 809</b>

## PROJECTS NOT UNDER CONSTRUCTION AND UNDER REVIEW FOR POSSIBLE CANCELLATION

*Family housing*

None.

*Military construction*

<i>Activity and project</i>	<i>Cost (thousands)</i>
Fiscal year 1973:	
FTC Newport, firefighter school relocation and smoke abatement----	\$3, 987
NPWC Newport, ship wastewater collection ashore-----	1, 430
NS Key West, incinerator-----	1, 648
NS Long Beach, ship wastewater collection ashore-----	1, 459
NSY Hunters Point, storm sewer-----	3, 195
NSY Hunters Point, interceptor industrial waste treat facility----	3, 942
NSY Hunters Point, storm sanitary sewer separator-----	1, 995
<b>Total -----</b>	<b>17, 656</b>
Fiscal year 1972:	
NAS Quonset Point, refuse disposal-----	\$3, 181
NAS Quonset Point, industrial waste treatment facility-----	1, 369
NS Long Beach, sewer connection to mole pier-----	773
<b>Total -----</b>	<b>5, 323</b>

## PROJECTS UNDER CONSTRUCTION AND CURRENTLY UNDER REVIEW TO DETERMINE IF SOME SAVINGS ARE POSSIBLE

*Family Housing*

None.

*Military Construction*

Fiscal year 1972:	
NAS Quonset Point, bachelor enlisted quarters modernization----	\$3, 511
NAS Glynco, bachelor enlisted quarter/WAVES-----	469
NAS Glynco, bachelor enlisted quarters w/mess-----	2, 776
NAS Glynco, dispensary/dental clinic-----	1, 878
NSC Long Beach, industrial wastewater collection-----	225
<b>Total -----</b>	<b>8, 859</b>
Fiscal year 1971:	
NS Newport: bachelor enlisted quarters-----	2, 409
Fiscal year 1969:	
NPWC Newport, incinerator-----	2, 338

## PROJECTS BUILT IN PREVIOUS YEARS

Mr. SIKES. Provide for the record the amount of authorization and appropriations in the last 5 years at installations which will be closed or reduced significantly.

[The information follows:]

## Activity and project:

	<i>Cost</i> (thousands)
NSY Boston, abrasive blast facility	\$365
NSY Boston, air pollution abatement incinerator	2, 280
NSY Boston, sewage systems, drydocks	223
NSY Boston, public works facility	7, 682
<b>Total</b>	<b>10, 550</b>
NS Newport, commissioned officers mess (open)	685
NS Newport, bachelor enlisted quarters	2, 409
NS Newport, enlisted men's club	1, 660
<b>Total</b>	<b>6, 804</b>
FTC Newport, firefighters school relocation and smoke abatement	3, 987
NPWC Newport, incinerator	2, 874
NPWC Newport, secondary sewage treatment plant	500
NPWC Newport, sanitary sewerage system improvements	144
NPWC Newport, storm/sanitary sewer improvements	1, 203
NPWC Newport, utilities for floating drydock	546
NPWC Newport, ship wastewater collection ashore	1, 430
<b>Total</b>	<b>6, 697</b>
NH Newport, bachelor enlisted quarters modernization	423
NAS Quonset Point, aircraft carrier pier utilities	519
NAS Quonset Point, bachelor enlisted quarters modernization	3, 511
NAS Quonset Point, refuse disposal	3, 181
NAS Quonset Point, industrial waste treatment facility	1, 369
NAS Quonset Point, weapons system training facility	791
NAS Quonset Point, intermediate maintenance facility	2, 845
<b>Total</b>	<b>12, 216</b>
NARF Quonset Point, helicopter transmission shop	633
NARF Quonset Point, engine parts coating shop	1, 063
NARF Quonset Point, engineering and systems analysis addition	1, 460
<b>Total</b>	<b>3, 156</b>
NH St. Albans, boiler fuel conversion	214
NS Brooklyn, commissary store rehabilitation	370
NAS Lakehurst, control tower	274
NAS Lakehurst, messhall	1, 010
NAS Lakehurst, aircraft fuel system alteration	50
NAS Lakehurst, dispensary air-conditioning	107
<b>Total</b>	<b>1, 441</b>
NAEC Philadelphia, electric power to laboratory	222
MCSC Philadelphia, computer facilities expansion	200
NEST&EF St. Inigoes, communication equipment R.D.T. & E. building	140
NAS Albany, photographic laboratory alterations	181
NAS Glynco, sewage treatment system	252
NAS Glynco, aircraft fuel system modifications	47
NAS Glynco, air traffic control school addition	533
NAS Glynco, dispensary/dental clinic	1, 878
NAS Glynco, bachelor officers quarters w/mess	2, 776
NAS Glynco, bachelor officers quarters w/WAVES	469
NAS Glynco, bachelor enlisted quarters modernization	1, 213
<b>Total</b>	<b>7, 168</b>
NS Key West, bachelor enlisted quarters	2, 130
NS Key West, incinerator	1, 648
<b>Total</b>	<b>3, 778</b>

	<i>Authorized (thousands)</i>
NSUS Key West, training tank.....	\$100
NESO Great Lakes, Air-conditioning for ESO building.....	323
NAS Imperial Beach, Aircraft maintenance hangar (2d incinerator) .....	1, 250
NAS Imperial Beach, barracks.....	734
NAS Imperial Beach, sewage system.....	137
NAS Imperial Beach, land acquisition.....	6, 396
NAS Imperial Beach, aircraft fuel system modifications.....	20
NAS Imperial Beach, bachelor enlisted quarters.....	1, 252
<b>Total</b> .....	<b>9, 789</b>
NS Long Beach, sewerage system expansion.....	470
NS Long Beach, sewer connection to mole pier.....	773
NS Long Beach, ship wastewater collection ashore.....	1, 459
<b>Total</b> .....	<b>2, 702</b>
NSC Long Beach, industrial wastewater collection.....	225
NSY Hunters Point, abrasive blast facility.....	684
NSY Hunters Point, electronic weapons precision facility.....	3, 885
NSY Hunters Point, waterfront fire protection.....	987
NSY Hunters Point, compressed air dehydration system.....	80
NSY Hunters Point, sheet metal shop.....	2, 983
NSY Hunters Point, paint bake oven afterburners.....	80
NSY Hunters Point, electrical distribution system improvement.....	3, 906
NSY Hunters Point, electrical distribution system improments (2d incinerator) .....	2, 370
NSY Hunters Point, waterfront utilities service station.....	2, 638
NSY Hunters Point, boiler fuel conversion.....	50
NSY Hunters Point, storm sewer interceptor.....	3, 195
NSY Hunters Point, industrial waste treatment system.....	3, 942
NSY Hunters Point, storm/sanitary sewer separation.....	1, 995
<b>Total</b> .....	<b>26, 795</b>
NAD Oahu, electrical substation addition.....	89

#### SHIPYARD CAPACITY

Mr. SIKES. Now, is there going to be sufficient capacity to meet Navy shipbuilding overhaul, and repair needs in the yards that will continue to operate?

Mr. SANDERS. Yes, sir, not only will there be sufficient capacity, but in the opinion of some people, there will still be excess capacity, sir. This is something we must keep under constant review, particularly with reference to the capacity in the private shipyards.

Mr. SIKES. Is that due in large part to the reduction in the number of ships in the operating fleet?

Mr. SANDERS. Reduction in the number of ships; yes, sir.

Mr. SIKES. Is there to be additional construction required in the yards that will continue to operate as the result of consolidations?

Mr. SANDERS. Mr. Chairman, there will be a minimum amount of construction in the yards. Our total bill construction-wise for this whole program is \$45 million in the 1974 program and it looks to be now somewhere around a maximum of \$50 million in the 1975 program. Little if any of this is geared to the yards, sir.

I would have to ask someone else to give the specific figure. It is very minimal.

[The information follows:]

In the 1974 budget are four projects with a total of \$1.365 million related to the closure of Naval Shipyards.

Mr. SIKES. Is there any significant construction that would be required which would not have been required in the normal operation of the yard?

Mr. SANDERS. No, sir, definitely not.

#### LONG BEACH REDUCTIONS

Mr. SIKES. We have had some questions raised about Long Beach.

Talking about the costs of the transfer of Navy ships from Long Beach to San Diego, the question is, whether it was sound economy and good strategy.

Costs alleged include the construction of a \$10 million deep water pier, redesigning Navy ships to enable them to pass under the bridge from San Diego to Coronado, additional dredging of the harbor, and moving 20,000 families and household effects from Long Beach to San Diego.

Are those valid criticisms?

Mr. SANDERS. No, sir, they are not.

I know of no redesign of a ship, sir. We will have to build a new pier at San Diego which is included in this military construction program at a cost of around \$10 million, no question about that.

Mr. SIKES. Is that because of the move?

Mr. SANDERS. Yes, directly related to the move.

Our one-time closure costs, which include some of those transfers, relocations that you mentioned, will run a little over \$16 million.

Our annual savings from Long Beach are estimated at \$11.4 million per year, sir, an adequate offset without any question in my book.

Mr. SIKES. \$11 million annually?

Mr. SANDERS. Yes, sir, \$11.4 million annually.

We have, if you want it, a cost—

Mr. SIKES. Will it require additional dredging?

Mr. SANDERS. This includes everything.

Mr. SIKES. Do you require moving 20,000 families and household effects?

Mr. SANDERS. Yes. Twenty thousand is awfully high. Our one-time closure costs, which include families and things of this kind, total about \$16.3 million.

Mr. SIKES. Is San Diego asking for money from HEW to construct schools for Navy children and housing for personnel who are now accommodated in schools or housed in Long Beach?

Mr. SANDERS. Mr. Chairman, I know nothing of this. We will have to check it and supply that answer for the record.

[The information follows:]

There is no requirement that the Navy certify requests by local jurisdictions for HEW funds for school construction. However, we understand that the San Diego school system has requested HEW assistance in school construction in nearly every year since 1968. The Navy has learned of no requests for housing construction assistance.

Mr. SANDERS. We anticipate no difficulty.

Mr. SIKES. Do you have questions, gentlemen, on the base realignment?

ALLOCATION OF SHIPWORK TO PRIVATE YARDS

Mr. DAVIS. Mr. Sanders, could you comment on the relationship between the shipyard closures which have been announced and your policy with respect to the allocation of work for repair, overhaul and conversion to private yards, particularly work on non-nuclear ships?

Mr. SANDERS. The Navy policy on allocation of ship work to the private sector has been and will continue to be in accordance with Department of Defense directive 4151.1. This, specifically, calls for a minimum of 30 percent of conversion, alterations, and repair work to be assigned to the private sector. For the period fiscal year 1962-fiscal year 1972 the Navy has maintained an average of 34.3 percent, this work is in the private sector. With the completion of the SSBN and DLG conversion programs in fiscal year 1974 and considering the large percentage of nuclear ships, aircraft carriers, and complex missile ships in the fleet, maintaining the required allocation to the private sector with a 10 Naval shipyard complex would have been virtually impossible in the future. With the closure of two non-nuclear qualified Naval Shipyards, more non-nuclear ship repair and alteration work will be assigned to the private sector and it is anticipated that the distribution of conversion, alteration, and repair work required by Department of Defense directive 4151.1 can be maintained in the future. The increased non-nuclear alteration and repair work assigned private in the future will be most heavily distributed in or near fleet homeport areas, as in the past, to minimize the adverse impact of out of homeport overhaul and crew morale.

Mr. SIKES. Thank you again for your appearance Mr. Sanders. We will recess until 1 o'clock tomorrow.

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FRIDAY, JUNE 8, 1973.

TRIDENT PROGRAM

Mr. SIKES. The committee will come to order.

Admiral Lyon, you have appeared before this committee as the Trident project manager before.

We appreciate your dedication to, and knowledge of, this important program. We also appreciate your forthright approach. This is a very new program and one which has attracted a great deal of interest.

This committee feels it is an important program. Of course, it is important that we also have a good working knowledge of the program and what is involved. We are going into a little further than would normally be required for construction purposes so that our record will be complete and we will have more intimate knowledge of the details of the program.

You may proceed in your own way.

Admiral LYON. Before I proceed with my summary, Admiral Marschall has a short statement he would like to present.

Mr. SIKES. Admiral Marschall, we are glad to hear from you.

#### STATEMENT ON PROGRAM CHANGES

Admiral MARSCHALL. Thank you, Mr. Chairman.

Mr. Chairman, before we proceed with the Trident briefing, I would like to point out some changes that are being proposed by the Navy to the fiscal year 1974 military construction program. These changes if approved will be submitted to the Armed Services Committees prior to the start of their hearings. Since these changes will impact on the Trident project and three other projects in this years program I would like to point out the changes under consideration.

Two projects will be reduced, the hospital replacement project at the naval hospital Orlando, and the various locations Trident facilities project.

A recent reevaluation of bed requirements at the naval hospital Orlando reveals that the number of beds may be reduced from 310 to 235. This reduction is feasible by the removal of the fifth floor of the hospital and will result in a cost reduction of \$1,331,000.

For the Trident facilities project, a reduction of \$6,903,000 is feasible, because land acquisition requirements are smaller than were originally anticipated.

An equal dollar substitution will be made for these reductions by increasing the scope and cost of two fiscal year 1974 projects, the addition of two other projects, and a request for appropriations for amendments to three prior year projects.

If I may, I would like to submit a complete listing of the proposed changes for the record and then we may discuss the projects being modified in the fiscal year 1974 program as we come to them in the general project review. The new projects and amendments we are prepared to discuss at your convenience.

[The list follows:]

PROPOSED MODIFICATIONS TO NAVY'S FISCAL YEAR 1974 MILITARY CONSTRUCTION AUTHORIZATION PROGRAM

[In thousands of dollars]

New authorization, title II	From	To	Change
<b>Installation/project, inside the United States:</b>			
1st Naval District: Portsmouth Naval Shipyard, Portsmouth, N.H., additional crane rail system.....	0	2, 817	2, 817
6th Naval District:			
Naval hospital, Orlando, Fla., hospital replacement.....	22, 312	20, 981	(1, 331)
Naval Coastal Systems Laboratory, Panama City, Fla., systems development and test facility.....	2, 100	2, 300	200
Naval Aerospace Regional Medical Center, Pensacola, Fla., medical/dental support facilities.....	0	1, 084	1, 084
11th Naval District: Naval Air Station, Miramar, Calif., applied instruction building.....	1, 123	1, 542	419
12th Naval District: Naval Air Station, Moffett Field, Calif., operational trainer building addition.....	0	430	430
Various locations—Inside United States, Trident facilities: Trident support complex and flight test facilities phase I.....	125, 223	118, 320	(6, 903)
<b>Net, title II new authorization changes.....</b>	<b>150, 758</b>	<b>147, 474</b>	<b>(3, 284)</b>
<b>Amendments to prior authorization</b>			
	<b>Authorized cost</b>	<b>Current working estimate</b>	<b>Change</b>
<b>Fiscal year 1971 authorization law:</b>			
Naval Weapons Laboratory, Dahlgren, Va., sewage treatment system.....	530	779	249
<b>Fiscal year 1972 authorization law:</b>			
Naval Air Station, Meridian, Miss., installation total (note 1).....	3, 266	3, 859	593
<b>Fiscal year 1973 authorization law:</b>			
Naval Ammunition Depot, McAlester, Okla., bomb loading plant modernization.....	5, 946	8, 388	2, 442
<b>Total amendment changes.....</b>	<b>9, 742</b>	<b>13, 026</b>	<b>3, 284</b>

Note (1): An amendment is needed primarily because of the escalation of the Bachelor Enlisted Quarters (BEQ) project. Since there is a more urgent requirement for the BEQ, than the Enlisted Mens (EM) club it was decided to proceed with the BEQ construction and defer the EM club construction until enactment of the fiscal year 1974 authorization and appropriation laws.

Mr. SIKES. Thank you very much, Admiral.

We will discuss these matters in detail as we come to them in the discussion of the line items, but we are glad to have this advance notice of the changes.

They had been discussed, of course, previously, and we had anticipated that there would be some changes necessary. Admiral Lyon, would you please proceed.

STATEMENT OF TRIDENT PROJECT MANAGER

Admiral LYON. Mr. Chairman, I am most pleased to have the opportunity to appear before your committee for the second year in a row. I am also pleased to report to you today, sir, that the Trident program has successfully completed all of the critical scheduled milestones in the intervening period since I last saw you. I have with me today Rear Admiral Kaufman, who is the Trident program coordinator on the staff of the Chief of Naval Operations, and Captain Stacey, who is the designated officer in charge of construction for the Trident program.

I have prepared, Mr. Chairman, an unclassified statement on the Trident program which I would like at this time to submit for the record.

Mr. SIKES. Very well.  
[The statement follows:]

Mr. Chairman and members of the committee: I am Rear Adm. Harvey Lyon, Project Manager, under The Chief of Naval Material, for the Trident system. I am pleased to have an opportunity to appear again before this committee and present the military construction required for logistically and operationally supporting the Trident weapon system.

#### TRIDENT SYSTEM

The Trident system has three basic elements: A new improved submarine, a new long-range Trident missile, and a support site. The strategic considerations for the development of the weapon system have been provided in prior hearings so I'll basically limit my statement to military construction support. I would like to discuss briefly though some of the differences in this weapon system and the Polaris/Poseidon weapon system and how these differences are reflected in the logistic and operational support facilities.

The Trident submarine, which incorporates new quieting technology, increased mobility, and improved defensive combat system, will be longer, and will have a greater beam and deeper draft than the Polaris/Poseidon submarines. The exact dimensions and other classified data about the submarine and missile system have been provided to the committee staff.

The Trident weapon system allows for planned growth to an eventual larger missile. The initial Trident I missile will provide significant range improvements over Poseidon. This missile is physically restricted in size to be compatible with our latest SSBN's. The projected growth missile will be larger physically, capable of delivering larger payloads to longer ranges. Because of the increased size it will be capable of larger payloads and will have a significantly larger rocket propellant explosive hazard zone. The explosive safety distance zone of this growth missile will be used in siting supporting facilities at the Trident support site.

The Trident growth missile, which can [——] the approximate 2000-mile range of the Poseidon submarine missile, increases sixfold the area of possible submarine patrol. This of course significantly increases the projected survivability of the weapon system, and provides greater confidence in our Nation's strategic deterrence capability.

#### OPERATIONAL CAPABILITY DATE

The initial operational capability date of the weapon system is late calendar year 1978, which requires the initiation of facilities construction in calendar year 1974. Some facilities are included this year because they are essential for deployment of the weapon system. Other facilities are included in order to obtain a logical (least cost) construction sequence over the 4-year construction period which is available prior to deployment of the weapon system. Environmental impact studies are underway. The filing and acceptance of the environmental impact study will pace the start of construction.

#### FISCAL YEAR 1974 TRIDENT FACILITIES PROJECT

The assessment and refinement of Trident requirements is a continuous process during this early stage of development of a definitive master plan for shore facilities. As a result of this assessment and the selection in February of Bangor, Wash., as the support site, it has been determined that only \$118.3 million is required and may be effectively utilized for Trident facility construction from the fiscal year 1974 military construction program. This reduction from the \$125.2 million included in the Trident project justification document results from detailed land use studies which identified smaller land acquisition requirements than were originally anticipated. The estimated cost for the land is \$5 million.

Under the various locations, Trident facilities project we are therefore requesting at two sites \$118,320,000 for Trident facilities construction. Within this total are facilities at the Trident support site, Bangor, Wash., with an estimated cost of \$83 million. One requirement at Bangor is the acquisition of about 150 acres of land to assure that the necessary explosive safety zone arcs are within Government-owned land. This years' project includes a covered explosive handling pier which is essential to the deployment of the weapon system and a

refit pier to provide logical sequencing of construction. A weapon/navigation training building is included to permit early crew training by naval personnel at naval facilities. This will enable the Navy to eliminate the more costly contractor factory crew training for all crews except those of the lead ship. The other facilities requested will initiate road and utilities construction required to assure timely utilization of Trident support facilities.

#### MISSILE FLIGHT TEST FACILITIES

At the Air Force eastern test range, Cape Kennedy Fla., we are requesting \$35 million for missile flight test facilities. The facilities to be provided are a wharf and dredging, alterations to a launch complex, missile checkout buildings, guidance and telemetry building and a lifting device proofing building. These facilities will support an initial flight test of the Trident I missile in late calendar year 1975.

Explosive quantity safety distance requirements preclude the use of existing water front facilities for the Trident missile. A new wharf, with associated dredging for a turning basin, located a safe distance away is required. The wharf and turning basin are the high cost facilities at Cape Kennedy with an approximate cost of \$30 million. The Trident submarines as they are delivered will operate and train here until deployment to the Pacific.

#### TOTAL FACILITIES REQUIREMENTS

The future military construction program identified with the deployment of 10 Trident submarines is expected to extend through fiscal year 1979 with a total facilities cost, excluding family housing, of about \$510 million. With the addition of \$33 million for planning and design, the total cost will be about \$543 million. The reduction, from the approximately \$1 billion figure provided last year is the result of:

The elimination of depot level submarine maintenance at the Trident support complex site and the transfer of this support to shipyards.

The reduction of the military manning level by the transfer of some functions to civilian personnel with resultant reduction in bachelor and family housing facilities requirements.

The reduction of the facility support level from 15 to 10 ships lowered the facilities requirements.

A reexamination of a requirement for concurrent high explosive operations and reductions in some of the explosive safety factors internal to the base permitted a reduction in the land required at the Bangor support complex.

A more detailed examination of the facilities cost for the Bangor site vice the use of an estimate that would approximate the costs at any one of four candidate sites.

A tabulation of the types of facilities to be included in future programs is appended to my statement for insertion in the record, if desired.

#### SUMMARY

In summary, Trident offers the best technical, most cost effective program available to provide future seabased strategic force capability. Although the facilities associated with the weapon system represent only 5 percent of the total cost of the system, the facilities are vital to deployment and economic life cycle maintenance of the weapon system. I would like to stress the fact that the construction of the Trident support complex ashore will not only result in the lowest total cost for deployment of Trident, but that it is also the most cost effective alternative over the life cycle of the weapon system.

I respectfully solicit your full support for the appropriations requested for the Trident facilities.

Thank you. I am prepared to respond to any questions that you may have on Trident facilities.

Admiral LYON. Mr. Chairman, with your permission, I will briefly summarize the Trident program for the committee and its current status. The goals of Trident remain unchanged. The general specifications and the contract design of the submarine are complete. The full

funding for the Trident submarine lead ship construction has been submitted to the Congress in the budget this year.

The goals of the Trident system are, as you see here. The strategic weapon system has completed definition and technology development has met all requirements and milestones. The system support site, which is the third major factor of the Trident system, has been elected after a year, or after over a year, of tradeoff studies and analysis.

Environmental impact studies have been filed for the test facilities to be constructed at Cape Canaveral and such studies are now commencing at Bangor for the support site statement.

#### CHANGES IN PROGRAM

Several changes, Mr. Chairman, have recently occurred in program objectives as a result of continuing DOD program reviews.

The Trident I missile, which is designed to be compatible with installation on our newest SSBN's has been slowed down somewhat in development for a period of about 10 months to be in phase with deployment on the first Trident submarine.

The development goal of the ——— designed to provide a flexibility option for the missile front end, has been changed from a ready for deployment status to demonstration of feasibility and compatibility. Both of these have reduced near-term funding and overall total program cost.

#### SUPPORT COMPLEX ON WEST COAST

The support complex operational (IOC)—initial operational capability—has been delayed about 1 year as a result of the selection of the site on the West Coast. The Trident system will be supported out of the Cape Canaveral site and the building yard as necessary during the test and evaluation period in the first year of operation.

In the system design work, we have developed a high assurance that we can attain and maintain the system availability. That availability is designed to assure an operational cycle of ———. Both crews will be utilized to outfit the Trident submarine during its time in port. The submarine will normally go into a drydocking once a year to insure good hull preservation. Past history of our SSBN's indicates 1.3 drydockings per year has been the norm with 30 percent of those drydockings unscheduled.

Mr. PATTERN. What does 1.3 mean?

Admiral LYON. That means on an average each submarine has to be drydocked 1.3 times a year.

Mr. LONG. In other words, four times in 3 years.

Admiral LYON. Yes, sir, in developing our system support site plans, we have critically examined all possible alternatives to optimize overall system cost effectiveness, both for the submarine, the missile, and the base. A summary of these studies has been provided to the committee staff.

I might mention, Mr. Chairman, that the British Navy, in independent studies several years preceding ours, arrived at essentially the same conclusions that our studies arrived at and have built a simi-

lar facility on the Clyde in Scotland to base their SSBN's. As has been announced, Mr. Chairman, the Trident support site has been located at the Naval Weapons Station, Bangor, Wash.

The Naval Weapons Station is located on the Hood Canal, an estuary off Puget Sound and within close proximity to the Bremerton Navy Yard. It is also located close to Keyport where we have a Navy Torpedo Test Station.

Mr. McKAY. If I may ask, aren't you a little inland? Can't you get trapped inside as we did in Pearl Harbor?

Admiral KAUFMAN. No, sir, I will talk to that later, if you wish.

Admiral LYON. In addition, Mr. Chairman, to operational advantages—which Admiral Kaufman will talk to later in the hearing—the site here also offers logistic advantages for maintenance and to assure the reliability of the system by the near proximity of the Navy Yard. You remember, last year one of our criteria was to have a Navy Yard as close as possible to the selected site. There also is a Navy hospital located just outside the Navy Yard. The distance from Bremerton to the Bangor site is about 15 miles.

There is an Air Force base located just south of Bremerton which provides logistic support and is capable of flying missile components in and out.

The Navy Torpedo Station at Keyport is our primary test station for the Mark-48 and Mark-46 torpedoes and will be capable of providing the Mark-48 torpedo support necessary for the Trident system.

Associated with the naval shipyard is a large naval supply depot which will be utilized to store and to issue spare components as necessary to the Trident system.

#### PLANNING FOR TRIDENT BASE

The maximum utilization of these and other resources in the area, Mr. Chairman, are being addressed in the development of an area master plan along with the Trident support site master plan.

Last year, Mr. Chairman, you provided us with \$13 million in planning funds to commence the project. This year we are requesting construction funds of \$118 million, reduced down from the figure that has been submitted to you, to accomplish work both at the Bangor site and at the missile test facility in Cape Canaveral, Fla. An additional \$10.8 million in planning money is also requested for this next fiscal year.

I respectfully ask the committee's support for this request.

Captain Stacey will now continue the briefing and go into the details of the plans.

Mr. SIKES. Very well.

Captain STACEY. Mr. Chairman, I will give you a short rundown on the facilities we have included in the program.

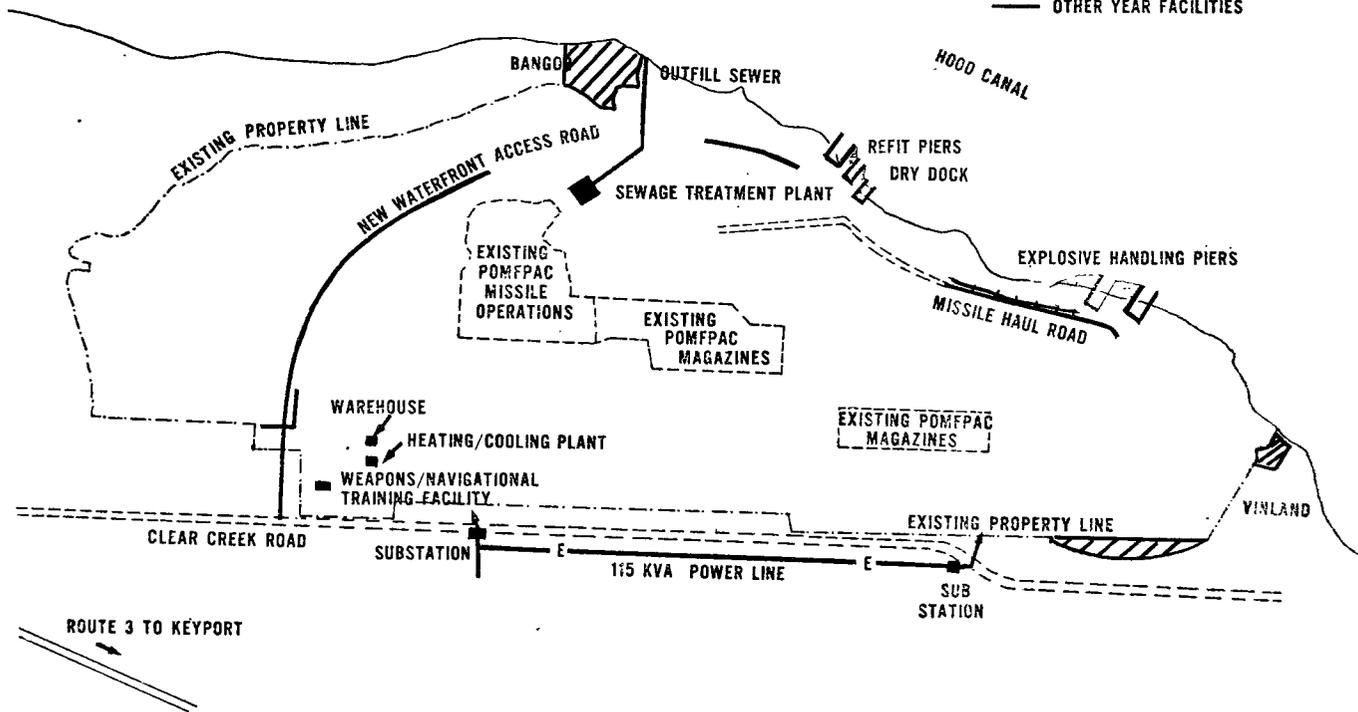
This first map is of the Bangor Annex of the Naval Torpedo Station, Keyport. Shown in heavy print are facilities in the 1974 program.

[Insert chart.]

# NAVAL TORPEDO STATION, BANGOR ANNEX



— FY 74 FACILITIES  
— OTHER YEAR FACILITIES



We are pointing north here. This is the Hood Canal on the left. We have waterfront facilities located in this area, including the explosive handling piers, refit piers, and a drydock. In the 1974 program we have one refit pier and one explosive handling pier.

In addition we have the weapon support and missile assembly areas, which will expand upon the existing Polaris facility area. We have the personnel training and the base support area in this vicinity, and a submarine support area in this vicinity.

The training facility in the 1974 program is located in this area. In addition we have site improvement and utilities. Included in the utilities are electric powerlines, coming into the base, substations and a sewage treatment plant at this point. We have included in the site improvement, an extension of roads here, a missile haul road and a railroad spur in this area. We also have a requirement for land in the 1974 program. The covered explosive handling pier is an all-purpose pier to provide offloading and onloading missiles without interruption in order to comply with the established operation schedule.

The refit pier and slip is a standard pier alongside which the Trident submarine will tie up during its refit period. The weapon navigational training facility is a training facility for the training of the crews of the Trident submarine.

This is one of the most critical projects in the program. The warehouse will receive and store the Government-furnished equipment and material that will be received early in the program. Utilities, as I indicated previously, include a sewage treatment plant, heating and cooling plant and other associated utilities, to tie in with the facilities that are provided in the first-year program.

We do have land acquisition and site improvement efforts as I indicated, the latter will extend the existing missile haul road, construct new roads and will include various earthwork in the functional areas.

#### CLASSIFICATION

Mr. SIKES. Let me interrupt you for a moment.

Captain STACEY. Yes, sir.

Mr. SIKES. How much of this material has been published and how much is classified secret, and cannot be released?

Admiral KAUFMAN. The material here?

Mr. SIKES. Yes.

Admiral KAUFMAN. That is all unclassified.

Captain STACEY. All that I have covered is unclassified.

Mr. LONG. If this is an unclassified situation, why is this session closed?

Admiral KAUFMAN. Sir, there will be information brought out which will be very classified in response to some of your questions.

Mr. SIKES. What we are talking about now are construction details.

Mr. LONG. Yes.

I would hope in the future that we could have these sessions mixed, the secret part dealt with, and then move into open session for unclassified aspects of construction details. I like my staff here; I feel strongly these things should be in the open.

All this business of holding secret sessions does, if we are not dealing with really secret information, is to make it very difficult to get a decent open discussion. The papers, the magazines all discuss this very

freely, and we Congressmen are supposed to go around hush-hush very quiet because we don't know what is secret and what is not and, naturally, we don't want to tell tales out of school.

Admiral MARSCHALL. Dr. Long, I think you will find as we go along this morning that it will be very necessary to have this a closed session because of the nature of things that Admiral Kaufman will address. He will make it clear just what is classified and what it not.

Mr. LONG. I understand there are aspects of Trident that are classified.

Mr. SIKES. The construction schedule which has been published is not classified. But it would be difficult in this session—we keep all the sessions open which we can—to switch back and forth. It is difficult to segregate the two, so that a part would be fully open and a part closed. I think it is better that way for this session.

Go ahead.

Admiral KAUFMAN. Mr. Chairman, if I may, sir, I have made unclassified statements which describe the entire program in concept to the entire committee—the Armed Services Committees of both the House and Senate—and if you would like, we will make that available to all the members of this subcommittee.

Mr. SIKES. We would like those.

Mr. LONG. I would like to ask questions and get answers which are on the record so far as military construction is concerned.

Mr. SIKES. I think at some point today you should tell us briefly just what this program is, so that members who do not feel familiar with the program will have a little better understanding of it. Take a few minutes later on to tell us exactly what this is all about.

#### TRIDENT FACILITIES

Captain STACEY. We are shifting to the flight test facilities at Cape Kennedy, a total of \$35 million, consisting of these five facilities. The wharf with related dredging is required because of the explosive quantity safety distance criteria which precludes the use of the existing piers.

This is the major facility in this group.

The missile checkout building, the guidance and telemetry building and launch complex efforts are additions, or modifications to existing facilities that are required to test the missile.

The lifting device proving facility is a facility to test slings and other ordnance handling equipment up to a total of 250 tons. Mr. Chairman, this is a very brief overview of the facilities in the 1974 program.

Mr. SIKES. Very well.

Mr. LONG. Are we going to be given a list of the construction items we can take back to our offices and study with our staff, Mr. Chairman?

Mr. SIKES. That will be available.

Mr. LONG. I find it hard to memorize all this.

Mr. SIKES. Admiral, will you proceed?

#### OVERVIEW OF TRIDENT SYSTEM

Admiral LYON. Mr. Chairman, Admiral Kaufman is prepared to give you the overview of the system, the purpose of the system, and what its mission will be and what it will be capable of accomplishing.

Mr. SIKES. That will be useful.

Admiral KAUFMAN. Thank you, Mr. Chairman. I came merely to back up Admiral Lyon. I have no prepared statement. I have been talking on this system 3 years and I think I can do it easily enough.

Mr. SIKES. At any rate, you know more about it than we do.

Admiral KAUFMAN. I am not sure. It does change every once in a while.

I will try to give you a short overview of what the Trident program is and then I will follow that up by providing for all the members of this subcommittee the unclassified statement which I gave to both the House and the Senate.

Mr. SIKES. That is fine.

#### OPTIONS CONSIDERED

Admiral KAUFMAN. First of all what is Trident? I might add here this is not a new concept. It developed from the old undersea long range missile system, which developed from a study which was completed about 1967 by the Secretary of Defense to view all sorts of options for a continued deterrent. He looked at Minuteman, bigger, more survivable hardened Minuteman, and so forth; more bombers, more sea-based deterrent. The sea-based deterrent with its survivability came out ahead and they elected to go for something more in the way of sea-based missiles.

Following on that at a very slow start, since the Polaris Poseidon complex was a very, very survivable one and very credible and still is and will be for some time to come yet, we think; we developed the submarine that we see today. We have looked at over 200 different designs. We have looked at all sizes of ships. We have had them as big as ———. We finally came to where we are in response to urgings by Dr. Foster to make sure we have more growth room for the missile—we don't shoehorn them in—that we provide for whatever we need in the lifetime of this ship in the same manner we did with the Polaris A1, 2, and 3 and the Poseidon. The ship has gotten larger in response to that need.

Mr. SIKES. Give us a comparison of the size of this ship and the others.

Admiral KAUFMAN. Yes, sir, I will show that next.

Mr. SIKES. Will you tell us why you got the name Trident?

Admiral KAUFMAN. Yes, sir.

ULMS was a very hard word to pronounce and I think Chairman Stennis said in the Senate it sounded more like a burp than a word. He asked for a different name. We told him we came up with a name which happens to be Trident, suggested by a member of my staff.

It happens to be the three-prong spear that is used by the god of seapower, Neptune and so forth. That is the name. It is also used by the Naval Academy for a number of their publications. It is recognized throughout the world. It is not named for the chewing gum that we see.

#### SIZE AND CAPABILITY OF TRIDENT SUBMARINE

This shows you the comparative size vis-a-vis the Polaris/Poseidon. The displacement of this ship is about ——— tons compared to about 8,000 tons for Poseidon. This one has 24 missile tubes.

This has 16. This has a very sophisticated and very much improved sonar in the bow. The sonar is capable to the same degree that our most advanced sonars in the advanced attack submarines are capable and gives us the capability to detect the future submarines which the Soviet may develop. This submarine (SSBN) will be able to pick him up ——— this one Trident will pick him up ——— for example.

This means that this submarine won't know ———.

Mr. LONG. Do you have to have a great big submarine to have the better sonar?

Admiral KAUFMAN. No, sir.

Mr. LONG. You could put the better sonar on a smaller submarine.

Admiral KAUFMAN. Yes, sir.

For example, if you took the ones we have today, you have to ——— change the way of putting ———. It would be a major change to the ship.

The other big thing we are doing to Trident is ——— propulsion plant. This ship literally is built with the technology of the 1950's.

#### BLOCK OBSOLESCENCE OF SSBN'S

You will recall that the first ship, the *George Washington*, was literally the U.S.S. *Scorpion*, an attack submarine when in 1948 and 1959 we chopped it in half and put a missile compartment in to get missiles at sea as an expedient. We built all 41 of those ships in a short span of 7 years, with 13 coming out in 1 year, 1963 or 1964. They all have compressed technology into that short-time frame so that when one is vulnerable; we may predict all are vulnerable.

When one is old they are all within 7 years of the same age. If we were to do it again on a planned basis I think we would be wise not to put them all out in the same block. This creates block obsolescence; we would do better to phase them and put improvements in them, 10 at a time, in the same manner that we are looking to the first 10 Tridents which can serve as replacements for the oldest ones of these. These SSBN's will be 20 years old by the time the first Trident can be available as fast as we can build it.

Mr. LONG. Admiral, that is not so much an argument for the Trident as it is simply for a more modern submarine.

Admiral KAUFMAN. Yes.

#### SIZE OF TRIDENT

Mr. LONG. I would hope that you could keep your arguments for Trident, which is such a huge submarine and has many features because of its size, apart from those arguments simply of aging.

Admiral KAUFMAN. Yes.

We do have to recognize the ship is older, it will age, it will need replacement.

Mr. LONG. This is a bonus, but not inherent in the Trident system.

Admiral KAUFMAN. And we did not just discover that the ship is going to be older.

That is not the reason for accelerating Trident per se. The one big thing, Dr. Long, if you will look at her, is the ———.

Mr. LONG. Is that a feature of Trident or something you want in any new submarine?

Admiral KAUFMAN. We would want it in any new submarine.

Mr. SIKES. That is the quiet submarine concept.

Admiral KAUFMAN. Yes.

Mr. MCKAY. Does that influence the size?

Admiral KAUFMAN. It absolutely does. We do it with —— which means to get the power out of the ship you have to have the ship size so you get a —— which requires a certain amount of size.

Mr. LONG. That much size.

Admiral KAUFMAN. It does not necessarily require that much size. When you go to missile tubes which will produce the range and carry the payload we have been examining the missile drives the diameter of the ship. So as long as you have that diameter you may as well use it to get your ——.

To answer, which controls the problem, they both control it. You have tradeoffs both ways.

Admiral LYON. Dr. Long, this submarine is driven in its total volume by the requirements of the size of the missile and the requirements of the number of missile tubes, and to achieve a submarine that is cost effective—that is able to put missiles at sea for less dollars. The propulsion plant has been scaled up to provide the capabilities—scaled up in power—that we want in this submarine to meet its mission requirements.

It in fact occupies about the same percentage of overall displacement as the reactor plant and propulsion plant in the Polaris-Poseidon submarine. The reactor compartment is approximately —— than it is in the other submarine.

Mr. LONG. You understand the thing that makes this very controversial as a submarine is the fact that really what you have here is almost a submerged battleship. Isn't that right? Does it compare in size with some of the older battleships?

Admiral KAUFMAN. No, sir, not in any shape, size, or form.

Admiral LYON. A submerged cruiser.

Mr. LONG. It is very big.

Admiral KAUFMAN. Yes, sir.

Mr. LONG. And very expensive.

Admiral KAUFMAN. And very expensive.

#### VULNERABILITY OF LARGE SUBMARINE

Mr. LONG. It has many features that are desirable. But it also, I think, is very vulnerable; too many eggs in one basket. There are those who claim that the Trident is going to be very much of a target, and once you have destroyed one you have destroyed something very, very expensive. Yet what we want is something in the ocean that will be hard to hit and, if hit, will not have been a loss of tremendous value.

Admiral KAUFMAN. Yes, sir.

Mr. LONG. I am very partial to the idea. There is plenty of room in the ocean, and what we ought to have is an awful lot of targets instead of a small number of very big juicy ones.

Admiral KAUFMAN. Yes, sir, this is a criticism and it is one we had levied at us in the Navy itself when we first started this thing. We have looked at the full spectrum of 8 missile tubes all the way up to 32 missile tubes per ship. We have looked at a full spectrum of threats and studied these to exhaustion, for SSN's, the likes of which we do not know how to design yet, the aircraft; very "hot" missiles that can go down the path of our own missiles and destroy us, and things like that. We have looked to all sorts of threats to try to find wherein the larger submarine would be more vulnerable as a system than is this one, the Polaris.

#### COST EFFECTIVENESS OF TRIDENT

We cannot find it. The other thing that we do find is that from the standpoint of cost effectiveness if we were to go to a full substitution of today's system (SSBN) here in time with age, with this type of ship, Trident, the bigger one with more missile tubes, would cost us several billion dollars less for the ship construction money alone than the one with 16 tubes with more platforms, because you pay so much for the inventory, the "real estate" of "getting into the strategic ball game," of having the ship, the reactor driving and all these things.

It is cheap to add missile tubes at a cost per ship of \$15 million per two tubes. That has been the consideration. The other thing, people say "what happens with SALT?" If that existing limitation stays with you and a threat comes up to where you want more platforms, the fact that we built the first 10 submarines with 24 in no way, shape, or form keeps us from cutting down on the number of missile tubes in later generations of submarines should we so desire to make more platforms to get within the maximum permitted by SALT.

Mr. LONG. At that time you will look pretty foolish having a few huge Trident submarines wandering around and with a very reduced number of platforms.

Admiral KAUFMAN. No, sir. We have yet to find a threat that can beat this one, Trident, down more than it can beat this one—SSBN—down, even with more missile tubes.

Mr. LONG. Do you have circulating around in your files, or your deliberations, some memoranda from people who have never been won over to the argument for a Trident, and who feel this is definitely a mistake, that it is too expensive for what you are getting, too vulnerable, too many eggs in one basket.

Admiral KAUFMAN. No, sir.

Mr. LONG. You don't have any?

Admiral KAUFMAN. Are you saying do I have memoranda or claims from people who say this?

Mr. LONG. Yes; or are there any people who said—independent-spirited people who think this is a mistake?

Admiral KAUFMAN. Yes. There is one testifying in the Senate, Admiral La Rocque, retired. He does not believe we need the Trident, CVN, or many other things and he is saying so.

Mr. SIKES. Does he want weapons of any kind?

Admiral KAUFMAN. I do not know what he wants. All I can say is that Admiral La Rocque has been a distinguished skipper of destroyers and cruisers and he has had extensive experience on staffs of schools and in schools and never served in a submarine.

To my knowledge I see no reason for him to understand what constitutes a threat thereto. I do not know how he can have any expertise.

[Discussion off the record.]

Mr. LONG. I think we are all trying to accomplish the same thing.

Admiral KAUFMAN. Yes, sir.

I might say you are looking here at Admiral Lyon and myself, at a true minority of the Navy in the submarines. We represent roughly 6 percent of the Navy. Yet, we represent a tremendous drain on the Navy when we start talking to systems like this.

Bear in mind that Admiral Zumwalt, a surface ship officer and Chief of Naval Operations, really needs other ships. If you do not think we have been through the most searching type of investigation—

Mr. LONG. Surely. I am very sympathetic to the submarine concept. To me it makes more sense than vulnerable aircraft carriers and all that.

I am wondering whether a new submarine has to be a Trident or whether we should have an increased number of smaller ones.

Admiral KAUFMAN. We have really looked at it very hard.

#### COST OF TRIDENT VERSUS OTHER ALTERNATIVES

Mr. SIKES. Why don't you give a short rationale on the reason you want to go to the bigger ship and the more expensive ship, one which, if lost, would mean you would lose the equivalent of a number of smaller ships.

Admiral KAUFMAN. Yes, sir.

First of all, let us examine the cost of the U.S.S. *George Washington*, which was built in 1959-60. The cost was then for that representative-type ship about \$93 million.

Mr. LONG. When was it built?

Admiral KAUFMAN. 1959-60.

Mr. OBEY. What would the cost be in today's dollars?

Admiral KAUFMAN. \$168 million, escalated with nothing else included. I may be off a couple of million. We just dug that out in response to a query. That is doing nothing as far as making it a Poseidon submarine.

Now, then, to put in the capability of Poseidon, to go to that submarine and build a new submarine today—that is, the SSBN-640 class—for the lead ship, the *Will Rogers*, it would cost about \$270 million through the program years that it would take to get it, which would be 1978, if we started now.

Mr. LONG. And there would probably be a big cost overrun.

Admiral KAUFMAN. I am saying that is the first ship. The follow-on ships would be about \$230 million. We have computed these and gotten the estimates on them and it takes that kind of money.

Mr. SIKES. So you are talking about one Trident or four Polaris/Poseidon.

Admiral LYON. No, sir.

Admiral KAUFMAN. No, sir, I am not.

Mr. SIKES. Costwise. You said \$230 million.

Admiral KAUFMAN. Trident is not a billion-dollar submarine, Mr. Chairman. That has been said by Admiral La Rocque and others and I am glad to have the opportunity to refute that.

Mr. LONG. This is a very interesting point you are raising right now. Let us talk more about that.

Admiral KAUFMAN. Yes, sir. The cost of the program for 10 ships and the base is about \$12 billion. Last year it was presented at about \$13.5. So the critics say "10 into 13.5 gives you \$1.3 billion per submarine. That is more than the most expensive nuclear aircraft carrier, CVN-70 at a billion dollars." They are not counting the F-14's, the Phoenix missiles, the R. & D. for the ship, or the base cost or anything like that. We are showing you the total systems costs in this thing, so that when you divide the number of ships into that, you come up with what appears to be an expensive ship.

You divide the same type of thing with any other ship, all the support and weapons and everything else, you come up with a different thing.

The ship's construction money (SCN) for the follow-on ships of this of this 10-ship force, to further equate it to other shipbuilding, is less than \$500 million, including escalation through the building years all the way through to 1978.

Mr. SIKES. That is the follow-on ship.

Admiral KAUFMAN. Yes, sir.

Mr. SIKES. The average taxpayer is still going to divide 10 into whatever the cost is and get about \$1 billion a ship. That is the most important part of it. You are going to have an expensive ship which will cost, give or take a few hundred millions, a billion dollars, including the total system costs which we would not have if we were not going to build the ship. We may as well face up to the fact that it is a very expensive item. Tell us why it is better to have one of these than four or even three of the Polaris/Poseidons.

Admiral KAUFMAN. I have not added missile costs into the Polaris/Poseidons.

Mr. SIKES. Have you added the missiles into the Trident?

Admiral KAUFMAN. Yes, in that \$1 billion cost, the missiles and everything are in there.

Mr. SIKES. If you add them into the Polaris/Poseidon, what will it cost?

Admiral KAUFMAN. Really what we are talking about here——

Mr. SIKES. In today's money.

Admiral KAUFMAN. Probably —— per missile, that would be —— that.

Admiral LYON. —— per missile.

Admiral KAUFMAN. \$100 million then. It makes it some \$300 million. I have my tenders and all that. I would have to develop the full system cost.

Mr. SIKES. Will you have to have tenders for Trident?

Admiral KAUFMAN. No, sir, we will not have tenders for Trident. That support is provided by the base.

Admiral LYON. Mr. Chairman, we have presented to you the total program cost. What he is talking about here is the equivalent cost for only the submarine portion of the total system.

To give an equivalent total program cost for Polaris/Poseidon versus Trident you would have to include floating drydocks, training facilities, missile weapon facilities, personnel, deployed tenders, piers and all the facilities that are in being to support that system and new ones that would have to be provided.

We have looked at tradeoffs between all types of systems. We studied this program in all of its complexities for 2 years.

Mr. SIKES. I understand your zeal for the program and I support the program. I have to keep my feet on the ground.

Admiral LYON. Yes, sir.

Mr. SIKES. I want to know whether you get two or three or four Polaris/Poseidon for the cost of a Trident.

I want the record to show—this committee's record to show—why it is better to have one Trident than two, three, or four other ships.

Mr. NICHOLAS has a question.

Mr. NICHOLAS. Tell me if this is a reasonable assumption. Under the strategic arms limitations you are basically limited to replacement submarines. So it would be a question of replacing, with the most modern Poseidon weapon system you have, 10 of the older Polaris submarines, which cannot be updated, and which do not have Poseidon missiles, or replacing them with the Trident system, actually a lesser number of Trident boats. It is a question of trading either one of them off.

To some extent you would be able to use existing support facilities. To some extent you have to beef up some of your older Polaris support facilities in order to be able to handle the Poseidon missile. In addition to that, you would have to buy new Poseidon missile equipment for each of the 10 submarines. What other costs would there be aside from those that I have mentioned?

Would there be substantial additional R. & D. costs?

Admiral KAUFMAN. To just make more Poseidon ships?

Mr. NICHOLAS. Yes.

Admiral KAUFMAN. No, not if you want Chinese copies of the ships we built before. There would not. On the other hand what we are trying to point out is that this ship has noise sources which we cannot correct without building a new ship and a new propulsion plant.

Mr. NICHOLAS. Could you include in the record the comparative cost of doing that on a replacement basis?

Admiral KAUFMAN. Yes, sir. I will provide the information for the record.

[The information follows:]

Assuming that the current strategic arms limitations held indefinitely into the future, the 10 oldest Polaris submarines could be replaced by 10 new Poseidon submarines, each having 16 missile tubes. The cost to build these 10 new submarines with either a Poseidon or Trident I missile capability would be about \$2.34 billion (without missiles).

If 24-tube Trident submarines replaced the first 10 Polaris submarines only seven would need to be built to provide approximately the same number of replacement launch tubes (168). The cost for these seven Trident submarines would be about \$3.78 billion.

Rough acquisition cost figures for these options to replace the 10 oldest Polaris submarines are summarized in the following table :

(a) Ten new Poseidon submarines, each with 16 Poseidon missiles, supported from a shore base at Charleston.

Submarine :		
R. & D.....	-----	Insignificant.
Procurement (10).....	-----	\$2, 340, 000, 000
Missile :		
R. & D.....	-----	Insignificant.
Procurement .....	-----	-----,
Poseidon .....	-----	-----,
Base : MILCON.....	-----	\$110, 000, 000
		<hr/>
Total .....	-----	-----,

(b) Ten new Poseidon submarines, each with 16 Poseidon missiles, supported from a submarine tender.

Submarine :		
R. & D.....	-----	Insignificant.
Procurement (10).....	-----	\$2, 340, 000, 000
Missile :		
R. & D.....	-----	Insignificant.
Procurement .....	-----	-----,
Poseidon .....	-----	-----,
MILCON .....	-----	0
Tender : Procurement.....	-----	172, 000, 000
		<hr/>
Total .....	-----	-----,

(c) Ten new Poseidon submarines, each with 16 Trident I missiles, supported from a shore base at Charleston, S.C.

Submarine :		
R. & D.....	-----	Insignificant.
Procurement (10).....	-----	\$2, 340, 000, 000
Missile :		
R. & D.....	-----	2, 690, 000, 000
Procurement (160 Trident I).....	-----	1, 410, 000, 000
Shore Facilities : MILCON.....	-----	156, 000, 000
		<hr/>
Total .....	-----	6, 596, 000, 000

(d) Ten new Poseidon submarines, each with 16 Trident I missiles, supported from a submarine tender.

Submarine :		
R. & D.....	-----	Insignificant.
Procurement (10).....	-----	\$2, 340, 000, 000
Missile :		
R. & D.....	-----	2, 690, 000, 000
Procurement (160 Trident I).....	-----	1, 410, 000, 000
Tender : Procurement.....	-----	172, 000, 000
Shore Facilities : MILCON.....	-----	46, 000, 000
		<hr/>
Total .....	-----	6, 658, 000, 000

(e) Seven Trident submarines, each with 24 Trident I missiles, supported from a shore base.

Submarine :		
R. & D.....	-----	\$582, 000, 000
Procurement (7).....	-----	3, 780, 000, 000
Missile :		
R. & D.....	-----	2, 690, 000, 000
Procurement (168).....	-----	1, 480, 000, 000
Base : MILCON.....	-----	543, 000, 000
		<hr/>
Total .....	-----	9, 075, 000, 000

Mr. SIKES. Supply for the record the cost of a submarine similar to the Trident but with 16 instead of 24 missiles?

[The information follows:]

A 16 tube Trident type submarine will cost about \$423 million (without missiles). A 24 tube Trident submarine will cost about \$483 million (without missiles).

#### ADVANTAGES OF TRIDENT OVER ALTERNATIVES

Mr. SIKES. Tell me why you want one of these instead of two, three, or four of the others?

[The information follows:]

The construction of submarines comparable to our present SSBN's for the purpose of replacing these SSBN's has been considered and rejected, mainly because of the inability to incorporate into a hull of that size, needed technological improvements. We would be unable to incorporate the advanced sonars, larger propulsion plant, and larger missiles in such a hull. As is the case with our present SSBN's, there would be no available growth room for future technological advances, something which will be available in the Trident submarine. In general, construction of another class of Poseidon submarines would not be advancing the capability and survivability of our sea-based strategic force to the limits of our technology and would result in a self-imposed obsolete system.

Today's SSBN's have technological deficiencies which cannot be corrected by backfitting. Even with the programmed improvements, the installed sonars (AN/BQR-2 and the AN/BQR-7) do not have the capabilities which will be incorporated in the Trident submarine sonar suit. Not only will \_\_\_\_\_ detection be greatly improved \_\_\_\_\_ processors will be installed to provide Trident with a sonar suit which will have, at a minimum, the detection and classification capabilities of the passive portions of the AN/BQQ-5 system being installed on the 688 class SSN. In conjunction with this sonar suit, quieting techniques will be employed including \_\_\_\_\_ and many others which are expected to provide the Trident submarine with radiated noise levels approximately \_\_\_\_\_ lower than those of our most modern SSBN's. The net effect of the sonar suit and reduced radiated noise should provide an acoustic advantage over postulated threat submarines and permit early detection of ASW threat vehicles, both surface and submarine, allowing time for avoidance actions.

One of the more prominent technological improvements which will be incorporated in the Trident submarine is the \_\_\_\_\_ plant which is expected to provide a maximum speed \_\_\_\_\_. The desirability of such a plant, which cannot be backfitted into our present SSBN's, is based on many considerations. A \_\_\_\_\_ knots would allow the Trident to "sidestep" the threat posed by a rapidly advancing search force (for example, an ASW task forces). Successfully avoiding threats is key to Trident survivability.

If contact is never made, it need not be broken. Increased maximum speed drive an enemy to use of higher speeds \_\_\_\_\_. In turn, such higher speeds degrade sonar performance, and if sufficiently high, may make effective sonar use impossible. Control of the ship during control surface casualties, high sea states, flooding casualties, and weapon evasion are all dependent on the maximum power capabilities of the propulsion system. The \_\_\_\_\_ SHP plant provide ample acceleration/backing power. The long-range Trident missile provides vast ocean areas from which missiles may be launched. In order to reach all of these areas from Conus ports (in a normal patrol) the Trident must be able to transit \_\_\_\_\_ at higher speeds than would be available with the present SSBN plants. The inability to use all the area made available by the missile places a self-imposed limit on our survivability even with a C-4 backfit into Poseidon. Should an improved speed capability be desired, it cannot be obtained by backfitting a new propulsion system into our present SSBN's. Another important point to consider is the \_\_\_\_\_ feature of the propulsion plant.

Mr. SIKES. Tell us why, briefly.

Admiral KAUFMAN. I want one of these because it will stand up against a future threat that can negate the SSBN.

Mr. OBEY. What kind of threat would that be?

Mr. LONG. Are you comparing that with a Chinese copy of this one, or a new type of smaller submarine that you could build using all your best brains and ingenuity?

Admiral KAUFMAN. We have compared it with both.

In other words, one like this but make it larger as necessary.

Mr. LONG. You have a somewhat smaller submarine.

Admiral KAUFMAN. Yes, sir. We have looked at this. One other point I have not mentioned is that this ship has greater speed, not a whole lot more.

Mr. SIKES. How much more?

Admiral KAUFMAN. ——— knots more. ———.

The idea that we drive the enemy up to ———.

Mr. LONG. Admiral, you mean you cannot build a smaller submarine which would not be as fast or faster than the big submarine?

Admiral KAUFMAN. Yes, sir; we can do that by doing various things. One, making the missile smaller; in other words, using the missiles we have.

Mr. LONG. Smaller or fewer?

Admiral KAUFMAN. Smaller and fewer.

Mr. LONG. You cannot make one which would have a smaller number but just as big a missile?

Admiral KAUFMAN. Yes.

I can cut this down to 16 or 12 tubes and make the ship smaller.

Mr. LONG. But faster even than a big one?

Admiral KAUFMAN. It would get faster ——— for every four missile tubes. It would be ——— faster if we took off eight.

Mr. LONG. You could conceivably have a smaller ship which would have fewer missile tubes, but which would be even faster than either the old SSBN or the new Trident you are projecting here.

Admiral KAUFMAN. Yes, it would be larger than the old Polaris/Poseidon.

We have done this in our tradeoffs through at least 20 various, different type designs and have gone through barrages of studies. I have been in it 3 years and there is no new question on it. This one comes out ahead for the things we are trying to do to have the longer range and equivalent payload of the Polaris/Poseidon.

Mr. LONG. It is not just us, but many others are going to hit you with this issue.

Admiral KAUFMAN. Yes, sir; we are hit all the time.

#### VULNERABILITY OF TRIDENT BASE

Mr. LONG. For one thing, this base that you are building—is that the only base that can handle this?

Admiral KAUFMAN. Yes, sir, when we build it. You could build another one in any of the four places on the Atlantic and here.

Mr. LONG. That puts your eggs in one basket just from the standpoint of vulnerability of the base. Any time anybody wants to knock out the base in Bremerton you are left with the whole Trident system without a base, is that not right?

Admiral LYON. No, sir.

Mr. LONG. Doesn't that cut off your lifeline; is it possible to cut off your lifeline?

Admiral KAUFMAN. You are talking in terms of war, then?

Mr. LONG. Of course.

Admiral KAUFMAN. No, this is a deterrent, designed to prevent war. We have the same problem with the SSBN's now, what is the difference between one base versus four in today's type of warfare?

Mr. LONG. You are thinking of a 15-minute war and no repeats or no reloads.

Admiral KAUFMAN. Unless you do something like that, then Bangor is about as survivable as any base you can have and one base versus two does not make that much of a difference.

Mr. SIKES. I would like for you to get around to the answer to my question. Why do you need one rather than three?

Admiral KAUFMAN. I am not sure that the numbers would come out that way, sir.

Mr. SIKES. You have to start somewhere.

Admiral KAUFMAN. But more anyway. We are saying you would have more of the Polaris as compared to the Trident.

Mr. SIKES. And you would have 16 tubes in one with a smaller missile, and 24 in the larger one?

Admiral KAUFMAN. Yes, sir. With the larger missile capability.

Mr. SIKES. You have 48 smaller tubes instead of 24 larger tubes.

Admiral KAUFMAN. It is three for two in the way of missile numbers.

Mr. SIKES. If you have 24 in 1 ship, 48 in 3, are the 24 of the larger missiles equivalent of the 48 of the smaller missiles now in use on Polaris/Poseidon?

#### TRIDENT MISSILE

Admiral KAUFMAN. No, sir. The difference in the missile, next thing coming, is one of the big factors. We are developing two missiles. The first missile is identical in size, with exception of the weight, to the Poseidon missile we have today. It is a 34-foot-long missile by 74 inches in diameter, and it will have a nominal range, ———, of about 4,000 miles. ———. The present range of Poseidon, for example, ———.

#### PATROL AREAS

With the same type of payload or weight you can get with these weapons, ——— you get about 2,200 miles. So with the same payload this C-4 missile—and I hasten to say it can fit into here [pointing to SSBN]—can shoot twice the range, which means you have roughly four times the ocean area to put this ship (Trident) into hiding. Or putting the smaller missile, the first missile we develop (if we elect to do it and have to do it), in these (SSBN's), you could get it in the same area.

Mr. SIKES. You have much more flexibility about where that ship can be in the ocean and can still be an effective weapon.

Admiral KAUFMAN. Exactly. Let me go on from there. Because of the nature of the propulsion plant design in this (Trident) versus this (SSBN), this ship [pointing] can't make a ——— we are dealing with now and can see around the corner. ——— it can make on patrol—really a finite period of time because we are going to have men on the ships and men have to come back—in this one today, with the same range missile in it, we cover about four times the area on

patrol than this one from the standpoint that this Trident can patrol ———. This is a real big advantage. So you measure that survivability, if you will, in terms of the area that the ship can patrol, that the enemy perceives he will be patrolling.

Mr. SIKES. So that makes it a much more effective deterrent?

Admiral KAUFMAN. Yes, sir, exactly. It is credible.

Mr. SIKES. What about her range? What is the comparative range in cruising capability between the two ships?

Admiral KAUFMAN. You mean in miles?

Mr. SIKES. Miles, knots, whatever.

Admiral KAUFMAN. At a quiet speed.

Mr. SIKES. At normal cruising speed for a submarine on patrol.

Admiral KAUFMAN. Let's take, for example, a submarine leaving Charleston, S.C., here. Unfortunately this map is for the Pacific, which applies to later discussion.

This Polaris submarine, going at quiet patrol speed of about ——— the submarine in a 60- or 70-day patrol can reach down to about here [pointing] by the time he has to go back. The Trident submarine will be able to go all the way down to here. Does that give you a grasp of it, sir? At the ———.

Mr. SIKES. You are saying about half as much again?

Admiral KAUFMAN. Yes, sir.

Mr. TALCOTT. Is there a quiet speed and a not so quiet speed?

Admiral KAUFMAN. Yes, sir. ———.

Mr. TALCOTT. It is a decibel count ——— that causes the noise?

Admiral KAUFMAN. Yes, sir, the noise ———.

#### CREW

Mr. SIKES. What is the comparative size of the crew?

Admiral KAUFMAN. The comparative size of the crew. Admiral Lyon's estimate is roughly 10 percent more for this ship. I wouldn't hang my hat on that, because from our experience, on particular size of crews before we came out with detailed design, we don't have a good track record. I think we will need more and he thinks we will need less.

Mr. SIKES. Would you resupply at sea?

Admiral KAUFMAN. No sir.

Mr. SIKES. It would not be necessary?

Admiral KAUFMAN. No, sir.

#### DEPLOYMENT SCHEDULE

Mr. SIKES. What is the length of cruise before she would have to be resupplied?

Admiral KAUFMAN. I would plan on it being ——— days. As Admiral Lyon stated earlier, ——— days out, ——— days off patrol ——— days in port for refit period and 5 to 7 days for sea trials and loadout.

Mr. SIKES. How does that compare with the Polaris/Poseidon?

Admiral KAUFMAN. Here is the cycle right here, sir [pointing]. This compares with Polaris/Poseidon, the total availability for Trident we are planning is about ——— of the life of the ship that it will be

at sea, survivable, ——— as compared to about 50 percent that we have enjoyed over the past with Polaris.

Mr. SIKES. Could she be resupplied at sea if necessary?

Admiral KAUFMAN. No, sir. I say no, sir. It wouldn't be practical. If necessary, you could tie it up to a tender that is anchored somewhere in the same manner that the Soviets tie up some of their ships or that we do ourselves at advanced bases. But we are not designing a tender to do that, so it would be a difficult thing. It would not be able to handle the large missiles, for example.

#### TRIDENT VERSUS ALTERNATIVES

Mr. LONG. I would feel happier about your comparisons if you would also have a third column of estimates of what a new smaller type submarine could achieve. Because I think it is really unfair to compare Trident with an obsolete Polaris/Poseidon. Rather, you ought to compare what performance you could develop if you went in for a smaller submarine.

Admiral KAUFMAN. We have done that.

Mr. LONG. I think it ought to be presented to us here.

Admiral KAUFMAN. We have presented it to the armed services and Appropriations Committees.

Mr. LONG. I am very unhappy about your giving us what seems to be a loaded comparison.

Mr. SIKES. Is the Polaris/Poseidon an obsolete submarine?

Admiral KAUFMAN. It is not.

Mr. SIKES. I haven't heard it called that.

Admiral KAUFMAN. It is not.

Mr. LONG. When was it built?

Admiral KAUFMAN. The first was in 1959.

Mr. LONG. When was the last one built?

Admiral KAUFMAN. It was commissioned in 1967.

Mr. LONG. There is a long leadtime on this.

Admiral KAUFMAN. Very long leadtime.

Mr. LONG. You would not build new submarines, as you say, Chinese copies, of this one. You would go in for the newest and best.

Admiral KAUFMAN. You and I wouldn't, but there are a lot of people who would.

Mr. LONG. You are talking, I would hope, to a reasonably sophisticated group. If you are going to make a comparison, it ought to be the Trident versus the best you could do if you went out to build a smaller submarine to achieve these missions.

Admiral KAUFMAN. We can provide you with the information we went through on our studies. Bear in mind after we discarded that type of idea we haven't progressed to the point we have in Trident with a design or anything else; so you don't know as much about it.

Mr. SIKES. Isn't the more important thing the fact that the Navy is supporting the Trident and the Department of Defense is supporting the Trident. The only choice that is before the Congress is whether it approves the Trident.

Admiral KAUFMAN. Yes, sir.

Mr. LONG. I don't think that is the only choice. I think you are going to have a real question whether we shouldn't move ahead on an improved Poseidon/Polaris system.

Admiral KAUFMAN. Let's make sure you understand that we have steel that has been built for the reactor plant. We got long lead time money, \$311 million last year.

Mr. LONG. You mean you have done so much on Trident you are committed to it? Is that it?

Admiral KAUFMAN. I wouldn't throw it away, sir.

Mr. LONG. In other words, you put Congress in something of a bind, and I think you put yourself in something of a bind.

Mr. SIKES. Congress approved this concept earlier.

Admiral KAUFMAN. Congress approved this, Dr. Long.

Mr. LONG. Congress may do things it ought not to.

Admiral KAUFMAN. In the normal manner of approval and hearings we have gone through all of this, shown the matrices of our studies to the Congress, and have gone through it I would say also "ad nauseum" with various committees and staffs for years.

Mr. SIKES. You have gone through this in the Navy and with the Department of Defense, and to some extent with staff and Members of Congress. Now tell us in 1, 2, 3, 4, 5, 6, order the disadvantages of the smaller version of the Trident.

Admiral KAUFMAN. The disadvantages of the smaller version of the Trident?

Mr. SIKES. Or the souped up version of the Polaris/Poseidon.

Admiral KAUFMAN. The disadvantages of the smaller version really vis-a-vis the larger Trident are none. Let me make clear what I am saying.

Mr. SIKES. I want you to be sure what you are saying.

Admiral KAUFMAN. Yes, sir. I am saying one with less tubes, for example, operationally has no disadvantage, and to people like Admiral Lyon and myself as submariners operating them, have some advantages in that they are slightly faster, they are slightly more maneuverable, more controllable as you get smaller. For example, the *Scorpion* I commanded was a far cry from the *George Washington*, which was the same thing with the missile compartment in it, from the standpoint that one was an attack submarine and the other literally a slow speed submarine by comparison.

Mr. LONG. You haven't mentioned another advantage—the great dispersion if we have this smaller one. To me that is a great advantage.

Mr. SIKES. Would the smaller one cost half as much as the big one?

Admiral KAUFMAN. It doesn't come to that at all. Ship construction money of a Chinese copy, if you recall, comes to half of the Trident amount.

Mr. SIKES. What is the cost of smaller ones?

Admiral KAUFMAN. In the studies that we did—I am going to have to go back, thinking about 3 years back now to the results of the studies we did to compare smaller submarines with a reactor, for example, \_\_\_\_\_ of the one we have here but \_\_\_\_\_.

Mr. SIKES. And sonar?

Admiral KAUFMAN. With sonar, yes, sir, good sonar. I am thinking in terms of—it was over \$300 million for the small one, and I would say \$310 to \$320 million and probably about \$340 million some for the larger ones. Then what has happened, as we got the one with the larger power plant, then these things don't come neatly in the progression. We came up with the ship the Navy sponsored and said, "We want this ship with \_\_\_\_\_ inch diameter missile tubes." That is smaller than we

have. We have ——— now. Where did that come from? It comes through the evolution. Once we came up with a ship, Dr. Foster and his people said again, "don't shoehorn the missiles and the tubes. We would like it to be bigger." Some people want as much as ——— feet. We compromised and showed them an ——— inch tube and showed them it is adequate to do anything that might be conceived desirable by the President whoever he is in the future. We finally got that accepted, but the ship grew and the cost for obvious reasons grew. The smaller ship would do the same thing. What I am saying, we are talking about basically the difference in power plant which would give us about ——— knots more speed.

Mr. SIKES. Would this new version require all of the new facilities that the Trident will require or could you use existing facilities?

Admiral KAUFMAN. It would require new facilities because we are going to a higher density propellant. The real big name of the game here in R. & D. costs for Trident is the missile. The missile is being developed to give us twice the capability in the same size we have today.

Mr. SIKES. In other words, all of that would be required to deploy the same type of missile but in a smaller submarine. So, you are talking about two-thirds to three-fourths the cost?

Admiral LYON. For an equal number, yes, sir. But you see 18 Trident submarines are equivalent to 31 of the smaller ones in deployment and time at sea.

#### COST EFFECTIVENESS

Mr. SIKES. I want the record to show whether there is any economy as far as cost is concerned.

Admiral KAUFMAN. I think it obvious. We go, and have gone with one committee alone last year, something like four times, about 6 hours a day, on just this sort of thing. I think Admiral Lyon can provide for the record a comparison that will show what we would do with these things and why this is cost effective.

Mr. SIKES. What we want to know is whether there is a significant savings or cost for a smaller Trident type to achieve the same type of capability the Trident achieves?

Admiral KAUFMAN. Yes, sir.

[The information follows:]

The cost of a new smaller (16 missile launch tubes) ballistic missile submarine would be about 80 percent of the planned cost of a Trident submarine (24 missile launch tubes) assuming both submarines would carry the same size/weight missile. With projected availability for Trident, a 10-ship force will provide ——— at sea. To provide the same missiles at sea with a smaller submarine (16 missile launch tubes) and same system availability, a force of ——— additional submarines and crews would be required. The acquisition cost for these additional ships would equal the cost of ——— Tridents. This would be significantly more costly than Trident. In addition, life cycle operating costs for this force of smaller submarines would approach half again the life cycle operation costs of the 10-ship Trident force.

The choice of the number of tubes that Trident should carry has also been the subject of intensive examination from the viewpoint of threat to the submarine and the missile itself. Recent studies indicate that for the probable projected threats through the year 2000, the survivability of Trident missiles is fairly insensitive to the number of tubes the submarine would carry for a total force of more than 430 launch tubes. This is to say that, against both threats to the sub-

marine before launch and to the missile after launch, the probability of missiles hitting the target would be about the same whether fired from more submarines firing fewer missiles or fewer submarines firing more missiles.

Mr. SIKES. Not a modernized Polaris/Poseidon.

Admiral KAUFMAN. What I would like to do here is provide you the information that we have already developed, at great length and for many months, so the ship will be representative but not exactly the same ship.

Mr. SIKES. But you are not going to get a bargain rate if you go to a smaller type.

Admiral KAUFMAN. You are not going to get a bargain rate if you go to Polaris. The Polaris/Poseidon has cost a total of about \$17 billion in the last 10 years.

[Discussion off the record.]

#### TOTAL SYSTEMS COST COMPARED TO OTHER PROGRAMS

Admiral KAUFMAN. I would like to say for the record that I was asked the question the other day in a Senate hearing—the statement was made that “you are going for \$1.7 billion this year and going to \$2.5 the next 2 years; there has never been any defense system that has required this much.”

Just a quick cursory look was made by one of my officers yesterday at this sort of thing. I said: “Look at Minuteman and Polaris back in 1962, 1963, and what happened when we escalated the costs up?” Polaris is comparable, and Minuteman is more than what we are spending. It was, in fact, in those “good dollar” years about \$1.4 billion the first year and \$2.3 billion or \$2.0 billion the next 2 years for Minuteman. So the other important thing was, with regard to something you look at, like the gross national product, Trident over the next few years comes out something like 0.13 percent, and those systems came out to about 0.3 percent in those years. So I think we all agree the cost is fantastically high for any system. B-1, as a comparison system, is programed for somewhere around the same that we are talking about here for the total systems cost.

#### VULNERABILITY OF SHIPS AT BANGOR BASE

Mr. SIKES. Let's talk a little about vulnerability. You are saying because she is a quiet submarine, she is a fast submarine—

Admiral KAUFMAN. This [pointing to Trident] is a faster submarine.

Mr. SIKES. I understand. Once she gets out at sea she is much less vulnerable than the current type of submarine that we have?

Admiral KAUFMAN. Yes.

Mr. SIKES. That is very much a plus. Then the area of greatest vulnerability would be when she is at her dock; and what is your potential for getting her out to sea once there are danger signals? I don't mean once there is a missile launch. That is too late to get her very far. But when the danger signals are such that we feel there is a serious threat developing, how long is it going to take to get her out to sea, away from the vulnerable position next to her port or where the channel could be bottled up so she can't even get out.

Admiral KAUFMAN. I think it will be more here in this particular port than any port we could put it in.

Mr. SIKES. More what?

Admiral KAUFMAN. The chances would be more optimal of getting it out than it would be in others.

Mr. SIKES. Why?

Admiral KAUFMAN. Here is where we are right here [pointing to Bangor]. I can dive this submarine right off the pier. Literally.

Mr. TALCOTT. To what depth?

Admiral KAUFMAN. One hundred or two hundred feet. There is about 300 feet of water right off this pier. I wouldn't do that necessarily. There is a bridge up here. But I can dive under it. It is a floating bridge. I could go under it. I can't say I would. I could if I had to. I can put this submarine in, back away and go down where we are "lost." Roughly it is around here [pointing], 80 miles from international waters where we now have—not here but off Charleston and Guam, Soviet AGI's patrolling, a number of Soviet vessels patrolling, ——— in some of these places now; and this being almost 20 miles across here, deep water, I can run out of here. And, for example, there is an average of ——— like this. They need not know when you are coming out, contrary to what you do in other places.

#### RUSSIAN ANTISUBMARINE COVERAGE

Mr. SIKES. You realize you are going to generate submarine patrols off the west coast now don't you?

Admiral KAUFMAN. Require what?

Mr. SIKES. Russian patrols.

Admiral KAUFMAN. And that is exactly the reason we picked it, to give you two oceans they have to worry about instead of concentrating in one where we have everything now.

Mr. TALCOTT. Wouldn't it be difficult if you had a sunken merchant ship in the strait there?

Admiral KAUFMAN. No, sir. The large surface ships run up here. That is big and it is deep. The merchant ship doesn't exist that would clutter this place.

Mr. OBEY. Wouldn't it be easier because of the geography of the Soviet Union for them to operate in the Pacific much more easily than they could in the Atlantic?

Admiral KAUFMAN. Again this is precisely the reason. Where are your bases in the Pacific for the Soviets? Vladivostok, Petropavlovsk. Where are they in the Atlantic? One of the things we have been seeing very much in the last few years is ———.

I have taken here a typical existing aircraft today, the Bear aircraft, and it is capable today and does come down here [pointing to chart] on ASW sweeps. I have given 3 hours on station to give time to prosecute contacts. Right now it can blanket the ——— but it can only look at part of the ———. In most of the area we are going to be patrolling with Trident, they can't get forces up to it, ——— they don't have a base complex that can threaten the Pacific. We have even given credit ——— which I don't think they are capable of having. That is not in the broad Pacific area.

There are other criticisms. I see you are reading one which I would assume is Dr. Scoville's article.

Mr. OBEY. No.

Admiral KAUFMAN. He has said, for example, they can put SOSUS here, have access to the Pacific with SOSUS.

Mr. OBEY. What is that?

Admiral KAUFMAN. The long-range sonar detection monitoring surveillance, sonar surveillance system. ———.

———. For example, in a basin here the ———. Our own SSBN today would be about ——— of that. Compared to our SSBN which could be detected about ——— of that radius, the Trident would be detectable about ——— of that radius. So he is going to have to have these things over on our coast. Yes, he can run cables quicker, easier. He can run a 100-mile length of cable here [pointing]. If he has SOSUS capability he would. Around here they are saying he would have to run all the way around here [pointing]. My question to Mr. Scoville is ———

Mr. OBEY. The article I am referring to is not Mr. Scoville's. I haven't read the article you are talking about.

Admiral KAUFMAN. He has made this comment. If we were to base it in the Atlantic, Mr. Obey, he would be making a criticism about it being so shallow you have to run a long way under the surveillance of the Soviet AGI's.

#### TARGETING

Mr. OBEY. What targets do you have in the Soviet Union more reachable from the Pacific?

Admiral KAUFMAN. You are making my brief for me, sir.

Bangor is here [pointing to slide]. I have shown here the arcs of range for the missiles. Trident missiles will have maximum range, ———. The ocean area you get here is fairly small because you are constrained to the landlocked archipelagos here, ———. You can go through it but for ease of showing we have shown about two-tenths for this missile range all the way down to about 11 million square miles of ocean area for this range [pointing]. This line, I hasten to point out, is targeting ——— alone, but in our study to determine what missile range, consequently missile performance we needed, we looked for a convenient reference. We didn't look at, say, just the first target here, which some people look at. We said we have to go beyond ———. To me a useful system as an overall deterrent to the Soviets from the Pacific ought to be able to reach over in there too.

So we have then targeting ——— which is also a very necessary thing to consider, this type of radius or an area of 31 million square miles.

That is just to ———. Let's look at how many targets you can get from the Pacific here. I have the same thing for the Atlantic, not with me.

Here I have done a study of all targets in the ——— system. ——— if you will, for an airfield. This would be the airstrip. This will be the bunker of ammunition or fuel. This will be the installation. We try to compute the aim point for the given point for yield and accuracy to make sure we get all of these or else we have to develop other aim

points if it is a small-yield weapon. I have taken all of these that are meaningful targets, and here is what we get.

Right out of Bangor I have \_\_\_\_\_ targets if I want to just put \_\_\_\_\_, \_\_\_\_\_ 800, 1600 [pointing]. With the \_\_\_\_\_ missiles these are Soviet targets. I have right here just about the whole base.

Most extreme targets in range from the Pacific are these most extreme complexes, \_\_\_\_\_. I can reach those all the way down to these limiting lines with the \_\_\_\_\_ mile missile. I can cover \_\_\_\_\_. Something I can't do from the Atlantic, Mr. Obey. And I would like to point out all of this targeting information is very sensitive.

Here I am talking about why we don't want \_\_\_\_\_. So you have this sort of flexibility which you do not have in the Atlantic.

#### SURVIVABILITY AND PATROL AREAS

Finally, one other point when we consider survivability. Mr. Chairman, a little while ago you asked what kind of range we can get with ships patrolling. We have this capability here for going in the \_\_\_\_\_ which has advantages—as a lieutenant commander working on the Polaris back in 1958 I tried to get people to \_\_\_\_\_. That was too far out. I would do it again with Trident. Maybe I can do it this time.

Mr. SIKES. You would have a better chance.

Admiral KAUFMAN. A little better. Maybe not.

This represents only a \_\_\_\_\_ which is a deepwater port. You will immediately ask why we can't base submarines there. We would have to buy \_\_\_\_\_ as occupied by the Navy now. I have a chart that could show you. It is a deepwater port. I can go in there as long as I don't work on the missiles enough to make an explosive safety hazard. I can put the ship in there, fly a crew out, change the crew, \_\_\_\_\_ come back out and change the crew and make three trips, three patrols, and a longer upkeep period when I return after three if I want that kind of flexibility.

The type of target coverage I get there gives me \_\_\_\_\_ 11 million square miles there. In our studies on survivability this sort of option increases survivability even more than the total Pacific which gives us more than most people can ever imagine necessary.

In short then, to answer your question finally and completely, \_\_\_\_\_.

Mr. SIKES. I think this has been very useful. I am sure it has been helpful to the committee.

Let's recapitulate. This, of course, has been a short briefing to familiarize the committee with the Trident and with its strengths and its vulnerabilities. What more do you have, Admiral, in your briefing?

Admiral LYON. That completes the briefing.

Mr. SIKES. You are now ready for questions?

Admiral LYON. Yes, sir.

Mr. SIKES. I am going to suggest that while the briefing by Admiral Kaufman is fresh in our mind, before I begin these other questions I pass the witness around.

Mr. Davis, do you have some questions on the briefing itself?

Mr. DAVIS. No. I just wanted to comment I think the briefing has been very good. But basically the decision on Trident is not one we are going to make here.

Mr. SIKES. It is not for this committee to make.

Mr. DAVIS. It is a very good informational background and I do appreciate it.

Mr. SIKES. Mr. Patten.

#### NUCLEAR CORE LIFE

Mr. PATTEN. I have a little comment only. I was a little surprised to hear you say the core life on your Polaris is 4½ to 6 years and the Trident ——— years. I thought it was much longer. On the *Enterprise* I sort of got a different impression. It amazed me.

Admiral LYON. The lifetime of the core depends in part on how you use the system. For instance, the core is designed to give so much effective full power hours. If you run the ship at 25 percent of that power, it lasts longer than if you run at 100-percent power in comparison to time.

With regard to the Trident submarine, our goal is to achieve a minimum of ——— no matter how the submarine is operated, and in fact if it is operated in its normal patrol routine it will be able to run for a longer period of time.

The reason for this is we did not want to have to bring all of the submarines back into the shipyards at the same rate that we built them. We would like to only overhaul probably one a year. That maintains the greatest number of them at sea and therefore the greatest deterrent at sea.

Mr. PATTEN. I have nothing further, Mr. Chairman.

Mr. SIKES. Mr. Long.

Mr. LONG. As I said before, from the standpoint of our strategic defense, it seems to me a submarine makes more sense than anything the Air Force, Army, or other parts of the Navy can offer. So I am beginning with an enormous leaning in your direction.

My worries are the worries that an awful lot of people are going to have on the Trident system. They concern the issue of a tremendous supersubmarine as compared with some other type.

#### NUMBER OF TRIDENTS SURVIVABLE

How many would be in dock at any one time?

Admiral KAUFMAN. Of the 10 ship force you would have about 3. In dock—I am sorry, I thought you meant in port.

Mr. LONG. What is the difference between time in dock and in port?

Admiral LYON. In port, Dr. Long?

Mr. LONG. Say Bremerton.

Admiral KAUFMAN. Out of 10 you would figure on an average of 3 in at any one time.

Admiral LYON. Let me put that in a little more perspective. You would have one in the middle of refit. This means you might have equipment torn down and be repairing it. You would have one that would be in its shakedown period. It would be operating at sea but in local areas. And you would have one that had just returned from patrol. So in fact if an emergency arose at least two of those three could immediately be sailed.

Mr. LONG. That is, if you had advance warning.

Admiral LYON. Yes, sir.

Mr. LONG. Of course, that is the great unknown factor in the case of the next nuclear war, whether we do get any advance warning.

Admiral LYON. Yes.

Mr. LONG. We are going to have so many warnings we won't know which one to take, and after a while we probably won't pay attention to the warning which is the real one.

Admiral LYON. I might add, Dr. Long, that we have——

Mr. LONG. At Pearl Harbor you couldn't get them to believe this was for real because there had been so many alerts.

Admiral LYON. We have actually run some of these tests in our deployed sites on Poseidon, and we have had the SSBNS along side the tender underway from that site in just a —— and the tender itself has been underway in about ——.

Mr. LONG. But this is a big if nevertheless. You are not going to get hours, you are going to get a few minutes in the real thing.

Admiral KAUFMAN. I think one point needs to be brought out here, sir. We, as strategic planners, don't plan on those ships in port surviving to make our deterrent work.

Mr. LONG. You are going to write off three probably.

Admiral KAUFMAN. In a surprise attack, I would write them off.

Mr. LONG. You have seven left.

Admiral KAUFMAN. Of the 10 ship force. We have the other force, Polaris/Poesidon, which is still operating.

Mr. LONG. I understand. So you have a lot of eggs in one basket—the wrong basket to begin with.

Admiral KAUFMAN. But all over the Pacific Ocean, sir.

Mr. LONG. The other seven. That is what bothers me. We are all worried about the question of survivability.

Admiral LYON. Again, Dr. Long, if you had a larger number of smaller submarines, then you would have a larger percentage in port.

Mr. LONG. Whatever the size of the submarine you would have about the same percentage in port capable being knocked out?

Admiral LYON. Yes.

Mr. LONG. But they would be at more ports. This thing is one big shiny target. It would seem to me if I were the Soviets, I would really level on that thing.

Admiral KAUFMAN. I don't think they would have any more——

Mr. LONG. You know the more ports, the more places, the more difficulty.

Admiral KAUFMAN. If they want to hit a port, they can hit five or six just as easily as one.

Mr. LONG. That, I think, is the whole argument again as to why we should have so many different types of defense. It makes targeting more difficult so something is more apt to survive.

Admiral KAUFMAN. This is another one of our considerations in going to the Pacific to avoid all of it being in the Atlantic.

Mr. LONG. I am not talking about that. I am troubled by the fact you are building enormous ships that are going to be very vulnerable and three of them are going to have to be written off. Are any others going to have to be written off because they are —— or ——

Admiral KAUFMAN. No, sir.

Mr. TALCOTT. You have to write off the ones ——.

Admiral KAUFMAN. These I am talking about are Tridents.

If we ———. I say you have that option. You wouldn't be there if you want to do that. And I am saying that is just another option you can do to get more area if you need it.

Admiral LYON. If you ——— you wouldn't be at Bangor.

Admiral KAUFMAN. It is another place. He asked the question would there be another one that might be written off.

Mr. LONG. You don't expect to have more than three in port.

Admiral KAUFMAN. Yes.

Mr. LONG. Is this average or maximum because they are going to hit when they think you are weakest.

Admiral KAUFMAN. Average.

Mr. LONG. What would be maximum?

Admiral KAUFMAN. We have made over 1,000 patrols in Polaris to date and our average is just about the maximum. Those ships stay out. We have roughly ———.

Mr. LONG. They are going to do a lot of intelligence work and pick out the time when your pants are down.

Admiral KAUFMAN. It goes like clockwork, really.

#### ADVANTAGE OF ADDITIONAL RANGE

Mr. LONG. Our base advantage as you present it is simply enormous compared to the Soviet Union. Isn't that especially in the Pacific?

Admiral KAUFMAN. Yes, sir.

Mr. LONG. I was in the Near East recently and in the Straits of Bosphorus, and looked down there and thought we could clock every Russian submarine and ship coming through, and was told we were doing that. I realized most of them had to pass through from the Black Sea to get through there. Then up at Gibraltar we have them similarly blocked in. You can forget about the SOSUS. It seemed to me our advantage is tremendous.

I am wondering with all of this tremendous base advantage why we need to move at such great expense to get this greater range?

Admiral KAUFMAN. Why we need more range, greater range, faster in the missile?

Mr. LONG. Yes. It looks to me as if the Soviets would have a very difficult time really with their meager base setup.

Admiral KAUFMAN. You realize with the present range of our ships, our submarines have to be well inside that shaded area to attack the Soviet heartland I showed you on the chart.

Mr. LONG. I guess I was outside then.

Admiral MARSHALL. I think it goes back to Dr. Long's basic question about vulnerability. The three ships in port represent three vulnerable items, and the range factor which Admiral Kaufman has shown in his demonstration gives you greater survivability and extremely less vulnerability to the ships at sea.

Mr. SIKES. Off the record.

[Discussion off the record.]

Mr. LONG. I am not quite sure I understand your answer.

Admiral KAUFMAN. Very simply, range gives you more area, more survivability for the ships at a time when the Soviets are developing ASW at a rapid rate. Two, we have a situation where right now we use overseas bases. It may well be in the near future we are denied use of

overseas bases. Range such as we are talking about here permits us to target the Soviet heartland from the United States on either the east or west coast. So it would give you the option of pulling back if you had to and keeping your submarines homeported here. Otherwise it would mean a lot of time in transit to get to where you could even be within range of the Soviet Union with our present ships.

## OBSOLESCENCE

Mr. LONG. Why won't the Soviet immediately start underwater antisubmarine warfare research that aims toward this?

Admiral KAUFMAN. They have already. That is why we want this, because of what this does for us.

Mr. LONG. Isn't this likely to be possibly obsolete by the time we get it built in 1980 because it is such an important great shining system and of such major concern to them.

Admiral KAUFMAN. I don't think it can become obsolete. From some of the detectors they might develop which might enable them to pick them up occasionally—we have to remember once they pick this thing up at this particular instant it is no more vulnerable than Minuteman at anytime, but also it is not going to stay detected.

Mr. LONG. Right now submarine warfare in the foreseeable future is very weak. We have a lot of time. Should we load ourselves onto one system that is very costly, and that could be obsolete, the same thing we did before—one generation and bloc obsolescence. Maybe we should string it out more so we have greater protection.

Admiral LYON. We have modeled the Trident submarine against every threat we can imagine out somewhere in the foreseeable future, and in cases even beyond that. And this submarine is highly survivable against all of the threats, including satellites, both low and high flying aircraft, and submarines and surface ships. In fact, the reason that we put the more missiles into it is because it is so survivable.

Mr. LONG. Can the Trident be justified on the basis that money spent for deterrence of strategic nuclear attack will enable reductions in the number of people necessary for conventional forces?

Admiral KAUFMAN. Mr. Long, it could be argued that another nation would be more inclined to resort to conventional warfare for aggression if our strategic forces continue to successfully deter strategic nuclear attacks. Thus, the continued effectiveness of our strategic forces does not necessarily imply that our conventional forces can be reduced. With reference to our Trident submarines, they are, as you are aware, being designed for only a strategic mission. I suppose, on the other hand, that one might conjecture that a sufficiently powerful strategic force disinvites adventure on the part of another nation. From that standpoint much money is saved by not having made larger "ready" forces than we now see as necessary. Quite obviously, if we save ourselves the expenses of even a "small" war, our deterrent money has been well spent.

## OBSOLESCENCE OF POLARIS POSEIDON

Mr. OBEY. Dr. Long mentioned the possibility of seven Tridents being left in the event of attack. You said that, yes, but of course the Polaris/Poseidon system is available. How useful do you think they would be 10 years from now?

Admiral KAUFMAN. Mr. Obey, it is a very interesting thing that when you run your threat studies, and I am not a real believer of all the computer studies that come up and ignore the experience of people, necessarily—but these studies do nevertheless show that with Trident against the most credible projections of force levels the Soviets can have, and even doubling that and looking at the whole gamut, so we are not too far wrong, that the two systems taken in aggregate aid and abet, if you will, to use the term that has become popular, “synergistic.” You require the Soviets to devote forces to the Atlantic deployment and to the Pacific deployment so that both come out with a diluted effort.

The aggregate looks better. It would not look as good if you have a full force of Tridents which would be more survivable.

Mr. OBEY. That is pretty obvious. Let me put it this way: Right now I assume that you assume we are relatively secure with Poseidon/Polaris; right?

Admiral KAUFMAN. Yes.

Mr. OBEY. How about 10 years from now?

Admiral KAUFMAN. Ten years from now I don't think the Polaris/Poseidon by themselves—

Mr. OBEY. What is the specific new threat you see?

Admiral KAUFMAN. It is not a new threat. It is just increased development of the present ASW capability, sonars, lasers, and infrared capabilities.

Mr. OBEY. You testified we can take care of a lot of that at present with the Poseidon program.

Admiral KAUFMAN. We cannot put into our present Poseidon program sonars necessary to pick up new Soviet submarines at long range as compared to the Trident submarines. You can do it better, but you can't do the same thing unless you put the same sonar in it. You can't do that unless you just about build a new submarine.

Mr. PATTEN. Are you speaking of diameter?

Admiral KAUFMAN. I am talking now about having more room in the submarine. We have used up all the room in Polaris.

Mr. OBEY. How long ago did we first test a MIRVed missile?

Admiral KAUFMAN. I am not sure of the date. We could provide it for the record.

Mr. OBEY. Do you have a rough guess?

Admiral KAUFMAN. I would guess about 1969, 1970, in that time frame.

Mr. OBEY. How about the Soviets?

Admiral KAUFMAN. To my knowledge they haven't yet.

Mr. OBEY. That is right, they still have not. That is all, Mr. Chairman.

Mr. SIKES. Mr. Talcott.

#### SITE SELECTION

Mr. TALCOTT. May I ask why you selected Bangor, up in Washington, as compared with San Francisco, San Diego, or Panama City?

Admiral KAUFMAN. Yes, sir. We looked at 89 sites in very great detail.

Mr. TALCOTT. In the Pacific?

Admiral KAUFMAN. No, sir; throughout. We looked at California, Oregon, and Washington bases, Pearl Harbor and many others, Guam.

Mr. TALCOTT. Is this already in the record?

Admiral KAUFMAN. I think it was covered last year. But nevertheless, real quickly and rapidly, the big thing that drives the problem is with the larger Trident missiles, 24 on a ship, you get into an explosive safety radius ———. To put this into a metropolitan area you would literally have to buy an awful lot of metropolitan real estate.

Mr. PATTEN. There is no such real estate in Bangor.

Admiral KAUFMAN. In Bangor we have a very minimal, if any, requirement for additional land over the 7,700 acres we have there now.

Mr. PATTEN. You are satisfied that being far inland there is no detriment resulting from fallen bridges or sunken ships?

Admiral KAUFMAN. On the contrary I think that particular situation there is an attribute.

Mr. PATTEN. You checked 89 locations. How many were in the Pacific in numbers?

Admiral KAUFMAN. I can provide it for the record. Admiral Lyon says he believes it was 18.

[The information follows:]

Admiral KAUFMAN. Twenty-nine of the original 89 sites considered for the Trident base are located in the Pacific area. Twenty-four of these are on the west coast, three in Alaska, one in Hawaii and one in Guam.

#### ADDITIONAL BASES

Mr. PATTEN. Are there going to be three bases, one in the Pacific—

Admiral KAUFMAN. No, sir. The present plan is for 10 Trident submarines. The present plan is for one base.

Mr. PATTEN. So 4 years from now or 6 years from now you won't be looking for another base?

Admiral KAUFMAN. Four or 6 years from now, so much depends on the outcome of SALT, whatever the Soviets do. Obviously as the submarines get older and you replace them, some people would say you will replace them with Tridents in the out years. At that time you will have to look and see if you want to put more of them in Bangor, or if you want to put some of them in the Atlantic.

Mr. PATTEN. Present facilities are not adequate at all for this?

Admiral KAUFMAN. They are not.

Mr. SIKES. Did you not originally plan two bases, one on each coast?

Admiral KAUFMAN. Mr. Chairman, I don't think it is accurate to say we have ever really planned it. In some concepts there have been two bases, one on each coast, looking at a total replacement of the entire existing Polaris force through the years.

Mr. SIKES. Then the present planning for one base is not an economy measure?

Admiral KAUFMAN. No, it is not.

Mr. TALCOTT. I have no further questions.

## IMPACT OF TRIDENT ON OTHER PROGRAMS

Mr. SIKES. Admiral, does this program replace any existing program in the fiscal 1973-1974 budget, and so forth? In other words, is the Navy giving up another program in order to get this one or is it an add-on to the Navy's budget over and above the other programs?

Admiral KAUFMAN. Mr. Chairman, I don't think I or anyone else could answer that at this time. It has been an evolutionary process of developing the funding for this and all other systems. To my knowledge there hasn't been a system which has been identified as being given up to get this.

On the other hand, as you have gone through needing more money each year and make reductions in the budget, various programs have had to give up so much money, including Trident in the past year.

To answer the question whether there is any one or any two that have been given up to get Trident, I think I would say, "No." On the other hand, have any been affected? Very definitely, yes, sir. And maybe a lot of them.

Mr. LONG. Quite aside from what is contemplated in the immediate future in terms of trade-offs which you will have to give up, we are moving into a very, very expensive system in the future. Isn't that true?

Admiral KAUFMAN. Yes, sir.

Mr. LONG. Has the Navy considered they may have to give up aircraft carriers and things like that? That would be perfectly all right with me, I might add.

Mr. SIKES. It would be all right with some of our witnesses, too.

Mr. LONG. I just do think, considering the way such affairs are handled—the Navy is given so much money, the Army and Air Force are given so much—aren't you going to have to give up something in order to get this?

Admiral KAUFMAN. That is obvious.

Mr. LONG. What are you going to have to give up in the long run?

Admiral KAUFMAN. Admiral Zumwalt has stated before in his testimony, Dr. Long, that his general purpose forces, the Navy generally, and here I mean aircraft carriers, destroyers and attack submarines, are all impacted by the high cost of strategic systems.

Some could argue that, well, the Navy with Polaris got more than its share of the pie of the defense budget.

Mr. LONG. I don't think you have answered my question though.

Admiral KAUFMAN. I am saying there will be things that have to be given up.

Mr. LONG. Maybe you don't care to answer the question.

Admiral KAUFMAN. I think we all know we are not going to have all of the things all the people would want and might have if you didn't have Trident.

Admiral LYON. Dr. Long, I think Admiral Zumwalt has very clearly indicated the Navy's concept now of going to a high value-low value acquisition program, where we buy a small number of high-cost systems including Trident and CVN's and nuclear powered frigates,

a larger number of small ships to tackle that specific problem that we don't have enough assets to go out and buy all the ships with all the capability we would like. And therefore we have structured our program in terms of fiscal reality, including Trident and CVN.

Mr. LONG. I am not sure what kind of answer that is. I probably couldn't hope for a real answer to that question.

#### PROVISIONS OF SALT ON SLBMS

Mr. SIKES. Let me ask two or three questions here.

Can you refresh our minds on the provisions of the interim SALT agreement on the numbers of submarines and missiles which the United States is allowed?

Admiral KAUFMAN. According to the interim SALT agreement the United States is limited to 44 modern ballistic missile submarines and 710 SLBM launchers. In order to provide a complete picture of the SLBM provisions, I would like to provide some extracts of the interim agreement, for the record.

[The information follows:]

#### INTERIM AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON CERTAIN MEASURES WITH RESPECT TO THE LIMITATION OF STRATEGIC OFFENSIVE ARMS

##### ARTICLE III

The Parties undertake to limit submarine-launched ballistic missile (SLBM) launchers and modern ballistic missile submarines to the numbers operational and under construction on the date of signature of this Interim Agreement and in addition to launchers and submarines constructed under procedures established by the Parties as replacements for an equal number of ICBM launchers of older types deployed prior to 1964 or for launchers on older submarines.

#### PROTOCOL TO THE INTERIM AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON CERTAIN MEASURES WITH RESPECT TO THE LIMITATION OF STRATEGIC OFFENSIVE ARMS

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Having agreed on certain limitations relating to submarine-launched ballistic missile launchers and modern ballistic missile submarines, and to replacement procedures, in the Interim Agreement,

Have agreed as follows:

The Parties understand that, under article III of the Interim Agreement, for the period during which that Agreement remains in force: The United States may have no more than 710 ballistic missile launchers on submarines (SLBM's) and no more than 44 modern ballistic missile submarines. The Soviet Union may have no more than 950 ballistic missile launchers on submarines and no more than 62 modern ballistic missile submarines.

Additional ballistic missile launchers on submarines up to the above-mentioned levels, in the United States—over 656 ballistic missile launchers on nuclear-powered submarines, and in the U.S.S.R.—over 740 ballistic missile launchers on nuclear-powered submarines, operational and under construction may become operational as replacements for equal numbers of ballistic missile launchers of older types deployed prior to 1964 or of ballistic missile launchers on older submarines.

The deployment of modern SLBMs on any submarine, regardless of type, will be counted against the total level of SLBM's permitted for the United States and the U.S.S.R.

This protocol shall be considered an integral part of the Interim Agreement.

Mr. SIKES. The interim agreement on SALT is in effect for 5 years, and we must assume that some of these limitations would be continued in future agreements.

If the interim limits are continued through the 1980's, will this mean that the Trident submarines are intended to replace the older Polaris boats in that time period?

Admiral KAUFMAN. Mr. Chairman, that is correct. We would replace the older system. You will recall in the existing SALT limitation, which is a 5-year limitation as I think you mentioned, the first Trident submarine with the construction period involved will not appear, will not be in the water before the expiration of that time. Should that limitation then persist, obviously under the limits we would have to decommission and would plan to decommission, in order, the 10 older submarines, and I would hope the old 54 Titan missiles which are permitted to be replaced on a free exchange basis with sea based systems since they came in the inventory in 1964.

#### BALLISTIC MISSILE SUBMARINE ZONE BASING

Mr. SIKES. For the foreseeable future, according to your previous testimony, the Tridents would be stationed at the same location?

Admiral KAUFMAN. Yes, sir. You may recall that Admiral Lyon showed he had growth potential there for up to 20 ships.

Mr. SIKES. Where would the Polaris boats be stationed in that time period?

Admiral KAUFMAN. They would be stationed in the same places they are right now—Guam in the Pacific where we have six submarines, Rota, Spain, Holylock, Scotland, and Charleston, S.C.

Mr. NICHOLAS. Where will the 10 oldest Polaris submarines be based?

Admiral KAUFMAN. The oldest 10 Polaris submarines will be at Guam.

Mr. NICHOLAS. They will be supported out of Bangor also?

Admiral LYON. Yes, sir.

Mr. NICHOLAS. And the rest of the SSBN's will be in the Atlantic.

Admiral KAUFMAN. Yes, the rest of the SSBN's will be in the Atlantic.

#### DECISION ON WEST VERSUS EAST COAST BASE

Mr. SIKES. You told us about the factors which weighed in favor of the west coast site. There were some which made the east coast appear desirable. One was cost. Why don't you tell us what those were that did favor an east coast site?

Admiral KAUFMAN. Mr. Chairman, you say cost, I will ask Admiral Lyon in a minute to amplify that. I do not believe that the cost is an advantage on the east coast.

Within the accuracy of the estimates his people made in looking at the four candidate sites which ended up as finalists, the costs were roughly within a few percent or a few million dollars of each other, and quite possibly Bangor happens to be the cheapest.

Mr. SIKES. You can elaborate for the record.

[The information follows:]

TOTAL ROM MILCON COSTS

*Comparative (ROM) Milcon cost for 10 ship support facilities*

<i>Site</i>	<i>Fiscal year 1972 dollars (millions)</i>
Cape Kennedy -----	663
St. Marys -----	616
Charleston -----	615
Yorktown -----	755
Bangor -----	632

The above figures are rough order of magnitude military construction costs that were developed in a study completed on July 12, 1972. Since that time a number of program decisions have been made that reduced military construction costs to \$543 million (estimated) at the Bangor site. An equivalent reduction would have occurred at each site and therefore the comparative ranking would not change.

Mr. SIKES. What factors did favor the east coast?

Admiral KAUFMAN. The factors that favored the Atlantic other than cost were strictly ———. In the Pacific I would intend to operate the missile ———. I would do that with the Trident submarine. If I were operating the Trident submarine in the Atlantic, however,

[The information follows:]

The first phase of the Navy study into possible sites for Trident lasted from September 1970 until October 1972 and it considered mainly the logistics and limited operational considerations. Based on this study the Chief of Naval Materiel identified four possible sites which best satisfied the technical criteria for basing Trident. Although three of these final four sites were on the east coast, there were no major logistic or limited operational considerations which favored the east coast sites as a group over the west coast site, or vice versa. Less significant advantages of the east coast arise from the fact that the two shipyards capable of building Trident submarines are on the east coast as will be the planned facility at Cape Canaveral for support of submarines conducting missile firings. Thus siting the Trident base on the east coast would place it in the proximity of the building yards and Cape Canaveral. The proximity to the building yard might be viewed as an advantage in the event of structural damage to the ship requiring services of the design yard. However, during extensive submarine conversion and overhaul programs the west coast shipyards have acquired adequate skills to perform this function. Siting the Trident base on the east coast would also permit a slightly earlier deployment by eliminating the time spent in transit from the east coast building yards to the Pacific Ocean.

Another advantage to east coast siting might be perceived in the more developed transportation system along the eastern seaboard.

In addition to the technical criteria for basing which are discussed above, a subsequent detailed review in the Office of the Chief of Naval Operations evaluated the strategic and operational considerations related to Trident basing.

The ——— consideration mentioned above was the only significant advantage that Atlantic operation of Trident afforded over the Pacific and it was outweighed by the other strategic and operational factors.

Mr. SIKES. During the course of the Navy's long review were three changes in U.S. force planning which changed the relative merits of deploying the Trident in the Atlantic or the Pacific.

Admiral KAUFMAN. Mr. Chairman, there were no real changes per se that directed going one way or the other that we can point to. There definitely has been, in the last couple of years, a tendency for the Soviets to deploy their ASW ships farther and farther from port.

They have gone into Cuba and Africa. We can see their attempts to develop a friendship if not actually a tendency toward base structure in other lands.

They have gone farther and farther from their own waters. They are now a "a blue water" Navy.

Mr. SIKES. What are they doing on the west coast of Africa?

Admiral KAUFMAN. I do not know exactly what they are doing.

Mr. SIKES. One of the charts indicated some Soviet activity.

Admiral KAUFMAN. Yes, sir. We see a lot of activity. We see their ships there.

They are developing friendship and definite capability to put logistics ships there and be able to resupply.

I would like to say for the record that the idea to go to the Pacific is not a new idea. Upon reporting to my job in 1970, the first paper was originated in my office to deploy in the Pacific for the same reasons we are doing now. We had an uphill battle within the Navy to convince people that this was important.

Mr. SIKES. I wish you had better luck earlier on the ———.

Mr. PATTEN. Mr. Chairman, may I add this: When I was in Leopoldville last year and looked right across the river, I saw the new Russian houses, and I saw the Russian tanks across the river in the Congo.

There is one regime there which is friendly to the Russians. I do not know if anything has changed.

They were there, pretty substantially involved in the Congo, and that is right in the Atlantic. That is not the only one. I saw their personnel too.

Mr. SIKES. The Navy spent considerable time and effort studying potential east coast sites. If strategic considerations dictated the siting of the complex on the west coast, why was the Navy so long in deciding where to build? Why did you spend time and effort studying the east coast?

Admiral KAUFMAN. The initial studies for the site for what was then ULMS were commenced prior to my reporting to my job late in 1970 in the Office of the Chief of Naval Operations. There was ongoing within the Materiel Command, prior to Admiral Lyon getting into the program, a study looking at candidate sites. The Materiel Command should, I think, quite properly identify all the sites and bases that could be used, with the pros and cons which apply and are pertinent to the logistic considerations. It is not their business to determine strategic considerations. The Trident program received its impetus, you will recall, on December 23, 1971.

Whereas it had been gauged to a first ship delivery time of somewhere in the early 1980's, it then got moved ahead and we had to work faster. We had to go through barrages of strategic studies which indicated the type of targeting considerations I showed you today. Just how many targets, what is the effectiveness of our deterrent? We had to go all the way through those to convince people to get on their schedule, that what we were doing is the right thing.

Mr. SIKES. Does the Navy anticipate that threats may develop in the future which would make either ocean more desirable in the foreseeable future?

Admiral KAUFMAN. Mr. Sikes, in the Navy's study to select the ocean area for operating Trident submarines it became apparent that the Soviets had more potential in the Atlantic Ocean for establishing forward bases to support a large scale ASW effort than in the Pacific Ocean. Soviet naval units intermittently use Cuban ports ——— right now—for operational support. Forward bases at these locations

could provide their ASW forces with ready access to Trident submarine operating areas in the Atlantic. Ports similar to these are not available to the Soviets in the Pacific at this time. Furthermore, if the Soviets at some future time established a forward base on the west coast of South America, it would not provide their forces with as much access to Trident operating areas in the Pacific as they currently have in the Atlantic.

Mr. SIKES. What prospective threats did you consider, and how do they weigh in favor of one ocean or the other?

Admiral KAUFMAN. I previously described the accessibility of Trident submarine operating areas in the Atlantic and Pacific Oceans to traditional ASW threats such as those mounted by submarines, surface ships, and aircraft. Navy threat assessments considered advances in the capability of these existing and follow-on platforms, as well as new approaches to ASW such as, for example, using moored acoustic sensors to detect and localize SSBN's followed by an ICBM attack. Our studies indicate that the threat represented by these type systems did not vary significantly from ocean to ocean except as a function of Soviet forward basing.

#### FACILITIES SUPPORT FOR POLARIS AND TRIDENT

Mr. SIKES. Will you need duplicative facilities for Trident and the older Polaris boats during the period of phasing in the Trident?

Admiral KAUFMAN. Mr. Chairman, we will need the duplicative facilities to handle the Polaris at the bases there in the Atlantic and Pacific while we are phasing in Trident. Does that answer your question?

Mr. SIKES. How do you plan to conduct both Polaris and Trident support at Bangor?

Admiral KAUFMAN. Admiral Lyon, would you like to address that?

Admiral LYON. Yes, sir.

All of our master planning, Mr. Chairman, continues the capability that we now have at Bangor to support the Polaris A-3 missile.

This is the only A-3 missile capability we have in the Navy. That consists of an ability to break down, test, reassemble, and test again the Polaris missiles that are returned from the deployed submarines in Guam.

A transport carries those missiles from Bangor to the deployed tender in Guam at which point they are reloaded into the operating submarine. That facility would continue in operation until the Chief of Naval Operations decides to retire the Polaris submarines, or to move them elsewhere. The Polaris missile facility is inland just centered in the middle of the Trident weapon facility which will be built around it.

Magazines will be provided for the storage of spare missiles.

Mr. NICHOLAS. Will there be any disruption as a result of the construction activities or will there be problems in the safety zones because of the existing Polaris facilities?

Admiral LYON. All our planning is in line with that not being disrupted since that is an operational system.

Mr. NICHOLAS. You expect no problems with the schedules, and so forth?

Admiral LYON. No, sir.

Mr. SIKES. Admiral Lyon, this afternoon we will cover construction and so we won't need the experts in their areas, as far as I know.

Admiral LYON. Yes, sir.

AFTERNOON SESSION

UTILIZATION OF EXISTING FACILITIES

Mr. SIKES. The committee will be in order. We will resume the hearing on the Trident. How do the Navy's studies on the basing of Trident take into account the base realignments and the possible utilization of facilities such as shipyards? Would you be able to use existing drydocks as a result of the phasing out of the old Polaris boats?

Admiral LYON. Mr. Chairman, as you know, the Polaris boats and the Poseidon submarines all have their own dedicated floating drydocks. These are currently deployed to the overseas sites as well as one that is anchored in the Cooper River in Charleston. These floating drydocks are too small for the Trident submarine and they cannot be submerged down deep enough to receive the Trident submarine without the drydock itself sinking. We did look at them and we have looked at all other floating drydocks in the Navy inventory and none of them are satisfactory.

Mr. NICHOLAS. The recent realignments included closures of naval shipyards at Hunters Point and Boston. These probably would not be a suitable site for a Trident because of the explosive distance area. However, there might be a possibility of a trade-off that would enable you to use one of the other existing shipyards for Trident and to shift its workload into one of the shipyards which you do plan to close down?

Admiral LYON. Yes; we did look at the utilization of existing drydocks both during the preselection of the Trident site and after the Trident site.

There are drydocks at Puget Sound that will take the Trident submarine and we are planning to use those drydocks for the conversion of the Trident submarine when that occurs for the Trident II missile, which will require a new launch tube, and also to use them during the periodic overhauls that will occur about once every 10 years.

However, explosive safety constraints prohibit the use of drydocks in existing shipyards for the periodic, every —— day refit of the Trident submarine unless the missiles on board that submarine are removed.

Offloading all of the missiles, in order to enter the shipyard, is just not cost effective. It adds about 13 or 14 days to the time that the submarine is off the line and for an equivalent number of missiles at sea you would have to build additional submarines to counter that. For a national deterrent it is just not cost effective.

Mr. SIKES. To what extent did the studies on Trident take into account the underutilization of naval bases and shipyard facilities on both coasts which led to the shore establishment realignments?

Admiral LYON. Consideration, Mr. Chairman, was given to the use of all of the existing shipyards and naval bases during our Trident

study. We looked at all the naval facilities, primarily with regard to availability of the land and availability of any facilities that could be utilized for refit of the Trident submarines between patrols.

The results of the system cost effectiveness analysis and the required explosive safety distances that are required to safely handle these missiles in an industrial facility provided constraints that dictated against the use of naval bases located in the vicinity of centers of population and/or our existing shipyards which are almost invariably located in centers of population.

Mr. SIKES. How do you explain that in view of the fact that we do have nuclear ships and nuclear-powered submarines based in the present establishments?

Admiral LYON. If Trident were only a nuclear-powered submarine that would offer no problems and we could operate out of a shipyard. The problem, Mr. Chairman, is the propellant that's used in the missile.

These are big missiles and the propellant that is used to project them onto their ballistic path to the target is, in effect, a high explosive. There is no nuclear hazard but the high-explosive hazard is very great.

There is no way we could guarantee safe handling of those, although we have not had an accident in Polaris or Poseidon experience. We do have to allow for that, sir.

Mr. SIKES. You mean the quantity and the quality of the material is such that ordinary safeguards won't suffice?

Admiral LYON. Yes, sir. I would say that on a 24-missile Trident submarine, if we reach our ultimate growth we will have ——— pounds of high explosive aboard that submarine, and we will be handling it as we load and unload those missiles.

I might point out that we have had several trains explode that have been carrying high explosives, so accidents do happen. We certainly do not project one and we are taking every precaution to prevent such an accident from happening. However, it is always a possibility and we must live with that possibility.

Mr. SIKES. Are none of the facilities which are being reduced or abandoned by the Navy or other services as a result of SER suitable for support of Trident? Why not? Since the Trident decision was announced first, has this question been restudied since that time? Provide that for the record.

[The information follows:]

Consideration was given to the use of existing shipyards (SER and otherwise) for refit of the Trident submarine between patrols. Results of system cost-effective analyses and required explosive safety constraints dictated against use of existing shipyards for berthing and refit of these submarines. Existing shipyard facilities will be used, however, for refurbishment of the rotatable pool components of equipment and machinery and for routine overhauls and reactor refueling of the submarines. Use of shipyards in this manner allows reducing the maintenance capability at the refit site to approximate that on existing missile submarine tenders. Full use will be made of suitable surplus material which is available as a result of SER.

#### BASE SITE SELECTION

Mr. SIKES. There has been considerable delay in determining the site for the Trident base. Can you describe for the record your process of base selection?

## [The information follows:]

An indepth study of all aspects of the Trident base complex commenced in September 1970. This study was originated by the then ULMS project manager (Rear Admiral Levering Smith) and examined a spectrum of 89 possible sites against a number of criteria, foremost of which were availability of Government land, existing facilities, channel depth and characteristics, climatic conditions, egress, transportation facilities, and labor base. In assessing potential of various locations the requirement dictated by explosive safety distance, submarine draft and the availability of existing facilities eliminated a number of candidates.

Elimination of sites occurred early in the site study under application of the restrictive criteria, that is, land availability, labor base, and channel considerations. An initial reduction to 17 sites occurred. A detailed study of each of these led to narrowing the field to four; three on the east coast, one on the west coast. Onsite examinations were then conducted at each of the leading locations by a team from the Naval Materiel Command. The Chief of Naval Materiel forwarded the site study to the CNO on October 6, 1972. From a logistic standpoint, two sites were identified as being leading candidates: Charleston, S.C., in the Atlantic, and Bangor, Wash., in the Pacific. Existence of a skilled labor base, existing facilities, and available Government-owned land were primary considerations.

Many attributes of Bangor led to its selection. Foremost among these is the fact that it permits the Trident submarine to operate in the Pacific Ocean. Such operations will at the earliest practicable time, pose to the Soviets or any potential enemy, a two-ocean problem for any ASW improvements or breakthroughs which they might develop. Soviet basing potential in the Pacific does not provide for staging of ASW efforts in areas close to those in which most Trident operations will occur. The combination of area to be used by our sea-based deterrent forces in both oceans, in combination with the more capable Trident submarine, can be expected to perpetuate the relative invulnerability we have enjoyed in the Polaris system. The Bangor location contains adequate land and waterfront area to accommodate the various safety criteria. The harbor is excellent and the channel is deep; neither will require more than minimal dredging. The site, a former ammunition depot, is fully developed and will require relocation of only a limited number of facilities. The local labor base contains a sizable nucleus of missile and ship related skills. Existing Department of Defense installations, e.g., naval shipyard, military housing, and naval hospital, are available to support the base.

Environmental assessments of Bangor were carefully considered in the decision process. With the announcement of the decision, there will commence an in-depth environmental study leading to filing of an environmental impact statement. Public hearings will then be held prior to the commencement of any construction.

## RELATION OF FACILITIES TO REFLECT SCHEDULE

Mr. SIKES. One of the major factors affecting the cost of Trident facilities and the possible use of existing facilities is the Navy's maintenance program for Trident. Could you describe again the type of in-port time schedule you are hoping to obtain for these ships and indicate to what extent this would be extended if you were to rely on existing industrial complexes to do more of your repairs between overhauls? Also provide details for the record on exactly what effect the denial of each of the facilities you are requesting would have on time in port.

Admiral LYON. The schedule for activities taking place during the in-port period are shown on this chart. The days for each activity are classified. Existing industrial complexes will be relied upon to accomplish the refurbishment and overhaul of components which are removed from the Trident submarine and replaced from a rotatable pool. This reliance has in part resulted in the significant cut in this year's MCON program over that presented last year. Further reliance on existing shipyards for piers, drydocks and direct support maintenance

shops would require the offloading of all missiles each refit and thereby increase the in-port time by over 50 percent.

Denial of other facilities requested in the fiscal year 1974 program would have the following effect:

Cape Canaveral Flight Test Facilities.—There is no alternative to providing flight test facilities. Testing of the missile and system would not be possible.

The Weapons/Navigation Training Building does not directly influence in-port time but the alternative of providing factory training of crews would be much more expensive and would significantly extend the time of separation between crew members and their families.

There is no alternative to the explosive handling pier required for offloading and onloading missiles. Denial would prevent servicing of the missiles and prevent deployment of the system.

Land acquisition, utilities and site improvements cannot be directly related to time inport but are necessary for development of the site and support of the submarine.

[The chart follows:]

# TRIDENT CONCEPTUAL OFF-PATROL PERIOD

- ARRIVE AT EXPLOSIVE HANDLING WHARF
- WEAPONS OFFLOAD & EXERCISE TORPEDO OUTLOAD
- DEBRIEFING & ARRIVAL CONFERENCES
- PROCEED TO SHIP REFIT FACILITY

## PRE-DEPLOYMENT ACTIVITIES

### REFIT AVAILABILITY

- OFFLOAD RETROGRADE MATERIAL
- CREW CHANGE & CHANGE OF COMMAND
- SCHEDULED PREVENTIVE/ PROGRESSIVE MAINTENANCE
- CORRECTIVE MAINTENANCE
- TESTING
- PROVISION & REPLENISHMENT
- INSPECTIONS

- FAST CRUISE
- SEA TRIALS
- POST SEA TRIAL AVAILABILITY
- INSPECTIONS

WEAPONS  
OFFLOAD

WEAPONS  
OUTLOAD

Mr. SIKES. Can you apply any economic measure to the cost of this time lost in terms of investment and operating costs of the system, etc., versus the cost of the additional facilities you are requesting?

Admiral LYON. Facilities such as the drydock and refit slip do not duplicate facilities at shipyards because those at the Trident complex have the capability of berthing submarines loaded with missiles. The docks and piers at a shipyard cannot duplicate that capability. To keep an equivalent amount of missiles at sea the time lost as a result of additional missile handling and utilizing a shipyard to perform the refits as indicated in the Alternative Refit Concepts Report would require three additional submarines. This, in acquisition costs alone, would require an investment of over 1.6 billion additional dollars. This makes the drydock, at \$40 million, an attractive investment.

#### TOTAL FACILITIES COST

Mr. SIKES. Admiral Lyon, you stated that the total cost of the Trident facilities is anticipated to be on the order of \$550 million. Earlier the committee had heard estimates as high as \$1 billion. Supply for the record what you have had to give up in order to achieve this reduction.

[The information follows:]

The cost estimate for the Trident MCON program was reduced from \$1.083 billion to \$543 million as a result of:

(a) Elimination of submarine depot level maintenance shops at the Support Complex and accomplishing this refurbishment of components in existing shipyard shops.

(b) Exclusion of nonmission essential support facilities; i.e., family housing, community and recreational facilities, etc.

(c) Scope reduction of operational support facilities; i.e., magazines, etc.

(d) Refinement of facility requirements and costs resulting from more detailed definitions of system characteristics and selection of the site.

(e) Sizing facilities to support 10 vice 15 submarines. Capability is included for facility expansion to support 20 ships.

A copy of the Alternative Refit Concepts Study has been provided to the committee staff. That study identified cost for all options addressed. Various alternatives were considered with MCON costs varying from approximately \$375 million to \$660 million (fiscal year 1973 dollars). The lower cost options are based on greater use of shipyard drydocks, piers and shops for submarine maintenance while the higher cost options provide for a dedicated refit complex with a wider range of personnel support and production facilities to meet possible contingencies as well as normal workload requirements. The alternative selected (approximately \$488 million, fiscal year 1973 dollars, or \$543 million, escalated) provides for dedicated submarine maintenance facilities to perform the type of maintenance now accomplished by tenders. This option, while austere, does provide capability to maintain the submarine in the minimum time and keep the off-patrol period at no more than 25 days. Some further reduction in MCON costs can be achieved in other options but only with a significant decrease in availability of missiles at sea, decrease in reliability of the systems and resulting decrease in cost effectiveness of the Trident System. The possible MCON cost reductions which range up to approximately \$120 million are more than offset by the required acquisition of one to three more Trident Systems (at over \$500 million per system) in order to place the same number of missiles at sea.

Mr. SIKES. It has been stated that the total cost of the project facilities is anticipated to be on the order of \$550 million.

Is this a realistic figure, or is it an administrative limit?

Admiral LYON. I will let Captain Stacey answer that since he prepared the estimate. I reviewed it and agreed with it.

Captain STACEY. We feel the \$550 million estimate is a realistic estimate for the essential requirements for the base, as well as including the flight test facilities at Cape Kennedy.

The estimate we feel is good based on our best engineering information at this time.

Mr. SIKES. Has an administrative limit been placed on this?

Admiral LYON. I will answer that, Mr. Chairman, if I may. There was an administrative guideline given to us last year when we were going through budget reviews. The target that we were given was \$550 million. We went to see what we could do for that amount of money, and in fact cut it down to our current estimate of \$543 million in escalated dollars, and that did provide proper support for the 10 submarine force that has been placed in the program.

Mr. SIKES. Does this take into account inflation during construction?

Admiral LYON. Yes, sir.

#### INCLUDED AND EXCLUDED CONSTRUCTION COSTS

Mr. NICHOLAS. You say this provides for the essential requirements but does it provide for all of the personnel, support and other requirements which in effect will be generated by locating a new base at this location?

Are those being picked up in other budgets? Are they outside of your figure of \$550 million?

Captain STACEY. It includes the barracks for the off-crew personnel, the messing personnel and the personnel that are assigned to the base and other support facilities.

It does not include the type of thing you are thinking about in the way of recreation facilities and this sort of thing.

Mr. NICHOLAS. Family housing?

Captain STACEY. It does not include family housing.

Mr. NICHOLAS. Would it be fair to say this is limited to the items specified under a narrow definition of the Trident complex as opposed to a broader consideration of family housing and area support costs.

Admiral LYON. I think to put it in proper context, the program we have laid out supports the Trident base in total, everything that is necessary to operate that submarine, including that support for which the Government is normally responsible, such as bachelor housing for the enlisted people and the officers, dispensary and medical facilities to tend the people working on the base, the transportation, the utilities, and all of that.

The family housing as part of the total DOD housing program is something that should be included in their annual housing survey and placed into the program as the need might develop out there.

We would hope in this area, since we do have a gradual phase in of the submarines, as well as the base, that housing would become available in that area under other programs for our people to utilize.

#### EXISTING COMMUNITY SUPPORT FACILITIES

Mr. DAVIS. Are there going to be any offsetting withdrawals of personnel from the Bremerton area that would permit you to make use of some of the supporting facilities already there?

Admiral LYON. There are considerable facilities in the area at present. There is a hospital at Bremerton that is underutilized right now and will support the Trident buildup. It is an old hospital and will eventually be modernized as we continue to operate in the Puget Sound area. In fact, as a result of the base closures, it is anticipated one or more additional ships will probably be homeported in the Puget Sound-Bremerton area.

The housing that is available there at the present time although not completely occupied I think can on the basis of that be expected to be fully occupied.

#### CREWS

Mr. SIKES. The term "off-crew" has been used several times in this discussion. I think for the sake of the record it would be well to explain how the off-crew in a nuclear submarine functions and what its responsibilities and duties are when in port and not actually on the submarine.

Admiral LYON. Yes, sir.

Our strategic undersea based missile systems are operated by two crews, designated a blue and a gold crew. When one crew is at sea operating the submarine the other crew is in port for rest and recreation and for training, and for receipt of replacements for people whose enlistment may have run out or who have been transferred to other duty.

In the Trident program we intend to utilize, because the submarine will be based in the continental United States, both crews for the refit. When the submarine comes in from a patrol, the crew that brings the submarine in will be relieved by the on-coming crew. That on-coming crew then will start the submarine into its upkeep, removal of surveillance missiles and other necessary work. The off-going crew that has just completed the patrol will depart on 4 days home leave, return to the submarine and assist the net crew in putting the submarine through its refit which takes —— days.

At the end of that time the crew that is to take the submarine on patrol will go to sea for a training and refresher period of —— days, return to port for a short time to receive its new missiles and then depart on its extended patrol.

#### OTHER FACILITIES REQUIRED

Mr. SIKES. The \$550 million does not take into account the total cost of medical facilities, family housing, and other support costs?

Captain STACEY. No, sir. The \$550 million Trident military construction program includes essential bachelor housing and messing facilities for personnel ashore, the off-crews, and an emergency care dispensary for personnel assigned to or employed at the support complex as well as the various types of management, base, and operational support facilities.

Mr. SIKES. What have you allowed for expansion of military hospitals to handle this additional load?

Captain STACEY. Currently naval hospital, Bremerton, has 295 beds, which is sufficient to handle the additional load due to Trident.

Mr. SIKES. Specifically what allowance have you made for family housing construction and support?

Captain STACEY. The Trident program does not provide for construction of family housing. As you know, we look to the community for support first. Our analysis indicates that as many as 1,400 units may be required and these will be provided through the DOD housing program.

#### CONSTRUCTION BY CATEGORIES AND YEAR

Mr. SIKES. Provide for the record a breakdown of the \$550 million by year and by category of facilities.

[The information follows:]

#### FACILITIES CATEGORIES BREAKDOWN

[Dollars in millions]

Facility category	1973	1974	1975	1976	1977	1978	1979	Total
100—Operating and training.....		\$78.8	\$16.1	\$32.8	\$17.2	\$0.1		\$145.0
200—Maintenance and production.....			74.9	44.7	.5			120.1
300—R.D.T. & E.....		3.8						3.8
400—Supply.....		.3	16.5	13.4	11.0	3.3		44.5
500—Hospital and medical.....					.4			.4
600—Administrative.....			9.3	5.9	3.2			18.4
700—Housing and community.....			1.7	3.4	1.2	1.1	1.6	9.0
800—Utilities and ground improvements.....		30.3	76.0	33.1	21.9	1.3	.8	163.4
900—Real estate.....		5.1						5.1
Design.....	\$13.0	10.8	3.0	4.5	2.1	.1	.1	33.6
Total.....	13.0	129.1	197.5	137.8	57.5	5.9	2.5	543.3

#### CONSTRUCTION SCHEDULE

Mr. SIKES. The construction of a new Trident complex will be a large construction effort concentrated in a relatively small area. As a result of slippages in site selection, there may not be a great deal of flexibility in your construction schedule. How is the Navy managing this so as to keep costs at a minimum and yet meet operational schedules?

Admiral LYON. If I may, Mr. Chairman, I will let Captain Stacey answer that since he is directing his attention to that problem.

Captain STACEY. Essentially the basis for scheduling the construction is to complete each required facility at the established or required date, and to preclude interference as much as possible, we have phased the construction in each of the relative areas of the support complex. Although this approach will result in requests for authorization and funding of construction of some facilities earlier than dictated by operational requirements, it permits us a more orderly construction of the installation as a whole.

It will obviously reduce the environmental impact.

Mr. SIKES. What annual rate of obligations are you anticipating at the Bangor complex for the next 5 years? Provide that for the record.

[The information follows:]

We anticipate that contracts will be awarded for all facilities in the fiscal year 1974 program prior to the receipt of fiscal year 1975 MCON funds. The goal

for fiscal years 1975 through 1978 is to obligate construction funds in the year in which the funds are authorized and appropriated. These obligations would be:

Fiscal year:	<i>(Dollars in millions)</i>
1975 -----	[deleted]
1976 -----	[deleted]
1977 -----	[deleted]
1978 -----	[deleted]

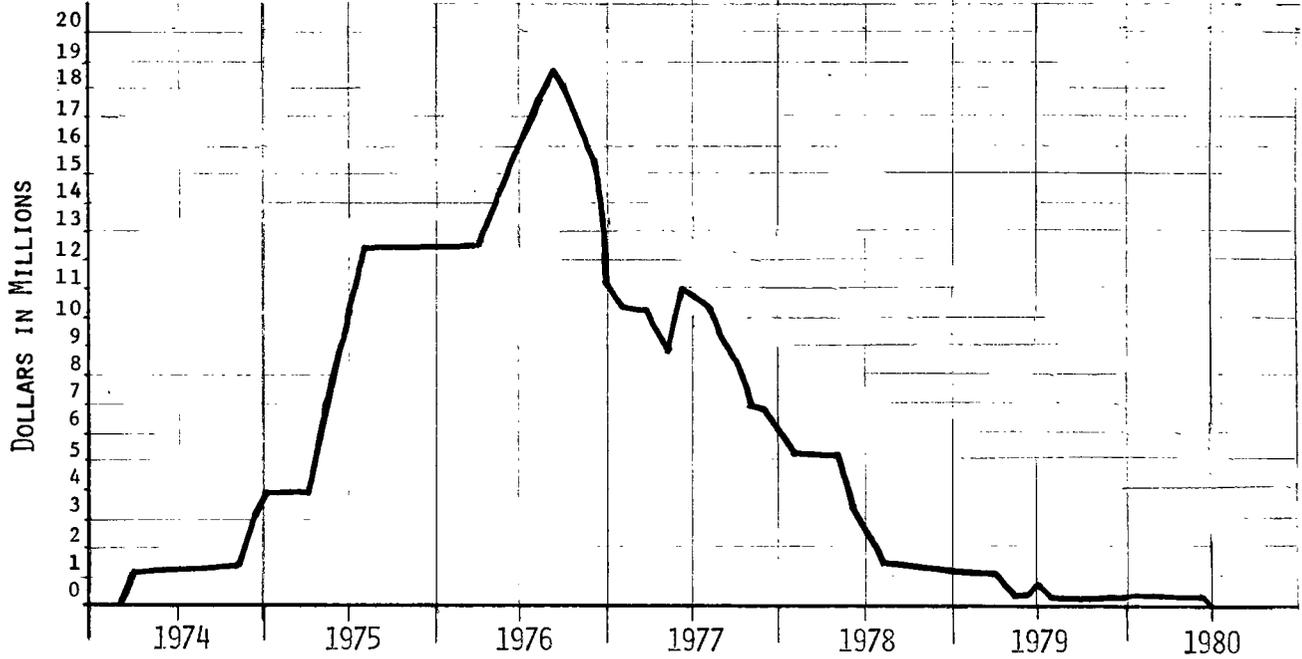
Mr. DAVIS. In terms of work put in place each month during the construction period, would you have a schedule as of this date that would give us that information?

Admiral LYON. Yes, sir; we do have that, Mr. Davis. We would like to provide that for the record.

[The information follows:]

The attached graph shows the work-in-place for each month during the construction period for the total Trident construction program.

TRIDENT MILCON PROGRAM  
WORK-IN-PLACE (WIP)/MONTH



Mr. DAVIS. If you would provide that for the record, a schedule showing design, award, construction and acceptance, readiness date, operational requirement dates and so on?

[The information follows:]

The design, award of the construction contract, construction and acceptance—completion of the construction period—readiness and operationally required data are shown on the following schedule.

TRIDENT SUPPORT COMPLEX & FLIGHT TEST FACILITIES  
 FY 1974 MCON PROGRAM MILESTONES

PROJECTS	DESIGN		CONSTRUCTION		FACILITY READY	FACILITY REQUIRED
	BEGIN	COMPLETE	*BEGIN	COMPLETE		
Bangor, Washington Refit Pier & Slip	7-73	9-74	12-74	3-77	9-77	10-78
Explosive Handling Pier	7-73	9-74	12-74	7-77	1-78	10-78
Weapons/Navigational Training	7-73	9-74	12-74	4-76	1-77	1-77
Public Works Warehouse	12-73	4-74	7-74	12-74	12-74	12-74
Land Acquisition	NEGOTIATIONS		7-74	7-76	7-76	10-78
Site Improvements	8-73	3-75	11-74	12-76	12-76	1-77
Utilities	8-73	3-75	11-74	12-76	12-76	1-77
					1st incr only	
Cape Kennedy, Florida Missile Checkout Buildings Construction & Alterations	2-73	11-73	2-74	12-74	4-75	1-76
Guidance & Telemetry Building Addition & Alterations	2-73	11-73	2-74	2-75	8-75	1-76
Lifting Device Proofing Facility	1-73	11-73	2-74	2-75	4-75	1-76
Launch Complex 25 Alter- ations	1-73	11-73	2-74	3-75	7-75	1-76
Wharf and Dredging	1-73	11-73	2-74	11-76	3-77	4-77

The Milestone dates as presented herein reflect current planning and programming, schedules and are subject to change. \*This is the construction start date. Anticipate contract award one month prior.

Admiral LYON. For your information, we are planning a test and evaluation period of this base just as we would provide a test and evaluation period for the submarine. When the submarine reports there in late calendar year 1978, we want it to find that base checked out, fully operable and ready to support the submarine on her first mission. It will be a very short turn around time.

Mr. DAVIS. Have you had any slippages that you can pinpoint that would indicate that some of the funds that you requested for fiscal 1974 might not be needed until 1975?

Admiral LYON. No, sir.

Captain STACEY. I would like to elaborate a little on that. The refit pier and explosive handling pier are included in the 1974 program and we have projected contract award dates in November of 1974 prior to the fiscal year 1975 apportionment. Although this appears to be in advance of when funds are needed, a 6-month period is required to checkout both the explosive handling pier and refit pier; this time is needed to conduct a dry run to insure we have perfected the operation and we will not have accidents when the real operation occurs.

This takes 6 months after the facility is completed. If we slip these piers into the next year's program we are going to peak construction even more than if funded in fiscal year 1974, and further compress the rate of construction that we project until the time of operation of the support complex.

In other words, we have a work-in-place curve, which peaks and then it phases out until completion of construction. We have the same end date when the facilities are required. If you compress the con-

struction time the curve is elongated with the resulting expansion of work in place per month.

Mr. DAVIS. Just so that we will have a chance to look this over at a little more leisure, would you provide for the record the scheduling in this respect?

Mr. NICHOLAS. Provide both alternatives, the schedule you are planning and what would happen if it slipped.

Admiral MARSCHALL. Excuse me, if I may interrupt. Are we to assume that everything would slip for a year and we would still have a compressed schedule? You want the refit pier and explosive handling pier.

Mr. NICHOLAS. Yes.

Admiral MARSCHALL. We will provide that for the record.

[The information follows:]

The graph shows the work in place for the construction of explosive handling piers, refit piers, the drydock, and small craft pier.

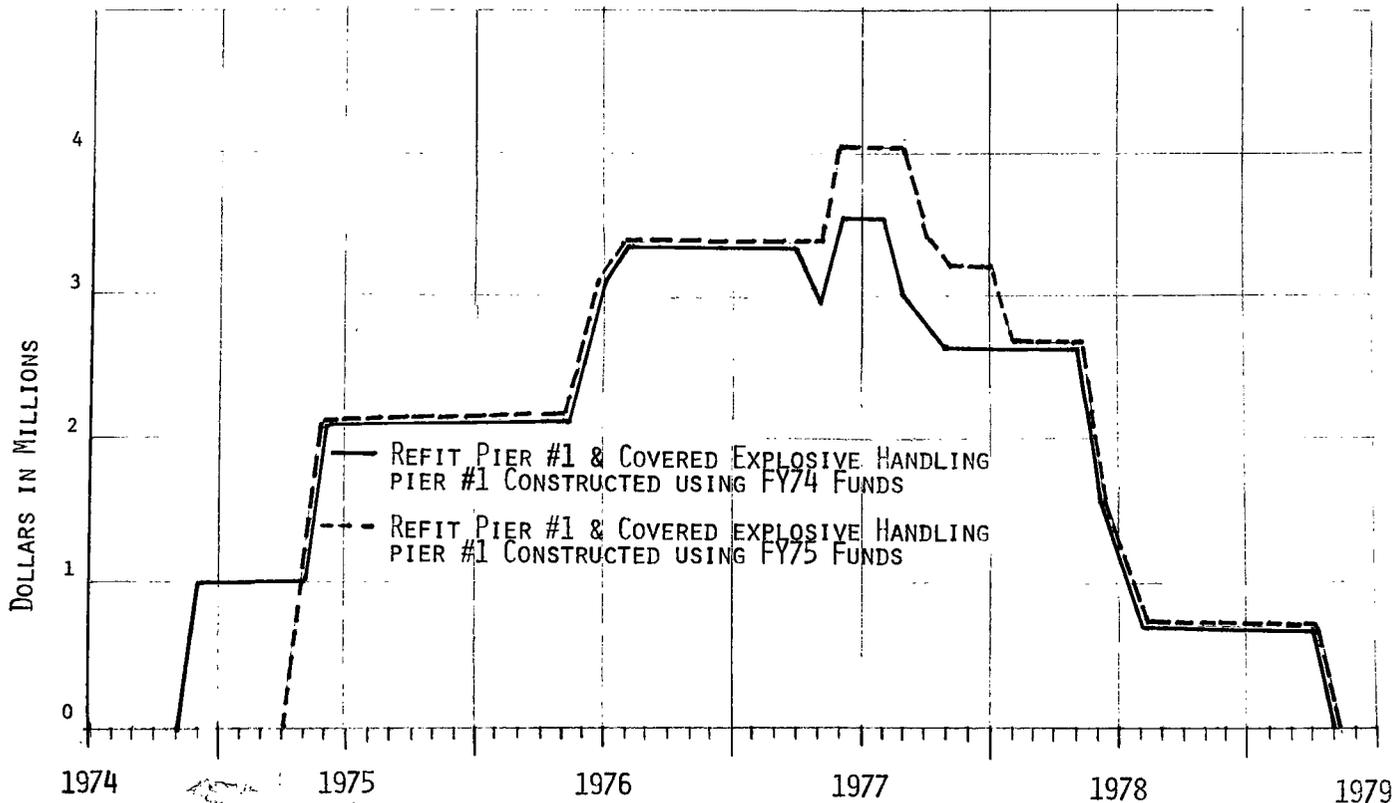
The waterfront area is considered to be the most critical construction area due to the specialized type of work, the restricted work area, and the environmental impact considerations. The Trident construction goal is to program construction that will result in a gradual workload buildup, attainment of a relative steady workload and a gradual tapering off of construction.

The graph illustrates that construction of one explosive handling pier and one refit pier in the fiscal year 1974 program will accomplish these goals.

As shown on the graph, a delay of 5 months caused by funding the initial refit and explosive handling piers with fiscal year 1975 funds results in the following undesirable construction schedule :

1. A rapid work influx.
2. An extended peak of the construction work.
3. A rapid tapering off to completion.

TRIDENT PIERS & DRYDOCK  
WORK-IN-PLACE (WIP)/MONTH



Mr. NICHOLAS. Presumably the same argument would apply to the other things even more so, is that correct?

Admiral MARSCHALL. Yes.

Mr. DAVIS. I gathered from what you said that you would not anticipate any better record than we have had lately as far as having an appropriation available to you at the beginning of the fiscal year.

Admiral MARSCHALL. I would like to answer that. Traditionally even when the Congress is very early in awarding its money, there is an apportionment process which goes on within the DOD.

Mr. DAVIS. And OMB.

Admiral MARSCHALL. Yes, sir. We feel it is comfortable to say we won't get new moneys before the first of November of that year.

Admiral LYON. I would like to add, Mr. Davis, that looking at the schedules of explosive-handling wharf and first refit pier, in light of the testing of that base that I intend to do, and the usual cleanup problems that result when a facility is turned over for use, that I do not believe that those piers and that explosive-handling wharf will be finished early. We actually plan on bringing in one of our attack submarines into the pier and letting the base do an operational refit on it, to both get our people accustomed to working on the submarines and to see how our procedures will work.

This can take several months. Prior to that we would want to test all of the shore power cables to make certain they are available to provide the submarine the power that it will need.

We want to hook up the sanitary facilities. The submarine is being designed, when it is in port, to not pollute the waters in that area or the environment and to provide all of its discharges to the shore facilities. Those will have to be thoroughly checked out. This is the first time that we will have done that for a ship of this type.

It is very important that we test those thoroughly.

#### CONSTRUCTION MANAGEMENT

Mr. DAVIS. As far as the ships are concerned, has the Navy set up a project manager-type of organization and then in your shop have you set up a similar responsible group so that the two of you work together on it?

What kind of management team do you have on it?

Admiral LYON. In assembling the base I have, in effect, as the project manager, taken the responsibility to represent the operator that we will eventually turn that base over to, the force commander, the fleet commander. I have assisting me the officer in charge of construction of that base. Supporting him I have a missile expert, a submarine expert, a communication expert, a logistics expert, and an ordnance expert, who are all doing individual studies to provide inputs to his plans that will lead to an integrated support site that will be able to meet all of the requirements of the submarine and the missile. In addition we are going to provide at this base a central training facility so that that crew that brings the sub in and goes ashore will have the facilities to, one, refresh their training in the systems of the submarine; two, advance their training as we move people up to more senior jobs and they must learn new talents.

We will always have located there the training necessary to bring some young man from the recruit training command into the submarine program and initiate him into the Trident submarine so that when he goes to sea on his submarine he will be able to do useful work. In that regard I am working very closely with the chief of naval training and the chief of naval personnel. They have representatives who sit in on all our meetings and are providing inputs into the requirements that must go into the central training facility.

Mr. DAVIS. All of these inputs come to you, then.

Admiral LYON. Yes. I have developed a total integrated logistics plan which has been distributed to all these people, received all of their inputs, and provides the basic guidance throughout.

#### CONSTRUCTION SCHEDULE VERSUS DATE REQUIRED

Mr. SIKES. It appears that some of the projects will be completed in time for their use. Others, such as the refit pier and slip and the explosive handling pier will be completed 15 months or more before they are required. Is that correct?

Captain STACEY. Yes, sir, it is.

Mr. SIKES. Why would you request funds for facilities now when you could do it a year from now and still meet your operational date?

Captain STACEY. I would make two comments. One, there is a need for a break-in period or training period that Admiral Lyon has mentioned—the 6 months of actual operation of the equipment, that is, conducting a dry run of the missiles, and this sort of thing. And two, we have the problem of maintaining a level amount of construction which will minimize the impact on the environment and the local community in that period.

So we are trying to level the construction effort and keep the impact to a minimum.

Mr. SIKES. If you have to get past the environmentalists you may be 15 months late instead of 15 months early. You know that.

Captain STACEY. Yes, sir.

Admiral LYON. That is our first project, Mr. Chairman. We have already started that.

Mr. NICHOLAS. The testing out of the facility you referred to, I assume you desire to do it, but in order to support the initial IOC of the submarine is it necessary? Given that, isn't there some possibility of slippage of the submarine, while you are performing the testing on the submarine, and making sure the missiles are operating and so on.

Admiral LYON. To show you how our planning goes, there is always the possibility of slipping. My job is to prevent that from happening, and I am doing everything I can to prevent that from happening.

Mr. SIKES. What is your batting average?

Admiral LYON. It has been quite good in the ships I have had control over, sir. In this regard the refit pier and the explosive handling pier are the two most important facilities that we need on the waterfront. Without the explosive handling pier we cannot, in fact, outload that first submarine for deployment.

We have to have the cranes. We have to have the pier to be able to take the missiles from the missile assembly plant, bring them down and load them onto the submarine in a safe manner. There is no shortcut that you can take there. If the equipment is not tested, if the equipment will not meet specifications, if the grounding straps are not in place, if the submarine cannot be grounded so there is no static electricity hazard, we just will not be able to do it.

Personally, I would rather be early in this regard than late, because it will very definitely delay our ability to deploy that submarine on its first mission.

I think it is very important that that submarine go to sea when we said it is going to go to sea. The President has given us the highest industrial priority in the country in an attempt to meet that goal, and I certainly have got my people working full time to attempt to do that, sir.

Mr. NICHOLAS. Now with regard to the construction schedule for these two facilities—you said construction would begin in November 1974. Presumably, if funds were provided in the fiscal 1975 military construction bill they would be available not much later than 2 or 3 months after that. This would not in itself create a bunching up of the construction schedule which you could not live with, and neither would it necessarily, of itself, eat up the flexibility of 9 months in one case, and 6 months in the other case, which you have between the end of the construction and the period in which you have to begin the testing. Could you explain why the 3 months are critical?

Admiral MARSCHALL. I think probably that can best be shown by the two curves which we will provide for the record to show the impact of work in place at any one particular month. We will have critical months there. Even 3 months are going to be very important to us as we slide across this curve.

We do not want to have the peninsula inundated with construction workers nor do we want our site complicated with too many people. I think the curves which Captain Stacey can provide for the record will give a better indication of this than we could just trying to describe it. Three months will make a difference.

Admiral LYON. I might add that you brought up a very important consideration here in the morning session. We do have to keep the Polaris A-3 capability operational and minimize the interference with that capability as we are building this site.

In that regard any significant increase in the number of people we have over what is projected will offer problems in that area.

We can work around it but it makes it more difficult.

Admiral MARSCHALL. There is another factor here, too. When you talk about money being available within 3 months of the time we discussed, that would mean that the money would be available around the 1st of February. We do not like to advertise our construction projects until we have the money in hand.

You would crank automatically into what we are talking about now another period of about 2 months for advertising. So you are really not talking about a 3-month period as much as you are about a 5-month period.

This would be extremely critical.

## PLANNING

Mr. SIKES. Tell us about the manner in which the Navy is managing Trident complex planning.

Captain STACEY. I think the best way to answer that would be that Admiral Lyon is the project manager for the Trident system. Admiral Marschall is responsible for the construction of the Trident support complex and I am his representative for the project.

Admiral Lyon previously made some comments about the management of the organization which might also help answer this question.

Mr. SIKES. Is this essentially an in-house operation?

Captain STACEY. I am not sure what you mean.

Mr. NICHOLAS. The design and planning.

Captain STACEY. Architects and engineers are doing the design. We have a staff to manage the design effort, but all of the work will be contracted.

Mr. NICHOLAS. Could you expand on this for the record? The point of the question was to get the relationship between the various elements of planning, how you coordinate it within your shop, how the master planning will be accomplished, how the master planning will be integrated with the planning of the particular facilities that are being developed, and how it ties in with the environmental impact statement.

Admiral MARSCHALL. We will provide that for the record.

[The information follows:]

RELATIONSHIP BETWEEN TRIDENT MASTER PLANNING, ENVIRONMENTAL IMPACT STATEMENT AND FACILITY DESIGN

The master planning and the facility design are being coordinated within OICC Trident by the Planning and Engineering Division. They are responsible for effecting liaison with the master plan/environmental impact statement architect/engineer (A. & E.) and the various facility design A. & E.'s and coordinating their (A./E.'s) efforts

Mr. SIKES. Tell us about the relationship between master planning and the environmental impact study and the preparation of plans for the various facilities being requested.

Captain STACEY. The master planning and the environmental impact study statement will be undertaken simultaneously by the same architect engineer.

We consider this to be an ideal situation since the considerations of planning are also influenced by the environmental impact. The master planner will have approximately 2 months of leadtime to prepare the land use and utility corridor plans.

The detail design contracts for the various facilities will then follow this 2-month period. There will be a coordinated effort obviously between the master planner and the detailed design engineer as the plan develops.

Mr. SIKES. What is the milestone schedule for master planning and the environmental study?

Admiral LYON. We will provide that for the record.

[The information follows:]

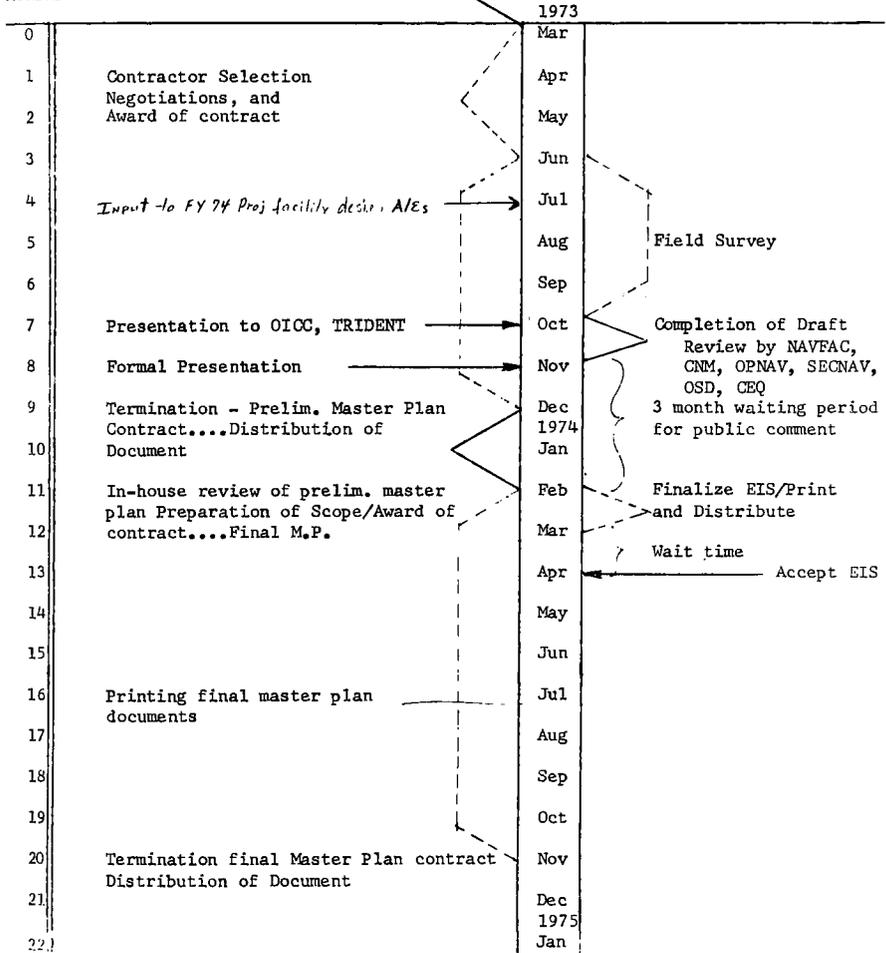
Master Plan

MASTER PLAN  
(M.P.)

ENVIRONMENTAL  
IMPACT STATEMENT  
(E.I.S.)

Preliminary Site Development  
Plan (In-House)

MONTHS



Mr. SIKES. What will be the phasing of the master planning and environmental impact study with planning of the other facilities?

Captain STACEY. The master planner is tasked with developing the planning data for each of the facilities. The master planner will provide to the individual A. & E. design firms, selected for the fiscal 1974 projects, planning information. Planning information will include flow diagrams, administration logistics, transportation patterns, et cetera.

A. & E. design firms will integrate the master planner's concept with the final design of each respective facility.

Mr. NICHOLAS. According to the schedule provided to the committee, the printing of the final master plan would not take place until July 1974, and the final master plan distribution would not take place until November 1974.

As far as formal printed material and definitizing the master plans are concerned, they presumably will not be accomplished until that time. Precisely how do you plan to integrate the planning of the facilities and the master planning and at what times?

Captain STACEY. I would like to provide you with a schedule for the record, but I can also say that the master plan initially will concentrate on the 1974 projects in the development of a preliminary master plan. It is facility planning information that he is developing that he passes on to the various A. & E.'s for the 1974 facilities.

There is obviously a close coordination needed with the A. & E.'s doing the individual projects and the master plan A. & E. We did indicate that the master plan A. & E. has a 2-month start on the individual A. & E.'s and we feel by that time he can develop pertinent data that will be passed on to these A. & E.'s.

[The information follows:]

#### INTEGRATION OF THE PLANNING OF FACILITIES WITH THE MASTER PLAN

The initial integration will take place in July 1973. At that time the master plan A/E will provide his initial input to the various A/E's who are designing the fiscal year 1974 MCON facilities. As the master plan A/E continues, he will provide additional information to the design A/E's. When the preliminary master plan is complete in December 1973, it will be made available to the design A/E's for use in coordinating their facilities. As effort on the final master plan progresses, the same pattern of providing information to design A/E's will be followed.

Mr. SIKES. What would be the time required to design the refit pier and slip and the covered explosive handling pier? When do you expect to start design of these facilities?

Captain STACEY. Design time for the initial refit and explosive handling pier is estimated at 14 months each. Design should start July 1973, for both facilities.

#### COST ESTIMATES AND SCHEDULES FOR PIERS AT BANGOR

Mr. SIKES. The cost estimates for these piers are apparently based on placing the piers into the bank of the Hood Canal; is that correct?

Captain STACEY. The cost estimate is based on the conventional siting of piers into the shoreline. Some contingency factors are included in the budget estimates to cover unknown conditions at the site. If in fact the piers are required to be built away from the shoreline,

additional costs would be incurred because of longer piling, connecting trestles, longer utility lines.

Mr. SIKES. Additional costs?

Captain STACEY. Yes, sir.

Mr. SIKES. You do not know what they would be?

Captain STACEY. No, sir. We feel we have a minimum contingency, \$1.826 million for the explosive handling pier and \$1.268 million for the refit pier built into the cost estimate, if the piers are sited somewhat into the shoreline, to cover known site conditions.

Mr. SIKES. What problems do you feel may arise on building it into the bank of the canal?

Captain STACEY. We have a problem with salmon fingerlings that migrate up and down the shoreline. Our master plan/EIS contractor will be investigating this problem as an initial effort in his contract.

Mr. SIKES. Is this the principal possible source of trouble?

Captain STACEY. I think there are several areas of impact on the environment that we have to look at very carefully.

Mr. SIKES. You are talking about the environmental impact problems?

Captain STACEY. Along the waterfront, yes, sir.

Mr. SIKES. Supply more detail for the record.

[The information follows:]

Examples of environmental impact considerations that will be investigated are :

(1) The temporary displacement of shellfish during actual waterfront construction.

(2) Temporary turbidity in the water caused by construction at or near the waterfront and its effect on fish in the canal.

(3) Temporary loss of flora on high banks in areas that have to be excavated for facilities.

(4) Examination of the esthetic effects of new facilities along the waterfront to insure that they blend into the environment.

Mr. SIKES. Isn't it important to be sure of the impact of local laws or ordinances on the design of your piers before getting very far with the actual design? When would you anticipate that these problems will be resolved?

Captain STACEY. Yes; it is important. The EIS, A. & E. is being directed to focus immediate attention on the fiscal year 1974 facilities and it is planned that his input will be available to the waterfront A. & E.'s in sufficient time to be a major influence in the siting and design of the waterfront facilities.

#### SCHEDULE FOR DESIGN

Mr. SIKES. Which of the facilities you are requesting this year will not be affected to any great degree by master planning or the environmental impact study?

Captain STACEY. We feel all of the facilities in the 1974 program will be affected by the master plan and environmental impact study.

Mr. SIKES. At that point in the overall planning will your utility and site improvement layouts be sufficiently fixed so that you can begin detailed design?

Captain STACEY. We anticipate the utility and site improvement layouts will be sufficiently fixed to allow the detailed design to start in August 1973.

Mr. SIKES. How long would it take to complete the detailed design?

Captain STACEY. Completion of the detailed design of the utilities and site improvements varies depending on the complexity of each project.

Mr. NICHOLAS. The present schedule indicates in August 1973, the design won't even have been presented to the officer in charge of construction of the Trident program. That is to take place in October.

Would it be proper to let the detailed design go ahead before the Navy has had a chance to look at the master plan?

Captain STACEY. You are speaking of the utility and site improvement.

Mr. NICHOLAS. The preliminary site development.

Captain STACEY. One of the first tasks that we are giving the architect engineer of the master plan is to develop total requirements for utilities and site improvements. This we envision to be completed in August 1973.

#### ENVIRONMENTAL IMPACT OF PIER CONSTRUCTION

Mr. SIKES. According to information supplied the committee, certain types of construction which would disturb the floor of the Hood Canal are not allowed from early March through June.

Is it economical to start construction of the piers in December 1974 as now planned, since construction in the canal will be halted within 2 or 3 months?

Captain STACEY. Yes, sir, we feel it is economical to start the construction in December. Certain phases such as the pile driving could be commenced and a portion completed prior to the stoppage in March.

The current construction schedule would allow some phases of construction such as placing pile caps, beams, and slabs, which do not disturb the canal floor, during the stop period.

Mr. SIKES. Do you feel you have a good estimate of the costs of these piers in view of the uncertainties as to design and construction schedules which we have discussed? If you started construction of these facilities after June 1975, couldn't the appropriation for them be delayed for a year?

Captain STACEY. Yes, present estimates of cost are valid as they incorporate consideration for compensating for construction stoppage. The appropriation could be delayed however; this would result in heavy construction peaks later in the program with a resulting increase in the environmental impact.

#### COST BREAKOUT FOR FISCAL YEAR 1974 REQUEST

Mr. SIKES. Could you supply for the record a breakout of the estimated cost of the facilities requested in fiscal year 1974. Also supply for the committee's use the more detailed breakouts of these costs, usually shown on 1391 justification sheets. (These are not printed in the record to avoid prejudicing the Navy's position in contracting for facilities.)

[The information follows:]

FACILITIES COST SUMMARY—FISCAL YEAR 1974 TRIDENT MILCON PROGRAM COST

	<i>Thousands</i>
Support complex facilities, Bangor:	
Covered explosive-handling pier-----	\$21, 295
Refit pier and slip-----	14, 793
Utilities (1st increment)-----	16, 827
Land acquisition-----	5, 100
Site improvement-----	13, 469
Weapons/navigation training building-----	11, 392
Warehouse-----	294
<b>Total</b> -----	<b>83, 170</b>

FLIGHT TEST FACILITIES—NAVAL ORDNANCE TEST UNIT,  
CAPE KENNEDY

Wharf and dredging-----	31, 345
Missile checkout buildings (construction and alteration)-----	2, 158
Guidance/telemetry building additions and alterations-----	218
Lifting device proofing facility-----	467
Launch complex, 25 alterations-----	962
<b>Total</b> -----	<b>35, 150</b>
<b>Grand Total</b> -----	<b>118, 320</b>

COST SAVINGS

Mr. SIKES. Included in the estimated cost for the covered explosive pier is a 120-ton bridge crane at an estimated cost of \$2.3 million. Has the explosion-proof requirement been deleted by the Navy? How much should this reduce costs?

Captain STACEY. The initial estimate of cost for the bridge crane was predicated on a requirement for an explosion-proof type of crane. Subsequent to the original estimate, a scope change to 120 ton was initiated and the explosion-proof requirement was eliminated. The cost estimate for the crane was then reduced to \$600,000. As the crane is but a small part of the total facility, the cost estimate for the explosive-handling pier has not been reduced, pending a more detailed analysis by the A. & E.

Mr. SIKES. The project for utilities includes \$3.3 million for a sewage treatment plant. The county is apparently building a new sewage treatment plant which it has been reported could handle the Trident installation. Have you considered the use of the county plant? How much would this reduce your military construction cost?

Captain STACEY. Consideration is being given to using the county sewage plant. The architect and engineer for the master plan is being tasked to conduct an economic and feasibility analysis of connecting into the county plant or constructing a new plant on the Trident support site. After completion of the analysis, a decision will be made as to which alternative will be pursued. At that time we will know the impact upon the cost of the military construction program.

## UTILITIES

Mr. SIKES. In view of the fact that master planning for the complex has just gotten underway, are you confident that all of the other utilities requested in fiscal 1974 will be required this year?

Captain STACEY. The utilities requested in the 1974 program are based on a preliminary site-development plan and are phased to provide the minimum required utilities to be functional as other projects in the program are completed. An initial effort of the master plan, to be completed in August 1973, will be the confirmation of these utility requirements. We will keep the committee informed of our latest estimates.

Mr. SIKES. Very good.

## LAND ACQUISITION

I see that the amount for land acquisition has diminished from the budget request by \$6.9 million.

What do you intend to do with this money?

Admiral MARSCHALL. The \$6.9 million will be used for military construction projects not directly related to the Trident program.

Mr. SIKES. Will you show us on the map what you plan to acquire?

How much land are you going to buy and where is it?

Captain STACEY. The land we are talking about is comprised in three portions. Our best estimate of the land requirement is this. [Pointing to chart.]

Admiral MARSCHALL. Outline the base first for the chairman.

Captain STACEY. The base is indicated by the dotted line with the Hood Canal right here.

Mr. SIKES. What is the total acreage?

Captain STACEY. I will have to give the exact figure for the record, about 8,000 acres.

[The information follows:]

The total acreage within the current Bangor annex property lines is 7,748 acres.

Captain STACEY. We are talking about 15 acres at Vinland, 36 acres in this area, and 85 in the Bangor area: A total of 136 acres.

Mr. SIKES. That seems quite marginal in that it is on the perimeter of the base. Why is it necessary to have that additional land?

Captain STACEY. There are explosive buffer zones that are required.

Mr. SIKES. If you buy 15 acres at the extreme eastern corner of the property, the tract on the southern border, apparently a narrow strip, and 85 acres in the north-central area, you still will be abutting other privately owned land, I presume.

Is that true or not?

Captain STACEY. Yes, sir, that is true.

Mr. SIKES. Why is it necessary to buy these small portions of land when you will still have, I would assume, the problem of proximity of private ownership?

Captain STACEY. There are buffer zones that are required in which there can be no habitability. If we put an explosive-handling pier in this area, when you swing the arc, it cuts into Vinland by an amount of 15 acres. When you swing it down in this direction, it cuts into the

boundary at this point requiring about 36 acres. Similarly, when you get here for the refit piers, there is a certain explosive safety distance required, and when you swing that arc it cuts into Bangor.

Mr. SIKES. That explains it.

What is the anticipated cost to be?

Captain STACEY. Our best estimate is approximately 5 million.

Mr. SIKES. It would appear that your present request may have several duplications of costs. For instance, waterfront land shows up three times in the compilation supplied to the committee: (1) as part of the total land, (2) separately identified as waterfront land, and (3) as a part of the estimated cost of the waterfront dwellings. Also "other dwellings" includes a portion for land which is already included in the estimate for land. Can you look at your estimates again and tell us what you really require?

Captain STACEY. I would like to clarify this for the record.

The chart shows our current best estimate of land requirements.

Mr. SIKES. We want to be sure we have a clear understanding and you have not made a mistake.

Captain STACEY. Yes, sir, we will provide details for the record.

[The information follows:]

Our estimates have been reviewed and there is no duplication in land acquisition costs. The funds requested in the fiscal year 1974 MILCON program for the land acquisition represents the best estimate for the anticipated maximum amount of land to be acquired because of the explosive safety zone requirements which were previously explained in the hearing. The exact amount of land will be determined as the master plan A. & E. sites each of the Trident facilities, considering all the Trident support operations, as well as existing NAD Bangor functions that will be retained. Since uncertainties still exist concerning the current operation that will remain at Bangor, and the final location of the Trident facilities, particularly the waterfront area, a large contingency has been included in the estimate for land acquisition. Phase I of the master plan is scheduled for completion in December 1973, at which time the ultimate real estate requirements will be defined. At that time a better cost estimate will be developed and the committee will be advised of any changes from the \$5.1 million estimate.

Admiral LYON. I might point out we did at one time have considerably more money in the budget for land acquisition than we have now. We have been able to reduce the amount of land required by reexamining the explosive safety distances required and obtaining permission from the Explosives Safety Board to reduce some of the factors that decreased the amount of waterfront land we needed.

This is the most difficult portion to comply with, of course. On the Hood Canal it is very valuable and we do not want to displace people unnecessarily.

Mr. SIKES. Of course.

Captain STACEY. Yes, sir.

Mr. SIKES. Is it possible in view of the cost of the land and this displacement to shift the site of your facilities sufficiently to avoid this land acquisition?

Admiral LYON. Mr. Chairman, we have been working on this for about 12 months to obtain the most efficient arrangement on the waterfront. It is possible that we can reduce the land acquisition by some degree by moving some of the collocated facilities that are there to a facility that already exists at Indian Island.

Mr. SIKES. When will you know whether this can be done or not?  
Admiral LYON. It is being discussed within the Chief of Naval Operations right now.

Mr. SIKES. You will keep us advised?

Admiral LYON. Yes, sir.

Mr. SIKES. Does the acreage you propose to acquire include land for the potential growth of the support complex?

Captain STACEY. Yes, it does.

Mr. SIKES. Does it appear that the currently projected location of the missile processing facility will require the acquisition of land for safety purposes?

Captain STACEY. The current projected location of the missile processing facility will not require the acquisition of land.

#### EXISTING AMMUNITION PIER

Mr. SIKES. How are you going to deal with the mission of the existing ammunition pier at the site?

Admiral LYON. The present level of operations of the existing ammunition pier is not incompatible with the Trident development, but it does affect the amount of land acquisition required, as I just mentioned, sir. The Navy is at the present time analyzing the long-term requirement for conventional munitions fleet support in the Puget Sound area as a result of the base relocation and readjustment, and also as a result of the selection of Bangor for the Trident site.

As those studies are completed, I will keep you informed.

#### RAILROAD

Mr. SIKES. Present plans call for a railroad and missile hauling road. Where will these be located?

Captain STACEY. You may recall in the briefing I gave this morning an extension of the existing railroad spur will be required between the marginal wharf and the explosive handling pier. It will be in that area where we will also extend the missile haul road.

Mr. SIKES. What will the railroad be used for?

Captain STACEY. It will be used for the transportation of concrete ballast cans used in the submarine during the sea trials.

Mr. SIKES. Is it more economical to provide a railroad than it is to move this material by ship?

Captain STACEY. This has proved to be the most economical means for the transportation of ballast cans in the current programs, Poseidon and Polaris.

Mr. SIKES. What about by barge?

Captain STACEY. We would have to investigate this.

Mr. SIKES. I would think you would already have investigated it.

Certainly water transportation is cheaper than building a railroad.

Admiral LYON. We have looked at it, Mr. Chairman, and that certainly is an alternative. However, the Navy already owns a railroad right-of-way that provides rail access into the base and down into the waterfront.

Mr. SIKES. But the railroad is not there?

Admiral LYON. Yes, sir; the railroad is there. It is in use at the present time. All we are doing is extending it.

Mr. SIKES. I misunderstood. I thought there would be some railroad construction.

Now you are talking about hauling by railroad versus hauling by other means.

Admiral LYON. Yes, sir.

We will extend that by some short distance to where the pier will be located.

Mr. SIKES. I would still like to have a cost comparison with water transportation.

Captain STACEY. Yes, sir.

Mr. SIKES. And the feasibility of each.

[The information follows:]

COMPARISON OF RAIL TRANSPORTATION VERSUS WATER TRANSPORTATION FOR HANDLING OF TRIDENT SUBMARINE BALLAST CANS

The present method of handling ballast cans, which will also be used for Trident, is by rail. They are received from the manufacturer by flatcar and are offloaded by mobile crane and stored immediately adjacent to a rail spur. When they are required at the pier, they will be loaded on a flatcar, transported to the wharf, and directly loaded into the submarine by the bridge crane. These ballast cans are the same diameter and weight as the missile. They are bulky and awkward to handle and handling them by rail has proved to be the most efficient, economical, and safe method. The cost estimate for extending the railroad to the explosive-handling piers is \$68,000. There would be no requirement to purchase additional equipment to handle the ballast cans.

Transporting the ballast cans to the piers by water poses several problems. Either a new storage site for the ballast cans must be provided at the waterfront or they would have to be transported by truck from the existing storage site to a point where they could be loaded onto a barge. A mobile crane would be required for loading onto the truck and a second mobile crane would be required to offload from the truck onto a barge. An alternative to having a second mobile crane would be moving the crane from the storage site to the barge loading point every time you were transporting ballast cans, which would be a cumbersome procedure.

Once the ballast cans have been transported by barge to the vicinity of the explosive-handling piers (EHP), another mobile crane would be required to offload from the barge to the EHP. The bridge crane at the EHP could not be utilized because with a submarine berthed at the pier, the barge could not be maneuvered into a position where the bridge crane could pick up the ballast cans. Once the ballast cans are on the pier, they would then be loaded into the missile tubes by the bridge crane.

Thus, transporting the ballast cans by barge would require handling them at least three times, and possibly four times for each movement, vice twice when rail transportation is used. It would require a new storage site at the waterfront or the procurement of an additional mobile crane to accomplish the increased handling. Finally it would require the operation and maintenance of a barge to transport the ballast cans. The sum of these costs would easily exceed the \$68,000 required to extend the railroad. Further, the additional handling of these bulky, awkward objects would provide increased opportunity for accident. Handling the ballast cans by water is not feasible with all of these disadvantages.

COSTS OF PIERS

Mr. SIKES. Can you explain the seeming discrepancy in the cost for piers at Cape Kennedy and at Bangor?

Captain STACEY. By deducting the dredging cost of \$17 million from the total Cape Kennedy wharf and dredging item, the cost of the wharf approximates \$14 million. The refit pier at Bangor is \$15 million, and the explosive-handling pier \$21 million. The slightly higher cost for the refit pier at Bangor over the wharf at Cape Ken-

nedly is due to the greater tide at Bangor, which necessitates a greater length of piling. The explosive-handling pier is unique in that it is a covered structure, and consequently reflects a higher cost.

Mr. NICHOLAS. The detail provided for Bangor indicates that a pier would cost \$3.8, or \$3.9 million for the explosive-handling pier, and the refit pier and slip would cost some \$6,168,000 and the quaywall associated with that some \$4,600,000. That is still much lower. You are not providing a covered pier at Cape Kennedy?

Admiral LYON. No, sir; we are not.

Captain STACEY. A detailed analysis will be provided for the record. [The information follows:]

The refit pier is approximately twice the square-foot size of the explosive-handling pier due to need for additional feet of berthing and laydown areas associated with refit operations. Also, part of the cost of the substructure of the explosive-handling pier is incorporated into the cost estimate of the slip cover because of its functional relationships to the cover. The total breakout of costs for the pier structure of the explosive-handling pier should be \$3.9 million for pier and quay and \$1.6 for foundations for a total of \$5.5 million for the structure.

The difference may be in how the cost is broken out on the sheet you have as compared to the total cost of the pier. There are several elements that go into making up the cost.

#### TRAINING BUILDING

Mr. SIKES. What is the cost per square foot of the training building you have?

Commander KIRKPATRICK. \$81.56.

Mr. SIKES. That seems very high. Describe the building more fully and tell us why the cost is so great.

Captain STACEY. The training building has in it all of the mockups of the navigation and the weapons facilities that are on the submarine, including the missile tubes. All of these require special treatment and an extensive amount of foundation work required to support these various types of equipment.

#### FACILITIES AT CAPE KENNEDY

Mr. SIKES. I note that the cost of the pier and dredging at the cape has increased markedly from earlier estimates, about \$8 million for the pier. How do you explain this increase?

Captain STACEY. The major change in cost has been in the dredging. The original quantity of material to be dredged was increased due to widening of the channel into the turning basin and also shifting the center line of the existing entrance channel to prevent undermining of the existing jetties.

Mr. SIKES. Will the Trident submarine be the initial test bed for missile testing? Will the other test vehicle require all this dredging?

Captain STACEY. The Trident submarine will not be the initial shipboard test bed for missile testing. The initial shipboard test bed will be the Poseidon submarine backfitted for the C-4 missile. The Poseidon submarine will require the dredging of the turning basin to provide a sufficient explosive safety radius for the loading/offloading of the

C-4 missile. It would not require dredging of the turning basin to the full project depth nor would it require the deepening of the entrance channel. However, construction sequencing, prudent costing, and contract administration efficiency dictate dredging to the Trident project depth.

Mr. SIKES. Does the Eastern Test Range have the capability for testing the full range of the follow-on missile?

Admiral LYON. Yes, sir, it has the full capability to test both the C-4 and growth Trident II missiles.

Mr. SIKES. How will the schedule for your construction at the cape tie in with the construction of facilities for the Space Shuttle?

Have you examined this?

Captain STACEY. Our investigations have shown that we do not have any conflict. We will submit a comment for the record.

[The information follows:]

The Trident construction schedule for Cape Kennedy extends from early 1974 through mid-1976 with a total expenditure of \$35 million construction funds.

The Space Shuttle construction schedule for Cape Kennedy extends from early 1974 into 1978 with a total expenditure of approximately \$150 million construction funds.

The Trident facilities are located at the south end of the cape while the Space Shuttle facilities are located at the north end. The largest percentage of Trident construction involves trades peculiar to waterfront work while the Space Shuttle is predominately related to work on launch complex 39 and a landing strip.

No interference or conflicts are anticipated between these two construction projects.

Mr. SIKES. We would like to know if there is any possibility of difficulty in connection with the volume of work which might be going on at the same time.

Captain STACEY. Yes, sir.

#### LABOR CONTRACTS

Mr. SIKES. Do you anticipate any difficulty with the labor contracts either at the Cape or Bangor?

Captain STACEY. No, we do not anticipate any difficulty.

Mr. SIKES. What is the status of labor agreements at each location?

Captain STACEY. There are existing labor agreements at each location and we can provide the detail for the record.

Mr. SIKES. Give us for the record the period for which those agreements are to run.

[The information follows:]

The periods for which labor agreements run are:

#### FOR SEATTLE

Carpenters until May 31, 1974.

Cement masons until May 31, 1974.

Electricians until June 1, 1974.

Ironworkers until July 20, 1973.

Laborers until January 1, 1975.

Operating engineers—now negotiating.

Plumbers and pipefitters until May 31, 1974.

Sheetmetal workers—now negotiating.

Teamsters—now negotiating.

## FOR CAPE KENNEDY

Carpenters until September 30, 1973.  
 Cement masons until April 30, 1975.  
 Electricians until April 1, 1974.  
 Ironworkers until October 31, 1973.  
 Laborers until March 31, 1974.  
 Operating engineers—now negotiating.  
 Plumbers and pipefitters until August 31, 1973.  
 Sheetmetal workers until July 1, 1973.  
 Teamsters—now negotiating.

Mr. NICHOLAS. Are you planning any master long-term labor agreement over the period of construction out there?

Admiral MARSCHALL. Let me answer that.

We have talked both with the labor unions and the associated general contractors to try to figure out the best approach to this problem. We have been assured to date, particularly in the Northwest that there will be a good working arrangement between the two elements.

As you know, there has been at Cape Canaveral a master contract which has been developed over the years during construction there. As this comes up for renegotiation we will certainly keep our eyes and ears open and make sure we are party to any other agreement as an interested observer.

## COMMUNITY IMPACT

Mr. SIKES. What community impact has there been as a result of Trident construction at each site, pro and con?

Admiral LYON. Mr. Chairman, our environmental impact statement for the Cape Canaveral work has been on file now for almost a month, and there have been no adverse criticisms by the community, local surrounding towns as far as I know. Some comments are in and they are acceptable.

The environmental impact statement is just commencing at the Bangor site. We have established an environmental data base collection system where we will for the next several months be collecting data over a 1-year period to establish what the environment is there in the detail that we deem necessary to see if we are affecting it.

There have been several meetings out there with local community representatives and, while there have been some comment concerning the location of the Trident site and the fact that Trident is moving in there, there has been no great opposition to development, and in fact the surrounding community seems to support it.

Mr. SIKES. What would be the impact population wise? How many people will be moved into each location?

Captain STACEY. At Bangor we anticipate an addition of approximately 30,000 in the community. I don't feel it will have any impact of any magnitude at Cape Kennedy.

Mr. SIKES. Those at Bangor would be over what period of time?

Captain STACEY. This would be over a 5- to 7-year period as the facility is completed and as the submarines are brought into the support complex.

Mr. SIKES. What is the status of planning of projects at the Cape?

Captain STACEY. All of the five projects at the cape are currently under final design.

Mr. SIKES. Questions?

Mr. DAVIS. No questions.

Mr. SIKES. Gentlemen, this has been a very helpful briefing and, I think, a complete one. We appreciate your detailed answers and are very glad to have had an opportunity to discuss this important subject with you.

Admiral LYON. It is always a pleasure, Mr. Chairman, to appear before your committee, sir.

TUESDAY, JUNE 12, 1973

Mr. MCKAY. The committee will come to order.

We will proceed with the Navy. The 1st Naval District is next. Insert page I-1 in the record.

### FIRST NAVAL DISTRICT

[Page I-1 follows:]

#### DEPARTMENT OF THE NAVY—MILITARY CONSTRUCTION PROGRAM, FISCAL YEAR 1974

[In thousands of dollars]

Installation and project	Authorization	Appropriation
1st Naval District—State of Maine:		
Naval Air Station, Brunswick (LANTFLT):		
P-065 Operational trainer building (171.35—2,328 SF).....	135	135
Naval Security Group Activity, Winter Harbor (COMNAVSECGRU): P-026 Theater (740.56—150 seats).....	232	232
Total, 1st Naval District.....	367	367

#### NAVAL AIR STATION, BRUNSWICK, MAINE

Mr. MCKAY. Let us take up now Naval Air Station, Brunswick, Maine. Mr. Reporter, insert page I-2 in the record, please.

[Page I-2 follows:]

1. DATE 19 FEB 1973		2. DEPARTMENT NAVY		3. INSTALLATION FY 1974 MILITARY CONSTRUCTION PROGRAM			4. INSTALLATION NAVAL AIR STATION						
4. COMMAND OR MANAGEMENT BUREAU COMMANDER IN CHIEF, ATLANTIC FLEET				5. INSTALLATION CONTROL NUMBER 1450-202		6. STATE/COUNTRY BRUNSWICK, MAINE							
7. STATUS ACTIVE				8. YEAR OF INITIAL OCCUPANCY 1943		9. COUNTY (U.S.) CUMBERLAND, FRANKLIN, SAGadahoc, KNOX		10. NEAREST CITY WITHIN CITY					
11. MISSION OR MAJOR FUNCTIONS  Maintain and operate facilities and provide services and material to support operations of aviation activities and units of the operating forces of the Navy and other activities and units as designated by the Chief of Naval Operations.  <u>Major Activities Supported:</u> Commander Fleet Air Wings Atlantic Commander Fleet Air Brunswick Commander Fleet Air Wing Five Six Patrol Squadrons Survival, Escape, Resistance and Evasion School				12. PERSONNEL STRENGTH			PERMANENT		STUDENTS		SUPPORTED		TOTAL (9)
				OFFICER (1)	ENLISTED (2)	CIVILIAN (3)	OFFICER (4)	ENLISTED (5)	OFFICER (6)	ENLISTED (7)	CIVILIAN (8)		
				a. AS OF 31 DEC 1972	499	2,529	607	21	19	15	54	0	3,744
				b. PLANNED (End FY 1975)	526	2,604	649	21	19	15	54	0	3,888
13. INVENTORY													
LAND		ACRES (1)		LAND COST (\$000) (2)		IMPROVEMENT (\$000) (3)		TOTAL (\$000) (4)					
a. OWNED		3,412.32		548		48,591		49,139					
b. LEASES AND EASEMENTS		19,008* - 89#		3/78* - 29#		76* - 733#		838					
c. INVENTORY TOTAL (Except land cost) AS OF 30 JUNE 19 <u>72</u>													
d. AUTHORIZATION NOT YET IN INVENTORY													
e. AUTHORIZATION REQUESTED IN THIS PROGRAM													
f. ESTIMATED AUTHORIZATION - NEXT 4 YEARS													
g. GRAND TOTAL (c + d + e + f)													
55,552													
14. SUMMARY OF INSTALLATION PROJECTS													
PROJECT DESIGNATION													
CATEGORY CODE NO.		PROJECT TITLE			TENANT COMMAND PRIORITY	UNIT OF MEASURE	AUTHORIZATION PROGRAM		FUNDING PROGRAM				
a		b				d	SCOPE	ESTIMATED COST (\$000)	SCOPE	ESTIMATED COST (\$000)			
171.35		OPERATIONAL TRAINER BUILDING			/	SF	2,328	135	2,328	135			

## NAVAL AIR STATION, BRUNSWICK, MAINE, \$135,000

This station provides support for six patrol squadrons engaged in antisubmarine warfare.

The operational trainer project will provide a facility to house a directional Jezebel sonobouy system training device to be relocated from the NAS Patuxent River, Md.

*Status of funds*

Cumulative appropriations through fiscal year 1973.....	\$33, 717, 000
Cumulative obligations, December 31, 1972 (actual).....	31, 452, 147
Cumulative obligations, June 30, 1973 (estimated).....	32, 701, 647

Project	Design cost	Percent complete, Apr. 1, 1973
Operational trainer building.....	\$7, 803	42

Mr. MCKAY. What types of aircraft are based here?

Mr. MURPHY. At NAS Brunswick, we base P-3 land-based ASW patrol aircraft.

Mr. MCKAY. That is all?

Mr. MURPHY. Yes, sir. It is the only type aircraft we base there.

Mr. MCKAY. Will the operational trainer building complete the requirements for the P-3 aircraft which you have here?

Mr. MURPHY. Yes, sir, it will complete the requirements for synthetic training. However, in the out-years we have a balance of projects that are required in the form of aircraft maintenance facilities, mainly.

Mr. DAVIS. How many P-3's do you have at Brunswick?

Mr. MURPHY. We have 6 squadrons of 9 planes each, 54 total.

Mr. DAVIS. Do you have some superimposed administrative responsibilities up there?

Mr. MURPHY. Yes, sir. We have the Headquarters Command for all of these squadrons in the Atlantic Fleet. That headquarters is there and control squadrons at Jacksonville also.

Mr. DAVIS. Thank you.

## NAVAL SECURITY GROUP ACTIVITY, WINTER HARBOR, MAINE

Mr. LONG. Naval security group activity. Insert page 4 in the record.  
[Page 4 follows:]

1. DATE 19 FEB 1973		2. DEPARTMENT NAVY		3. INSTALLATION FY 19 74 MILITARY CONSTRUCTION PROGRAM			5. INSTALLATION NAVAL SECURITY GROUP ACTIVITY							
4. COMMAND OR MANAGEMENT BUREAU NAVAL SECURITY GROUP COMMAND			6. INSTALLATION CONTROL NUMBER 5771-910			8. STATE/COUNTRY WINTER HARBOR, MAINE								
7. STATUS ACTIVE			9. YEAR OF INITIAL OCCUPANCY 1935			6. COUNTY (U.S.) HANCOCK		10. NEAREST CITY 60 MILES NORTHWEST TO BANGOR						
11. MISSION OR MAJOR FUNCTIONS Perform Naval Security Group functions as directed by the Commander Naval Security Group and perform other functions as directed by the Chief of Naval Operations Major Function: Provide secure communications essential to the defense of the US				12. PERSONNEL STRENGTH		PERMANENT			STUDENTS		SUPPORTED		TOTAL (9)	
				OFFICER (1)	ENLISTED (2)	CIVILIAN (3)	OFFICER (4)	ENLISTED (5)	OFFICER (6)	ENLISTED (7)	CIVILIAN (8)			
				a. AS OF 31 Dec 1972	16	390	52	0	0	0	0	0	0	458
				b. PLANNED (End FY 1977)	17	346	52	0	0	1	5	0	421	
				13. INVENTORY										
LAND		ACRES (1)		LAND COST (\$000) (2)		IMPROVEMENT (\$000) (3)		TOTAL (\$000) (4)						
a. OWNED		670		44		8,435		8,479						
b. LEASE AND EASEMENT #		13* - 1#		(0* - 3#)		10* - 0#		13						
c. INVENTORY TOTAL (Except land rent) AS OF 30 JUNE 19 72								8,492						
d. AUTHORIZATION NOT YET IN INVENTORY								194						
e. AUTHORIZATION REQUESTED IN THIS PROGRAM								232						
f. ESTIMATED AUTHORIZATION - NEXT 4 YEARS								646						
g. GRAND TOTAL (c + d + e + f)								9,564						
14. SUMMARY OF INSTALLATION PROJECTS														
PROJECT DESIGNATION					TENANT COMMAND PRIORITY			AUTHORIZATION PROGRAM		FUNDING PROGRAM				
CATEGORY CODE NO. a	PROJECT TITLE b				UNIT OF MEASURE d	SCOPE e	ESTIMATED COST (\$000) f	SCOPE g	ESTIMATED COST (\$000) h					
740.56	THEATER				57	SE	150	232	150	232				

162

## NAVAL SECURITY GROUP ACTIVITY, WINTER HARBOR, MAINE, \$232,000

The Naval security group activity is part of the high-frequency direction finder network, and performs an antisubmarine warfare support mission vital to the security of the Nation.

The theater project will provide a facility for movie, theatrical, and lecture presentations. There are no other indoor or outdoor theaters available within 50 miles of the base and current use of the gymnasium for such purposes conflicts with physical fitness programs and station athletic events.

*Status of funds*

Cumulative appropriations through fiscal year 1973.....	\$5, 772, 000
Cumulative obligations, Dec. 31, 1972 (actual).....	5, 568, 056
Cumulative obligations, June 30, 1973 (estimated).....	5, 644, 000

## DESIGN INFORMATION

Project	Design cost	Percent complete, Apr. 1, 1973
Theater.....	\$12, 473	26

Mr. LONG. What are you currently using for a theater here?

Mr. TAYLOR. Sir, we are currently using a gymnasium for the dual purpose of gymnasium and theater.

Mr. PATTEN. Why does this project rate such a low priority, No. 57? Is this a weak installation?

Admiral MARSCHALL. Sir, it is not a weak installation at all. It is going to be there for some time as far as any of us know. We just have so many important projects in our arsenal that we had to assign it some priority. It is for people, it is important.

Mr. PATTEN. Are there any questions?

Mr. DAVIS. Have you ever had a theater there?

Admiral MARSCHALL. No, sir.

Mr. DAVIS. You have over 400 people there?

Admiral MARSCHALL. Yes, sir.

Mr. DAVIS. Is the gymnasium so bad? Your justification refers to the fact that sometimes its use for a theater conflicts with physical fitness programs.

Admiral MARSCHALL. Yes, sir, this is a very isolated station and the need for physical training very real. The conflict in scheduling both movies and physical training is the reason for this request. The people are so isolated that we really think this project is warranted.

## NAVAL SHIPYARD, PORTSMOUTH, NEW HAMPSHIRE

Mr. PATTEN. Let's turn to Portsmouth, N.H.

I do not see any appropriate justification sheet. Could you provide one for the record?

Commander KIRKPATRICK. Yes, sir.

[The justification sheet follows.]



Admiral MARSCHALL. Sir, in my statement on Friday I indicated that this was one of the projects of the program change which we had requested from the Department of Defense. It is currently at OMB and will come to the committee as soon as it has cleared OMB. It is a substantial project which we think is needed.

#### NAVAL SHIPYARD MODERNIZATION

##### FISCAL YEAR 1974 NAVAL SHIPYARD MODERNIZATION PROGRAM

Mr. PATTEN. Let us discuss shipyard modernization. What amount are you requesting in fiscal year 1974 for construction for the modernization of your naval shipyards?

Admiral MARSCHALL. Captain Ginn will answer that.

Captain GINN. We are asking for \$18,380,000 for modernization in 1974, Mr. Patten. There are also other dollars involved for personnel support and pollution abatement.

Mr. PATTEN. How much for equipment procurement?

Captain GINN. Our present budget plan requires \$7.7 million for fiscal year 1974.

##### LONG RANGE SHIPYARD MODERNIZATION COSTS

Mr. PATTEN. What is the present estimate of the long-range requirements for this program and how much are you expecting to request in fiscal years 1974 through 1978? I mean the whole modernization program?

Captain GINN. The military construction requirements for fiscal year 1975 is currently at a total of \$52.1 million. That includes modernization, pollution abatement and personnel support.

Mr. PATTEN. You can provide details for the record on military construction and equipment costs projected by shipyard for each of these years.

[The information follows:]

Military Construction and equipment dollars programmed for Fiscal Years 1974 through 1978 are shown below. The Military Construction Program for the shipyards includes projects for the Shipyard Modernization, Personnel Support and Pollution Abatement Programs.

<u>MILITARY CONSTRUCTION</u>						
<u>(In Millions)</u>						
<u>SHIPYARD</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>TOTAL</u>
PTSMH	2.8	5.1	*	*	*	7.9
PHILA	2.4	3.3	4.4		.3	10.4
NORVA	17.9	6.4	2.3	2.2	14.3	43.1
CHASN	.6	4.0	1.1	7.7	2.8	16.2
LBEACH	14.2	11.7	4.0	8.1	7.2	45.2
HUNTERS PT	.3					.3
MARE	11.9	10.3	9.1		.9	32.2
BREM	13.6	8.3	21.8	8.0	2.1	53.8
PEARL	1.3	3.0	1.5	1.8		7.6
TOTAL	65.0	52.1	44.2	27.8	27.6	216.7

\*Not yet programmed

OTHER PROCUREMENT, NAVY (OPN)  
ASSOCIATED WITH MILITARY CONSTRUCTION PROJECTS

<u>SHIPYARD</u>	<u>FY 74</u>	<u>FY 75</u>	<u>**FY 76</u>	<u>**FY 77</u>	<u>**FY 78</u>	<u>TOTAL</u>
PTSMH	0	0				
PHILA	.1	.3				
NORVA	.3	1.3				
CHASN	1.8	.7				
LBEACH	0	.1				
MARE	0	1.8				
BREM	.1	.1				
PEARL	0	.3				
TOTAL	2.3	4.5				

\*\*FYDP Figures are not broken down by individual shipyards beyond budget year (FY 75)

TOTAL OTHER PROCUREMENT, NAVY (OPN)  
(In Millions)

<u>SHIPYARD</u>	<u>FY 74</u>	<u>FY 75</u>	<u>***FY 76</u>	<u>***FY 77</u>	<u>***FY 78</u>	<u>TOTAL</u>
PTSMH	.9	3.2				
PHILA	.9	1.4				
NORVA	.8	2.5				
CHASN	2.5	2.0				
LBEACH	.3	1.3				
MARE	.3	2.1				
BREM	1.3	1.2				
PEARL	.7	1.4				
TOTAL	7.7	15.7	10.9	10.9	10.9	56.1

\*\*\*FYDP figures are not broken down by individual shipyards beyond budget year (FY 75).

## EFFECT OF REALINEMENTS ON SHIPYARD MODERNIZATION PROGRAM

Mr. PATTEN. What has been the effect of the shore establishment realignment program upon the military construction requirements for your naval shipyards?

Captain GINN. Obviously, it removed the military construction requirements for the two shipyards that we are inactivating and closing. Other than that, there are a small number of projects that are involved, four to be exact, associated with the transfer of active functions to other shipyards from those yards that are closing.

Mr. PATTEN. What items in the fiscal year 1974 program are required as a result of these realignments?

Captain GINN. We have an item for moving the computer support office from Boston to Philadelphia, an item for moving the underwater sound transducer and switch, electronics overhaul and repair work out of Boston to either Philadelphia or Portsmouth. We do not have a firm, fixed location on that at the moment. Though it is planned for Philadelphia, it depends on a survey of currents and underwater noises. We have a project at Mare Island which is an electronics project for Crypto, moving out of Hunters Point. We have a project in Hunters Point to support drydock No. 4 as an emergency docking facility for carriers.

Mr. PATTEN. What projects will be required after the fiscal year 1974 program?

Perhaps you can provide details for the record and give us a little bit now.

Captain GINN. All right, sir. Relating to shipyard closures?

Mr. PATTEN. Right.

Captain GINN. There will be no other projects with the possible exception of a second increment that is involved with the movement of the transducer and electronics work out of Boston. This requirement depends on whether the project goes to Philadelphia or whether it ends up in Portsmouth as a result of the survey. The survey is going on right now. I simply cannot give you a firm answer.

Mr. PATTEN. Before we get this bill passed, you will probably have it?

Captain GINN. Yes, sir.

We are supposed to have the answer by the end of this week.

[The information follows:]

Relocation of the electronics work related to underwater sound gear, previously accomplished at the Boston Naval Shipyard, will be transferred to the Portsmouth Naval Shipyard. The decision to relocate to the Portsmouth Naval Shipyard in lieu of Philadelphia resulted from analysis of a site sound survey just completed. Acoustic test sites surveyed at Philadelphia were unacceptable, whereas Portsmouth's sites were satisfactory. Therefore, the Philadelphia P-502, electronics equipment facility in the fiscal year 1974 program is no longer required. A project will be required at the Naval Shipyard, Portsmouth. This project, relocation of electronics repair facility at \$735,000 will convert 34,000 square feet of office space to a benchwork area, convert 15,000 square feet of industrial area to a testing area, provide a wooden test tank 55 feet in diameter by 40 feet high, and relocate and modify a 20-ton portal crane with foundation from the Boston Naval Shipyard.

## CONSTRUCTION AT SHIPYARDS TO BE CLOSED

Mr. PATTEN. In recent years there have been various items built at the naval shipyards which are to be closed. In addition, funds have been provided for items, including pollution abatement items, for which no construction has yet been awarded. For the last 5 fiscal years, what amount of construction has been awarded at Boston?

Commander KIRKPATRICK. We have awarded one project at Boston in the last 5 years, a sewage system for the drydocks initial cost \$223,000.

Mr. PATTEN. That may not be a total loss either?

Commander KIRKPATRICK. No, sir.

Mr. PATTEN. How about Hunters Point?

Commander KIRKPATRICK. We have several projects that we have awarded over the last 5 years: abrasive blast facility, electrical precision facility waterfront fire protection, compressed air dehydration system, sheet metal shop, electrical distribution systems improvements, paint bake oven afterburners, electrical distribution system improvements, a second increment of the project I mentioned previously, waterfront utilities, service station, and a boiler fuel conversion.

Those projects were awarded in fiscal years 1969 through 1971 projects.

Mr. PATTEN. Provide for the record the cost of these projects.

[The information follows:]

	<i>Authorized amount (thousands)</i>
Navy Shipyard, Hunters Point:	
Abrasive blast facility-----	\$684
Electrical weapons precision facility-----	3, 885
Waterfront fire protection-----	987
Compressed air dehydration system-----	80
Sheet metal shop-----	2, 983
Electrical distribution system improvements-----	3, 906
Paint bake oven afterburners (2 each)-----	80
Electrical distribution system improvements (2d increment)-----	2, 370
Waterfront utilities service station-----	2, 638
Boiler fuel conversion-----	50
Total -----	17, 663

Mr. PATTEN. What other projects are pending?

Commander KIRKPATRICK. We have some projects that are pending at Hunters Point which I can discuss in just a moment.

The principal projects pending at Hunters Point are pollution abatement. Current plans are for the shipyard to be maintained in a caretaker status. It is felt that these projects should be awarded.

I would like to say, though, we are currently reviewing these with the thought that perhaps we might be able to cut out one or two of them.

Currently we have three projects involved in Hunters Point that we may have to go forward with.

Mr. PATTEN. Keep us informed and let us know before you award these projects.

Commander KIRKPATRICK. Yes, sir; we will.

Mr. PATTEN. For how long has the Navy known that its shipyards were and would continue to be underutilized?

Captain GINN. This has been a situation, Mr. Patten, that has been coming for a number of years as the size of the fleet decreased.

We have been continuously monitoring the rate of utilization of the yards and it finally reached a place where we have, with the 10 shipyards in the complex, we have gotten below our lower efficient operating level. The overhead of keeping the total complex going became excessive.

#### CLOSURE OF BOSTON NAVAL SHIPYARD

Mr. PATTEN. What functions are to be transferred from Boston Naval Shipyard and how will they be accommodated at the gaining locations?

Captain GINN. The computer-aided systems group that supports the entire Navy Ship Systems Command will be moved to Philadelphia and will be accommodated in a building that will probably be available over at the Naval Air Engineering Center.

The electronics work that we were talking about, the underwater sound restoration work, if it goes to Philadelphia it will be moved into a portion of the new electronics weapons precision facility. This will require another increment of that to be built ultimately. That is why I said there could be another increment there. If that function goes to Portsmouth, the predominant amount of it will be housed within the old shipbuilding ways building. Other minor functions will be transferred out of Boston, such as the equipment for making the die-lock aircraft carrier anchor chain, which will go into the forge shop in Philadelphia.

Mr. PATTEN. What will be the total cost of this relocation and construction?

Commander KIRKPATRICK. From Boston, sir?

Mr. PATTEN. Yes.

Commander KIRKPATRICK. From Boston, the total cost will be \$33,054 million, the one-time closure costs to effect the move, plus \$915,000 for military construction to house displaced functions.

Mr. PATTEN. What savings do you anticipate from the closure of Boston?

Commander KIRKPATRICK. The annual savings is \$23.9 million.

Mr. PATTEN. Can you provide some further details on that for the record?

Commander KIRKPATRICK. Yes, sir.

[The information follows:]

The total cost of relocation, \$33,054 million, is comprised of the cost to relocate military personnel and their families, severance pay, relocation pay, lump sum leave and associated civilian personnel costs, transfer of equipment and inventories, and preparation of facilities for caretaker and or disposal.

The \$915,000 for military construction is comprised of the two projects required at the Philadelphia Naval Shipyard and the Portsmouth Naval Shipyard to support the closures at Boston.

The \$23.9 million annual savings is comprised of salary avoidance associated with reduction of personnel and nonpersonnel operational costs.

Mr. PATTEN. Do you anticipate many transfers of personnel from Boston to your other shipyards?

Captain GINN. So far, there has not been a large number of transfers. This is entirely something that is up to the individual. Of course where we transfer a function, the opportunity to move with the function is offered to each of the employees concerned at the losing activity.

At Boston, a large number of the employees in the shipyard are eligible for retirement and will do so.

Mr. PATTEN. Have you surveyed the employees to see who is willing to transfer?

Captain GINN. Yes, sir. Every employee has had an opportunity to indicate what geographic areas he was interested in for job offers.

Mr. PATTEN. Do you have a reaction?

Captain GINN. We have had a very bad reaction.

Mr. PATTEN. Bad reaction depends on whose attitude you are talking about.

Captain GINN. In trying to recruit skilled people for vacancies we have in other shipyards out of Boston, we have not gotten a good reaction so far. Likewise, we did not get a particularly good reaction from the local concerns that came into the shipyard to interview people. It was a very poor response. We really do not have an answer for that yet. I am not certain but maybe people were waiting to see exactly what was going to happen.

Mr. PATTEN. There was an interesting article in one of the magazines that the new type of employee, executive corporation fellow, was freer, he will not take orders to pick the family up and move. There has been a change of attitude.

These big companies are finding they cannot just say "You are going out to Oshkosh." It is a different ball game.

Admiral MARSCHALL. May I go off the record, sir?

[Discussion off the record.]

#### CLOSURE OF HUNTERS POINT NAVAL SHIPYARD

Mr. PATTEN. What functions will you transfer from Hunters Point?

Captain GINN. The principal function that will come out of Hunters Point is the crypto work which we are currently doing, plus the fact that we will have to reassign the restoration work that is being done on the S band radars and antennas at Hunters Point to another shipyard. At the moment, it appears that this will be done in Long Beach in lieu of Hunters Point. The productive ship work will be a split between Mare Island, Puget Sound, Long Beach, and Pearl Harbor. There will be an immediate shift of work essentially to the Long Beach-Mare Island-Pudget Sound shipyards, ultimately with the transfer and the shifting of some homeports around, part of that work will end up in Pearl Harbor.

Mr. PATTEN. Will you provide details for the record on the one-time cost, including construction, and the savings you expect for the record, and also show what personnel transfers you anticipate.

Captain GINN. Yes, sir.

[The information follows:]

*Navy Shipyard Hunters Point*

One-time cost including construction.....	\$22, 035, 000
Annual savings anticipated.....	17, 883, 000
Personnel transfers anticipated.....	4, 061
Military :	
Officer .....	58
Enlisted .....	106
Subtotal .....	164
Civilian :	
Relocated .....	1, 700
Rehire (Government or industry).....	2, 197
Subtotal .....	3, 897

PROJECTED SHIPYARD UTILIZATION

Mr. PATTEN. Can you provide for the record the projected average employment, and the projected utilization, based on maximum, one-shift capacity of each of the Navy's shipyards for fiscal years 1973 through 1978?

[The information follows:]

The projected average employment and projected utilization of each of the naval shipyards for fiscal years 1973 through 1978 is as follows :

Shipyard	Average employment fiscal year 1973 through fiscal year 1978	Projected utilization (percent)
Portsmouth.....	5, 750	71
Philadelphia.....	6, 700	60
Norfolk.....	9, 820	70
Charleston.....	7, 020	71
Long Beach.....	7, 200	68
Mare Island.....	7, 940	71
Puget Sound.....	8, 290	62
Pearl Harbor.....	5, 090	66
Total.....	57, 810	

These utilization figures do not include capacity for new construction.

Mr. PATTEN. The figures provided the committee staff by the Navy indicate that the man-years at naval shipyards are projected to decline from 65,778 in fiscal year 1973 to 58,270 for fiscal years 1975 through 1978. Upon what assumptions are those man-year estimates based?

Captain GINN. The decreasing requirements for regular overhauls as the fleet shrinks and, in the out-years, the low number will be due to the fact that the new ships that will be joining the fleet will not require immediate attention.

Mr. PATTEN. Are you anticipating any new construction of ships in naval shipyards during this period?

Captain GINN. No, sir.

Mr. PATTEN. Do your workload figures include the decommissioning or scrapping of major combatants such as carriers?

Captain GINN. No, sir. We do not do that type of work in naval shipyards.

Mr. PATTEN. What do you do with the battleship *New Jersey*?

Captain GINN. She is in mothballs in the reserve fleet in Puget Sound.

Mr. PATTEN. There is a little movement on in my State to bring it back to New Jersey as a museum or a monument.

Captain GINN. Those are expensive museums; sir.

Mr. PATTEN. Provide for the record the annual level of ship alterations upon which your workload projections are based?

[The information follows:]

Of the 58,270 average man-years projected for fiscal years 1975 through 1978, the annual level of ship alteration work will vary between approximately 30,000 to 35,000 man-years per year at the naval shipyards.

Mr. PATTEN. Looking at your projected utilization of naval shipyards, I see that the projected rate of utilization in fiscal year 1974 ranges from a low of about 44 percent of maximum capacity at some yards to a high of about 78 percent. This compares with an optimum use which would be about 85 percent of your one shift, 5 days a week capacity. Is this correct?

Captain GINN. Well, Mr. Patten, it is correct, depending on what set of figures you are using for the projection. The projections that have been made have all been based on the one-shift operation, using the maximum shift employment that was reached during World War II. This, unfortunately, is not a good base today because at that time we had new construction as well as conversion and overhaul and repair going on in almost all the shipyards.

If you remove from those figures the number of people that would normally be engaged in new construction and deal only with those that are involved in conversions and overhaul and repair workload, you will find the utilization will range somewhere in the 80- to 85-percent range, which meets the DOD requirement for maintenance type facilities operating on a single shift basis.

Mr. PATTEN. In other words, you are not going to buy that low of about 44 percent of capacity at some of your yards?

Captain GINN. No, sir. My figures are different, but I am not going to argue that because it is a matter of the base that we are using.

Mr. PATTEN. That is obvious.

Captain GINN. Yes, sir.

Mr. PATTEN. Your workload does not include any new construction of ships. We just passed the maritime bill the other day for \$200 million-some, one of the largest shipbuilding programs Congress has authorized in my stay here. Last year and this year the will of the Congress has been to build up our maritime.

I am correct on that? You are knowledgeable on that?

Captain GINN. Yes, sir.

Mr. PATTEN. Then we come back to this: You are not going to construct any new ships in your yards.

Captain GINN. I think I should clarify that point, Mr. Patten.

We are not going to construct any new ships in the naval shipyards. We depend entirely and have for a number of years, on procuring our new construction from private industry.

Mr. PATTEN. Then what is our fight all the time with our shipyards? It is over what percentage of the maintenance they get, I guess.

Captain GINN. Yes, sir.

Mr. PATTEN. We hear a lot about their wanting more of this work.

Captain GINN. This is the overhaul and repair work you are speaking of now, which is another matter.

Mr. PATTEN. What is your overall utilization projected for fiscal year 1974 in terms of one-shift, 5-days-a-week capacity, according to your computation and figures?

Captain GINN. It would come out to somewhere in the neighborhood of 80 to 85 percent of the optimum utilization, by eliminating the new construction from the basic figures.

Mr. NICHOLAS. Using the figures which the Navy supplied earlier, based on these utilization figures, your rate comes out to something like 54 percent utilization for all of your shipyards. Does that sound reasonable? When you talk about 80 to 85 percent, are you talking about 85 percent of the total capacity or 85 percent of the optimum capacity? Supply an answer for the record.

[The information follows:]

The 80 to 75 percent used in the above discussion represents the percent utilization of the optimum capacity of the total shipyard complex. Comparable figures for percentage of maximum utilization of capacity would be 68 to 72 percent. These figures have also been adjusted from the single shift World War II peak manning by the removal of those personnel involved strictly in new construction.

Mr. PATTEN. Is it inefficient to run your shipyards at this low level? You are saying it is close to 85, if you make a fair and reasonable comparison.

Captain GINN. At 54 percent utilization it is inefficient to operate a shipyard, but at 80 to 85 percent it is very good.

Mr. PATTEN. Can you provide for the record your figures on overall shipyard utilization for the past 5 years and projected for the next 5 years on a comparable basis?

[The information follows:]

To provide a comparable basis for measuring utilization, both facilities and manpower associated with new construction have been disregarded. Shipyard utilization for the past 5 years based on the optimum capacity for conversion, alteration, and repair, varied from 81 percent in fiscal year 1969 to 73 percent in fiscal year 1973, and averaged 78 percent for the 10 naval shipyard complex. In the next 5 years, it is estimated that utilization will be approximately 80 percent of the optimum capacity for conversion, alteration, and repair workload for the eight naval shipyard complex.

#### SUPPORT OF NEW SHIPS

Mr. PATTEN. How do you expect that new ships being brought into the fleet will affect the type of shipyard facilities that will be needed through the 1980's?

Captain GINN. We have projected those requirements into the projects that we bring before you on this committee. The new submarines, the sea control ships, the PF's, the support of the gas turbine propulsion system, all of the support for these types have been taken into consideration. Under the logistic support plan for each and every new acquisition, part of that plan is the industrial support plan. I have members of my staff that work with the acquisition managers to critically review the support requirements so that at the time those ships appear in the naval shipyards for support, we will have in place the necessary facilities and equipment to do the jobs that will be required.

Mr. PATTEN. You know, you effervesced 3 or 4 years ago about this modernization program and you have gotten some money since then. Are you still enthused about it as you were when you first projected it?

Captain GINN. Well, I have to answer that one, Mr. Patten, by saying the effervescence has subsided a degree because the amount of money did not come in the same degree that the effervescence was at that time. But I can truthfully say this: Without this money that this committee has supported us with, we would be hard pressed today to be able to properly dock and service the new modern deep-draft ships. As you know, the requirements of these new ships for Cold Iron support are much greater than they were for the World War II ships. That, of course, is what the facilities in the yard were designed for—the old ships of World War II. We have been constantly using the money we received, though it did not come at the rate we would like to have had it, to equip the shipyards to handle the modern ships.

Mr. PATTEN. Where do you plan to overhaul the ship turbine engines?

Captain GINN. Are you speaking of the gas turbines?

Mr. PATTEN. Yes.

Captain GINN. As the population increases in gas turbines, we will use one of the naval air rework facilities. The one that we are considering now is North Island. Up until we get enough turbines to give them a reasonable workload, we expect to utilize the services of the manufacturer for gas turbine overhaul.

#### LIQUEFIED NATURAL GAS TRANSPORTATION AND STORAGE

Mr. PATTEN. Is liquefied gas something we have to take a look at, in the United States and around the world as answering some of our fuel problems?

Admiral MARSCHALL. I certainly think it is. It is part of the national problem. Without the supply of natural gas coming in through transmission lines, there has to be some other way of obtaining it. This is the answer.

Mr. PATTEN. Navy uses so much power, I imagine you fellows have to be up on that.

Admiral MARSCHALL. Yes, sir. We are very, very much involved in it. As a matter of fact, in my organization I have established a fuel task force, an energy task force if you will, just to look into items like this, because we are feeling the crunch all through the Navy.

Mr. PATTEN. I will tell you, it is hot around our way, because they have actually built for it—you know 14 fellows were killed 6 miles from my house. They are big tanks and they are going to build bigger ones, too.

Admiral MARSCHALL. That is right.

Mr. PATTEN. They are going to bring the boats up the bay.

Mr. LONG. Do you mean Staten Island Sound?

Mr. PATTEN. Yes. They have to keep them at minus 235°. We do not know what is going to happen. I have written all the departments and I cannot find anyone who has the experience to tell us, if a thousand ships come in, what will be the rate of accidents or what will happen?

Interior had very little to offer. The Bureau of Mines was of little or no help. It seems to me, that if they have the knowledge of what the experience will be, they are keeping it to themselves.

Of course the industry gives us little or no information.

I have asked a million questions about, if 100 ships come in, suppose they hit something and they lose their temperature, will gas be floating all around the town? And all kinds of questions. I have not been able to document anything from anyone reliable and with experience.

Mr. LONG. Off the record.

[Discussion off the record.]

#### EFFECT OF TRIDENT ON NAVAL SHIPYARDS

Mr. PATTEN. What will be the effect of replacement of the Polaris submarines with Trident submarines on the utilization of drydocks and other types of facilities at naval shipyards?

Mr. NICHOLAS. Can we go off the record?

[Discussion off the record.]

Admiral MARSCHALL. We are going to be replacing them eventually.

What you are talking about now is a larger boat than the one you previously had; therefore, it is going to require a larger drydock than presently required for Poseidon/Polaris submarines during the refit period.

We have discussed in the Trident portion of the hearing the necessity for a dedicated drydock for Trident during refit periods. But when these ships go into their regular overhauls, they will go into naval shipyards and they will require the larger facilities which are available in these shipyards.

As you may remember from the Friday discussions which were classified, the SALT discussion will have a bearing on what we will have in the way of submarines at the time that the Trident comes on the line. Whether we will have to replace one for one or two for one is something we do not know yet.

Mr. NICHOLAS. Assuming that you do replace on the basis of the current SALT Interim Agreement, the question was: What would be the effect on utilization of the shipyards?

Captain GINN. Well, as far as we can see, when the Trident comes into a naval shipyard for overhaul in the late 1980's it will represent substantially the same total shipyard utilization. I would like to enlarge upon this question for the record.

[The information follows:]

First a review of the planned Trident maintenance cycle. The Trident submarine increased availability requirements are to be met through shortened upkeep periods ——— for Polaris/Poseidon, coupled with an extended operating period between major shipyard overhaul availabilities (9 years versus 6 years compared to that of present Polaris submarines). The use of a dedicated docking facility at the Trident support base and the establishment of a rotatable submarine system component pool are essential elements in meeting these availability requirements. Components from the rotatable pool are planned to effect submarine repairs with the removed components to be refurbished by shipyards as necessary. The workload imposed on the shipyards by pool component refurbishment plus regular submarine overhaul routines during the 10th year represent substantially the same utilization of naval shipyard repair facilities. Shipyard drydock utilization by Trident is expected to decrease from that of Polaris as a result of the extended period between overhauls. However, overall shipyard drydock utilization for the Navy's deep draft ships is expected

to increase at yards such as Puget Sound, as a result of the recently announced closure of two naval shipyards and the increase in the number of deep draft ships in the U.S. Navy.

Mr. NICHOLAS. It will be overhauled less frequently.

Captain GINN. It will be overhauled less frequently, that is correct, 9 years between overhauls.

Mr. NICHOLAS. Would that reduce the overall workload?

Captain GINN. It should not, because if you remember from the Trident discussion they talk about replacement of rotatables, equipment that will be overhauled in a naval shipyard and brought to the dedicated sites for replacement.

#### NUCLEAR DRYDOCK UTILIZATION

Mr. NICHOLAS. Will it reduce the drydock utilization?

Captain GINN. As far as we can determine now, the Trident boat will probably not be in dock any longer at a time than a Polaris is now and will be drydocked less frequently in the naval shipyard because of the expanded overhaul cycle. However, drydock utilization will be affected by the two shipyard closures.

Mr. PATTEN. An analysis of your planned utilization of nuclear capable drydocks provided the committee staff, indicates that utilization of these facilities will average about 60 percent on the east coast, and about 50 percent on the west coast. Can you verify this for the record?

[The information follows:]

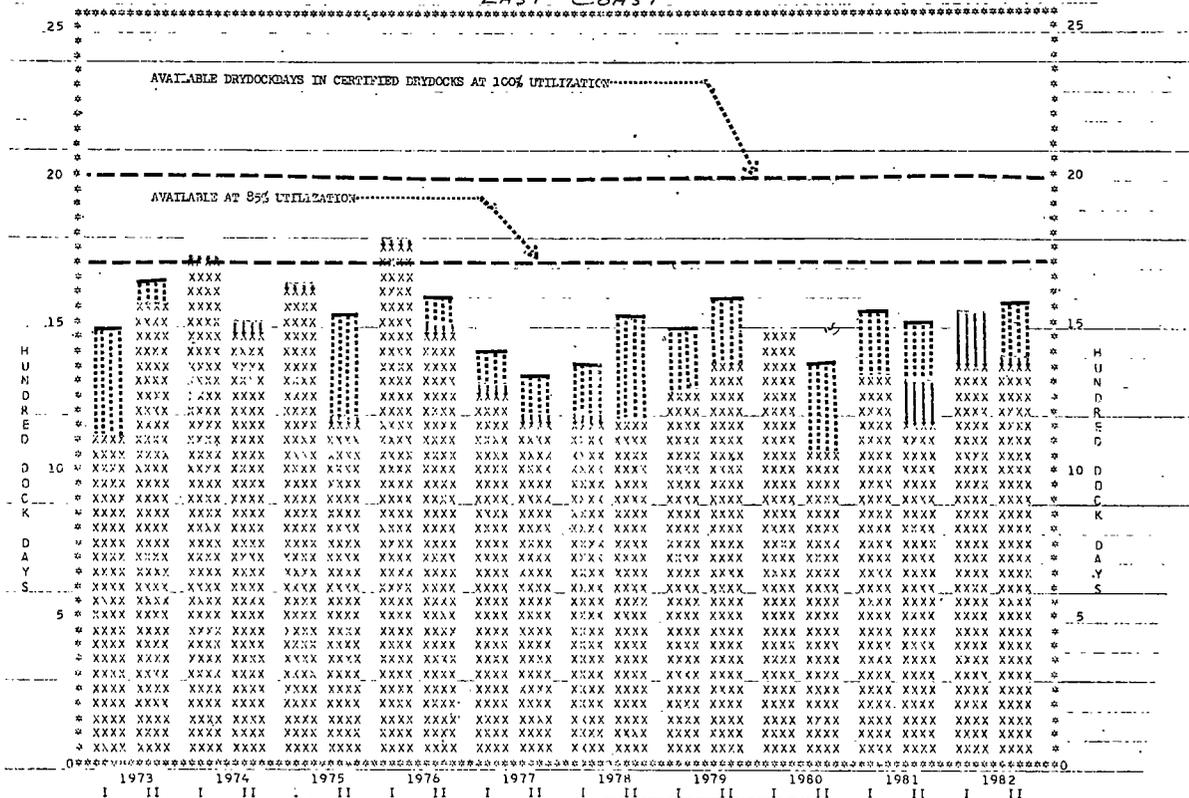
The two charts provided the committee in late May 1973 on utilization of drydocks normally used for nuclear ships have been updated and revised and are correct insofar as we can predict utilization 10 years into the future. The revised charts dated June 20, 1973, have been provided. These charts show total expected utilization of these docks as well as that portion for nuclear ships alone. An 85-percent utilization line is shown on these charts since this percentage utilization factor is considered the maximum practical over a period of years because of requirements for maintenance work on the docks themselves and the time for preparation of the docks for each ship docking. Preparations include such work as removing the drydock blocks for the previous ship, sand cleanup, and setting the blocks for the next ship. The charts include an allowance for unscheduled and emergency dockings based on past experience.

Another factor affecting available capacity of drydocks is that the utilization varies from yard to yard. Some yards close to home port/operating areas of large concentrations of ships experience heavier utilization. By the same token, other yards somewhat removed from large concentrations of operating ships are operating further below the 85-percent capacity line.

[The charts follow:]

UTILIZATION OF DRYDOCKS USED FOR NUCLEAR SHIPS

EAST COAST



OFFICIAL USE

X = SSN/SSRN

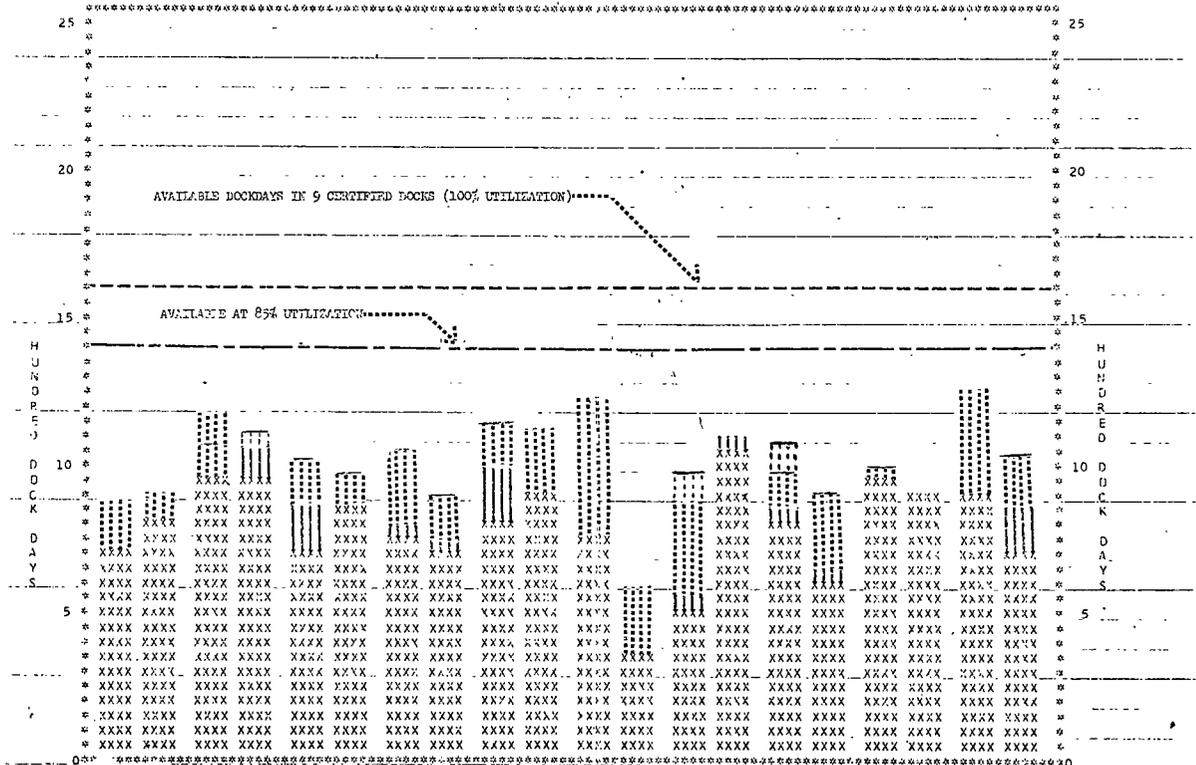
T-T-T = SHIPWRECK NUCLEAR ☐ = NON NUCLEAR

20 JUN 1973

NAVSHIPS CODE 0717

UTILIZATION OF DRYDOCKS USED FOR NUCLEAR SHIPS

WEST COAST



OFFICIAL USE

101 = SURFACE NUCLEAR

NAVSHIPS CODE 0717

NON NUCLEAR X = SSN/SSBN

20 JUN 1973

## PERCENTAGE OF SHIPYARD WORKLOAD IN HOUSE

Mr. PATTEN. What percentage of your nuclear work, other than new construction, do you plan to do in-house and out of house over the next 5 years?

Captain GINN. I will provide that for the record.  
[The information follows:]

It is anticipated that approximately 65 percent of the shipyard nuclear work will be performed in the naval shipyards, and approximately 35 percent in the private shipyards over the next 5 years.

Mr. PATTEN. What about the long-range projection?

Captain GINN. We will provide that, too.  
[The information follows:]

The ratio of approximately 65 percent of shipyard nuclear work performed in naval shipyards and approximately 35 percent performed in private yards is expected to continue in the long-range projection.

Mr. PATTEN. If you follow the plan shown here, will you be utilizing the nuclear repair capabilities of naval shipyards and private industry in the most efficient manner?

Admiral MARSCHALL. We believe it will be.

Mr. PATTEN. If you were to close one nuclear-capable shipyard, would your utilization of trained personnel become more efficient at the remaining naval and private yards?

Captain GINN. Not necessarily. There is a limit to what you can do in the way of having nuclear starts in a given year with the configuration of your plant. We very carefully looked at this question at the time of the base realignment, the requirement for all nuclear capability that we had.

We must constantly keep in mind one of the primary concerns in any nuclear yard other than the fact that we have a license there is the fact that we have a tremendous investment in the trained personnel that we have. This is one of the big costs. It is not just a facility situation. It is a matter of training. It is a matter of keeping people and keeping them trained. You cannot take a nuclear shipyard and have it do nuclear work some time and for long periods of time not to do any nuclear work.

Mr. PATTEN. Can you put a price tag on a nuclear repairman? Is he worth \$20,000 to you? You don't put that in your computer?

Captain GINN. No, sir. I am sure that we don't put that human factor in our computers.

Mr. PATTEN. We have industries which tell us the ordinary laborers they train in a 6-month period are a \$20,000 asset. In other words, if they see him walk off the job or transfer they lose \$20,000. We put a price on a doctor at \$400,000 in our State department of labor. They said an M.D. in our State is a \$400,000 asset.

If you can equate these in terms of dollars, you can support the need for an item. This is a factor to be considered when you are talking about efficiency, whether you are utilizing 60 percent or whatever. I have seen organizations dip into all their surplus, over a year's period, to keep their organization together. That is how much they regard their top people and their construction leaders, they pay them for a whole year and don't make a dime on them.

Admiral MARSCHALL. I have heard it expressed that it would take about 4 years to build up a nuclear capability in a shipyard.

Is that correct?

Captain GINN. Yes, sir; a minimum of 4 years.

Admiral MARSCHALL. Four years investment in time plus the amount of money necessary to train these people in their work is a very healthy dollar figure which I would hate to estimate at the moment.

Mr. PATTEN. We hear a fighter pilot is a \$500,000 asset. I heard that from the military people. It costs us about \$500,000 to train them? I don't remember the exact figure.

#### PORTSMOUTH NAVAL SHIPYARD CLOSURE STUDIES

What factors led the Navy to decide against the closure of Portsmouth Naval Shipyard at this time?

Captain GINN. As far as this time is concerned, we have to go back and look at the Portsmouth situation. It was on the closure list for 7 years. No major capital investment has been made in that shipyard during that period. When the President, in 1971, removed Portsmouth from the 1964 closure list, he had to take into consideration the projected buildup that was going to occur in the maritime fleet and the requirements for new construction capacity that would be required. The decision that he made in 1971 was that the Navy could ill afford to give up a nuclear capable shipyard along with its trained people.

When we looked at this from a standpoint of the long-range projected workload and the fact that we now get all of our new construction from shipyards that are going to be or are already deeply involved in the maritime program. The problem is further complicated since three of the principal producers of maritime ships also do overhaul and repair work on submarines.

The fact is that we were not looking at it purely from a standpoint of in place facilities and equipment but rather from the reservoir of trained mechanics to do this type of work and that reservoir is running rather low. You probably will have noticed in many of the newspapers lately the ads for the private shipyards.

#### SHIPWORK BY CONSTRUCTION AND IN-HOUSE

Mr. PATTEN. What is the proposed division of shipwork, other than new construction and conversion, between naval and private yards for nonnuclear work?

Captain GINN. I will have to supply that for the record. I came with a different figure. I have the breakout of fiscal year 1973's overhaul and repair work with nuclear. It turned out about 33 percent of the total overall and repair work went to the private sector. It appears next year it will be the same. You asked for a different percentage and I will furnish it.

[The information follows:]

The proposed division of shipwork other than new construction and conversion between naval and private yards for nonnuclear work will average approximately 25-percent private and 75-percent naval over the next 5 years.

Mr. PATTEN. What do you mean by nonnuclear?

Captain GINN. Yes, sir. When you asked about non—

Mr. PATTEN. Do you have a choice on the nuclear?

Captain GINN. Yes, sir. We go both ways. We do in-house in the three yards that do new construction, three private shipyards do overhaul and repair. General Dynamics, Groton, Newport News, and Litton on the East Bank.

Mr. PATTEN. Can you provide both the overall percentages and the percentages of this nonnuclear work done in house and out of house for the past 5 years and projected for the next 5 years?

Captain GINN. Yes, sir.

[The information follows:]

The division of the total overhaul and repair workload between the naval and private shipyards was 70-percent naval and 30-percent private for the past 5 years. The estimated split projected for the next 5 years is 68-percent naval and 32-percent private.

The division of the nonnuclear overhaul and repair workload was 78-percent naval and 22-percent private for the past 5 years. The estimated split projected for the next 5 years is 75-percent naval and 25-percent private.

Mr. McKAY. Would you yield?

Isn't there an agreement on the percentage of work that shall be provided to private and naval yards?

Mr. PATTEN. As a matter of law?

Mr. McKAY. Or regulation.

Captain GINN. It is an agreement, Mr. McKAY, that we will get in the 30-percent bracket for private shipyards. It is a 30-70 percent split.

Mr. McKAY. That is regulated by agreement rather than by law?

Captain GINN. It is not by law, sir. I think it is the consensus of Congress. It is a DOD regulation that we end up following.

Mr. McKAY. You work out the percentage?

Captain GINN. That is right. It has historically been in the last few years approximately over 30 percent.

Mr. McKAY. You have had some problems. In fact you feel you need a certain percentage of capability, so in times of emergency you still have a capability to move?

Captain GINN. Yes, sir. The fact that we have now spent the majority of our resources in the naval shipyards on overhaul and repair is indicative of what we consider this capability to mean to the Navy. If an emergency comes, this service must not be denied the fleet. It must have overhaul and repair capability and it must be available in a form where the Government's control is absolute. That is why we utilize the limited personnel we have in the shipyards and our limited dollars for capital improvements for overhaul and repair and produce all new construction from private shipyards.

Mr. PATTEN. The next question takes in the whole workload, including nuclear ships and the new construction. Take all three into account: Non-nuclear repairs, nuclear and new construction.

How does the percentage done in house compare to that done by private yards?

Captain GINN. That one I can answer right now. New construction, 100 percent in the private yards. Overhaul and repair, 34 percent. Sixty-six percent naval shipyards.

Mr. PATTEN. Well put it all together for the record.

[The information follows:]

The total naval ship workload, including nuclear ships and new construction, is anticipated to be assigned for the next 5 years as follows :

[In percent]

	Naval	Private
New construction.....	0	100
Conversion, overhaul, and repair.....	68	32
Total.....	38	62

Mr. McKAY. On new construction, do they turn it over to you after a shakedown or do you shake it down and take it back to them for touchup?

Captain GINN. We accept the ship after builder sea trials. It goes into an operational period and then goes into a post-shakedown availability at some naval shipyard.

Mr. McKAY. After that first seaworthiness test by the builder it is on your hands?

Captain GINN. Yes, sir. We do have a warranty, though.

Mr. McKAY. How long is that warranty?

Captain GINN. For some reason I think it is 1 year. I would have to verify that.

[The information follows:]

New construction ships procured under cost-type contracts carry no warranty. Those procured under fixed-price contracts carry a 6-month warranty.

Mr. PATTEN. Are there any questions on this modernization program?

Mr. DAVIS. Thank you, Mr. Chairman.

#### UTILIZATION OF NAVAL SHIPYARDS BY TRIDENT

It seemed to me that in the briefing we had that the time at sea was considerably more favorable for the Trident than for the Posiedon.

Admiral MARSCHALL. That is correct.

Mr. DAVIS. Was a statement made here this morning, in response to the Chairman's question about the shipyard facilities that would be utilized by Trident, that the utilization would be at least as great for Trident as for Posiedon?

Admiral MARSCHALL. Yes, sir, I think what we are talking about is the length of time in the drydock. It would probably be about the same or less for each docking. The frequency of docking in naval shipyards would be less, 9 years for Trident versus about 6 for Polaris.

#### COMPARISON OF NAVAL AND PRIVATE SHIPYARD COSTS

Mr. DAVIS. Haven't there been some studies recently carried out in-house by the Navy that indicate we get more per dollar for overhaul and repair, conversion of our nonnuclear ships in private yards than we do in the Navy yards?

Admiral MARSCHALL. I would defer to Captain Ginn on this.

Captain GINN. Yes, sir. Your recollection is correct. We had such a study made and we made it for the reason that we were interested in knowing what the cost situation was. When you sit down and try to

compare one completed job with another, it gets very difficult when making the comparison between a private shipyard and a naval shipyard. The best comparability we could get was at the job level and not a complete overhaul. This comparable nonnuclear surface ship work represented only 9.5 percent of the total work of this type completed during fiscal year 1966 through fiscal year 1971. The comparable work appeared to be cheaper in private industry than it was in the naval shipyards.

Of course, there are many reasons for the cost difference and I will only mention a few: the civil service regulations that we operate under; the system by which salaries are fixed; and the volume of business. On the positive side, we have to take into consideration the advantages that accrue to the ship and to the fleet by having the things that are available to them in the naval shipyard that are not available to them in private industry, such as barracks, messes, recreational facilities, et cetera. When you price this whole business out, it is still to the Navy's advantage to have assured in-house capability to provide this overhaul work which is so necessary to the fleet in time of emergency. I must add on the basis of this study the Naval Ship Systems Command has made an all-out frontal attack on the cost of work. We have instituted quite a program to improve the productivity of the individual employee as well as the overall organizational efficiency of the activity itself. This is one of the reasons we have pushed our naval shipyard modernization program so vigorously.

Mr. DAVIS. I think there is another side to the coin when you speak of getting into an emergency. If we don't have these private shipyard facilities available to us in a time of emergency, we will be in pretty bad shape, won't we?

Captain GINN. Yes, sir. They are part of our national industrial asset. There is no question about that. That is one of the reasons we have consistently shared what we have in the way of new construction and overhaul and repair with the private yards. We went to 100-percent procurement of new ships in the private shipyards because we thought it was in the best interests of the Navy to do so. We do not find any difficulty whatsoever with the 30-percent agreement that we reached because we have that many ships that we can adequately put into private industry.

Mr. DAVIS. Apparently this is something that occurred during the past year? Is there a statement of policy on this?

Captain GINN. Yes, sir. It dates back to, as I remember, 1965, when the 35-65 rule, which was the voice of Congress on a law, was wiped out. Then I think OSD discussed this with Congress and drew up a regulation on a 30-70 split. We have abided by that since.

Mr. PATTEN. We were in the middle of that fight in 1963 and 1964. There was great pressure on us by the unions out of Brooklyn and out of the shipyards around the Metropolitan New York area and in Philadelphia.

I have not felt it so much the last few years but some of those years that you mentioned industries used to come down here and say, "You take a rowboat out of our area and send it down to Norfolk to be repaired." They are still complaining somewhat.

Captain GINN. Another factor we have to consider in this is the

Navy's home port consideration. This to a marked degree goes to determine where a ship will be overhauled.

Mr. DAVIS. That is all.

Mr. LONG. Mr. Chairman.

I am a little puzzled about this business of private shipyards. Why shouldn't as much work as possible be done in private yards? It is a little cheaper?

Captain GINN. As far as we are concerned, Dr. Long, the work basically and fundamentally, according to the study we had done by Booz, Allen Research showed that on the type of work compared there was a differential between the Navy and private shipyards.

Mr. LONG. How much? In which direction? Private shipyards are cheaper and how much?

Captain GINN. Yes, sir. I would be perfectly frank to say I would have to furnish that for the record. I don't have it with me.

[The information follows:]

The recent study of the relative costs of ship construction, conversion, alteration and repair in naval and private shipyards, completed in June 1972, indicates that the cost of repairs and alterations for surface ships, during the period of fiscal years 1966 through 1971, was approximately 16 percent higher in the naval shipyards. Comparisons were also made for nuclear submarine overhauls for which detailed data were lacking and comparability was only approximate. However, the overall result indicated that the approximate cost to the Department of Defense was 14 percent higher in the naval shipyards.

Mr. LONG. That would be interesting to know.

When I was in the Navy in World War II, I spent a lot of time in shipyards, and was appalled by the double hierarchy. Every naval officer had a civilian counterpart, everything was duplicated. It seemed to me to be appallingly inefficient.

I have to admit I saw things in private yards that were also a waste of time.

Captain GINN. There is a whole new situation. The naval shipyards were completely and totally reorganized after World War II.

Mr. LONG. I hope so.

Captain GINN. I don't find that situation existing today. The average naval shipyard will probably have no more than 70 to 80 officers in the whole yard and some 5,000 to 8,000 civilian personnel.

Mr. LONG. Run mostly by civilians?

Captain GINN. Yes, sir; except for certain key jobs.

#### SECURITY

Mr. LONG. On this matter of security, why is security any better in the Navy yard than a private yard?

Why can't you have just as good security in a private yard?

Captain GINN. We have more stable employment and get clearance for the individual.

Mr. LONG. You cannot do that with the private yard?

Captain GINN. As far as I know, they hire as they have workload requirements and reduce as the workload falls off.

Mr. PATTEN. Except in time of war you can make it equal? I think during the war you stepped in when private shipyards had to be cleared. I know a lot of men around our way came running around for us to straighten them out, especially for a Hungarian or German

or enemy aliens. We had a lot of trouble with that. The Coast Guard people came in and I know they had strict clearance even if for dry-docks. They were cleared. You had control under the war powers?

Captain GINN. I am sure such arrangements could be made again.

Mr. LONG. Defense concerns which are manufacturing defense systems are handled under security?

Captain GINN. The yards that are doing nuclear submarine work have security problems, obviously.

Mr. LONG. It seems to me that you run into security problems either way.

Admiral MARSCHALL. It is of a hit-and-miss nature, that precludes counting on the security clearances in private yards as opposed to Navy yards. You have a constant work force which is cleared in the Navy yards. If you bid the work in private yards you then have to get people in for the surges. I think as a practical matter it is not something that I personally would want to hang my hat on.

Captain GINN. We also have to consider the fact that many of the pieces of equipment that come off the ship go into a classified portion of the shop which we have because we continually do this kind of work. One of the things that we do have is we have perimeter security. Unless you have a reason to be in there you don't get in. In all the shipyards where we carry on classified work we have a production security zone also. There are two security checks that you have to go through. The most important situation is that we don't have a foreign flag berthed right next to one of our ships. When we are in a test situation with classified gear a foreign flag, with a proper set of monitoring instruments, can learn a heck of a lot about what is going on. We have that situation under control in the naval shipyard. It is the environment that we operate in that we are talking about basically.

Mr. LONG. The environment, I recall, was one of vast confusion.

#### ADDITIONAL CRANE RAIL SYSTEM, PORTSMOUTH NAVAL SHIPYARD

Mr. PATTEN. If there are no further questions, we will turn to the "Additional crane rail system, Portsmouth Naval Shipyard."

You are requesting an additional crane rail system at Portsmouth in the amount of \$2,817,000. What is the need for this item at this time?

Captain GINN. The Portsmouth Naval Shipyard was built to be a new construction submarine shipyard and historically has been this until we stopped building ships in-house and it became an overhaul and repair activity like the other naval shipyards. Submarines are pretty well complete when they are launched. The heavyweight handling that is required is done either in the building basin or the building ways where the boats are constructed. In Portsmouth for instance, the cranes in the building ways lift sections and components up to 100 tons.

Consequently, when new construction is alongside the piers, relatively light lifts are all that is necessary and that is why they have 25-ton cranes. Since we were dealing with submarines, the crane is extremely low to the ground since they don't have to reach over a lot of top hamper. When we put Portsmouth into the overhaul and repair business, the heavy cranes that were available in the building area

are no longer usable for overhaul and repair. The lifts that are necessary to be made on submarines undergoing overhaul exceed the 25-ton capacity of the waterfront cranes. We have had to handle these heavy lifts by moving a floating crane around. Making lifts on a submarine that is in the water with a floating crane that is also in the water gives you 2° of motion that you have to overcome on all lifts. The shipyard is going to remain in the overhaul and repair business and needs heavy waterfront lift capability, since we have, at Boston, cranes that will be excess to our needs. By utilizing these cranes in Portsmouth we can get the weight handling that we need very easily, very quickly, and very cheaply. The modernization study that we had made of Portsmouth required us ultimately to buy cranes. The fact that they are available to us now allows us to move quickly, and this is a No. 1 priority item as far as the shipyard commander is concerned.

Mr. PATTEN. Will you barge them up to Portsmouth out of Boston?  
 Captain GINN. They will be, I am sure.

Mr. PATTEN. That will be quite a trick. What do you mean by floating cranes?

Captain GINN. The floating cranes we use are barge mounted.

Mr. PATTEN. Provide for the record an economic analysis of this project. Show who prepared it.

Captain GINN. There is no economic analysis for this project, Mr. Patten. This is a mandatory item that is required to meet the workload commitments, and we do not have an economic analysis.

Mr. NICHOLAS. You are doing this workload now at Portsmouth, you are not increasing the number of submarines done there?

Captain GINN. That is right.

Mr. NICHOLAS. Presumably the impetus behind this is to be more efficient.

Captain GINN. We only produce economic analyses for those projects that are justified on economy only. There are savings, yes, but there is no formal economic analysis for the project. There is a cost avoidance also that you can consider.

Mr. PATTEN. You are saying it is mandatory, and so you didn't need an economic justification?

Captain GINN. Right. We don't produce economic analyses for every project.

Mr. NICHOLAS. If it is urgent, why wasn't it done 10 years ago?

Captain GINN. Ten years ago we could not spend any money on Portsmouth since it was on the closure list. It came off the closure list in 1971 and CNO directed we make a study of Portsmouth, which we did. This is one of the items.

Mr. NICHOLAS. This item is to be included as a late starter in fiscal year 1974?

Admiral MARSCHALL. It is not officially recommended to the committee yet.

Mr. NICHOLAS. It has not reached the committee yet. It can't be too urgent. They must be able to do the job using the system they have now, otherwise you could have programed it years ago?

Captain GINN. The weight-handling problem in Portsmouth is a matter of having to make work wait until a lift is available. Right now out of every 10 lifts needed to be made, a crane is available only six times. There are three cranes, three 25-ton cranes servicing the en-

tire drydock 1, drydock 3 and berths 12 and 13 areas. As a result of this, we need the increased capacity and capability.

Mr. PATTEN. Let us continue on that. We don't have answers. Maybe we can work that up for the record. What is the benefit-cost ratio for this project?

Captain GINN. We don't have one. We did not make an economic analysis of this project.

Mr. PATTEN. What is the status of the design for this project?

Commander KIRKPATRICK. We plan to authorize design on June 15. That is provided the project clears OMB this week as expected. We would be prepared to start the design the 1st of July.

Mr. NICHOLAS. When will design be complete?

Commander KIRKPATRICK. In January 1974. We would advertise at that same time.

Mr. PATTEN. When was the need for this project identified?

Captain GINN. We identified this as a hard-core requirement in the report that we made to CNO in April of last year.

Mr. PATTEN. What is the priority in comparison with other items in the fiscal year 1974 request?

Admiral MARSCHALL. It will be in the priority 1 category, inasmuch as this is an operational requirement.

Mr. NICHOLAS. It was not included in the fiscal year 1974 program originally, yet you are saying it rates higher than projects which were included?

Admiral MARSCHALL. Mr. Nicholas, the base realignment program, coming when it did, gave a greater impetus to this thing because we can now use the cranes in the Boston shipyard which won't be used.

Mr. NICHOLAS. You have known for some time which shipyards you would close and that these assets would be available?

Admiral MARSCHALL. As a matter of fact, we didn't know for some time. I couldn't have told you the day before the announcement was made what activities were going to remain open and which were going to be closed. It was a very close-held type thing and very much down the wire which way we would go. There were so many considerations to be taken into account.

Mr. PATTEN. Is the requirement a result of the base realignment package?

Admiral MARSCHALL. No, sir, it is not a result of it. The timeliness of it probably is generated 90 percent by the fact that these cranes now are available from Boston.

Mr. PATTEN. When are the portal cranes scheduled to be transferred from Boston?

Admiral MARSCHALL. Again, I think we have our design and construction work to be done in the meantime. It would be compatible with the timing of the availability of the tracks.

Mr. PATTEN. What is the estimated construction time for this project?

Admiral MARSCHALL. We anticipate it would be completed by March of 1975.

Mr. PATTEN. Can we pin that down? When do you think that the portal cranes will be transferred out of Boston? You are not going

to have your design finished until January. Could you wait until the 1975 budget?

Admiral MARSCHALL. Moving the cranes themselves is not a critical item in this thing. We would hope to get them as soon as we could use them.

Mr. PATTEN. Would you move them in a Northeast storm?

Admiral MARSCHALL. No, sir.

Mr. PATTEN. Wouldn't this be quite a task to move these cranes?

Admiral MARSCHALL. Not insurmountable.

Captain GINN. We moved 12 of them out of New York when we closed that shipyard. We sent them all over the world. We have them operating in Guam now.

Mr. PATTEN. You have to have 900 people this year in Boston. When will the cranes be available to be moved out of Boston?

Captain GINN. December 31 this year. In fact, the odds are that we can get them ahead of that date. That is the end of productive work.

Admiral MARSCHALL. That does not really figure into the critical timing of this thing at all. The timing would be to fix the facilities up in order to receive the cranes.

Mr. PATTEN. What is your estimated construction time for this project?

Admiral MARSCHALL. About 12 months, sir.

Mr. PATTEN. With all of this, can't we get an economic analysis? You use the word mandatory. You didn't make an economic study.

Admiral MARSCHALL. We can certainly make an attempt to look into this and give you the figures. We shall provide for the record some information.

Captain GINN. We will give you one.

Mr. PATTEN. How much would it cost to make this economic analysis?

Admiral MARSCHALL. Mr. Patten, we can do it in house. It won't require additional funds, and we will try to provide for the record some economic justification for this project.

[The information follows:]

The Economic Analysis of Investment is detailed in the following Format A-1. It can be seen that a Savings/Investment Ratio of 1.38 will result in a payback period of 11 years.

## ECONOMIC ANALYSIS DEPARTMENT OF THE NAVY INVESTMENTS

## SUMMARY OF PROJECT COSTS

## FORMAT A-1

1. Submitting Department of the Navy Component: Portsmouth Naval Shipyard  
Portsmouth, New Hampshire
2. Date of Submission: 14 June 1973
3. Project Title: Additional Crane Rail System, MCON Project P-156
4. Description of Project Objectives: This project will alleviate the current deficiencies in portal crane service to Drydocks 1 and 3 and Berths 11 and 13 by increasing the number of portal cranes serving the area from three (3) to five (5) and thereby permit the shipyard to reduce the cost and length of time required to accomplish the overhaul of modern submarines.
- 5a. Present Alternative: Continue to operate existing system.      6a. Economic Life: 25 years.
- b. Proposed Alternative: P-156      b. Economic Life: 25 years.

7. Project Year	8. Recurring		9. Differential Cost	10. Discount Factor	11. Discounted Differential Cost
	(Operations) Costs				
	a. Present Alternative	b. Proposed Alternative			
1.			(310,000)		0
2.			(322,400)		0
3.			335,296	0.788	264,213
4.			348,708	0.717	250,024
5.			362,656	0.652	236,452
6.			377,162	0.592	223,280

7/ Project Year	8. Recurring (Operations) Costs		9. Differential Cost	10. Discount Factor	11. Discounted Differential Cost
	a. Present Alternative	b. Proposed Alternative			
7.			392,249	0.538	211,030
8.			407,939	0.489	199,482
9.			424,256	0.445	188,794
10.			441,227	0.405	178,697
11.			458,876	0.368	168,866
12.			477,231	0.334	159,395
13.			496,320	0.304	150,881
14.			516,173	0.276	142,464
15.			536,820	0.251	134,742
16.			558,293	0.228	127,291
17.			580,624	0.208	120,770
18.			603,849	0.189	114,127
19.			628,003	0.172	108,017
20.			653,123	0.156	101,887
21.			679,248	0.142	96,453
22.			706,418	0.129	91,128
23.			734,675	0.117	85,757
24.			764,062	0.107	81,755
25.			794,624	0.097	77,074
26.			826,409	0.088	72,724
27.			859,466	0.079	67,898
12. Totals			13,963,707		3,653,406
13. Present Value of New Investment:					\$2,540,000
14. Total Present Value of New Investment					\$2,540,000
15. Less: Present value of existing assets replaced					0
16. Plus: Value (salvage value of cranes on open market)					
of existing assets to be employed on the project					\$ 100,000
17. Net Investment					\$2,640,000

ECONOMIC ANALYSIS DEPARTMENT OF THE NAVY INVESTMENTS  
SUMMARY OF PROJECT COSTS  
FORMAT A-1

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18. Present Value of Cost Savings from Operations	\$3,653,400
19. Plus: Present Value of the Cost of Refurbishment or Modification Eliminated	0
20. Total Present Value of Cost Savings	\$3,653,400
21. Savings/Investment Ratio	1.38
22. Source/Derivation of Cost Estimates:	
a. Investment Costs:	
(1) Trackage	\$1,505,000
(2) Crossover	210,000
(3) Relocate Utilities	100,000
(4) Relocate and Install 2 Cranes	650,000
(5) Turnout (Item 20c)	<u>75,000</u>
	\$2,540,000

The following project line item is a necessary maintenance and repair item under both alternatives and, therefore, excluded.

(6) Replace existing common rail (Item 21c)	<u>277,000</u>
Total	\$2,817,000

- b. The industrial area of the Portsmouth Naval Shipyard that would be served by this project includes Dry Docks #1 and #3 and four (4) repair berths (#11A, 11B, 11C and 13C). The workload in this industrial area normally contains one SSBN and at least one SSN under regular overhaul plus one or two submarines who are in the yard for an unscheduled restricted availability or interim dry-docking. On the average, about 1,200 men from the production shops (06-99) are working on these ships daily at a composite manday cost of \$126 per day, including overhead and support costs.

The Portsmouth Naval Shipyard has been engaged in a major program to improve the shipyard's productivity and over the past two years has reduced the length of time required and the cost of

ECONOMIC ANALYSIS DEPARTMENT OF THE NAVY INVESTMENTS  
SUMMARY OF PROJECT COSTS  
FORMAT A-1

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overhauling an SSN from \$17,000,000 and 14 months (USS JACK) to \$14,500,000 and 11 months (USS HAMMERHEAD) and of overhauling an SSEN (including refueling and conversion) from \$42,500,000 and 20 months (USS SAM RAYBURN) to \$37,000,000 and 15 months (USS GEORGE BANCROFT). The cost per day of overhaul varies between \$44,000 and \$80,000.

A limiting factor in achieving further reductions in the time and cost of submarine overhauls at Portsmouth is the shortage of portal cranes serving the Drydock 1/3 and Berths 11/13 area. It is taking longer than it should to offload stores from the Boat when it arrives, and to reload the Boat after the overhaul work has been completed. The time consumed in staging and un-staging a Boat in its Drydock could be halved if adequate portal crane service was available. It is taking longer than it should to accomplish the removal (RIPOUT) of the equipment that needs to be sent to the shops for overhaul, and the reinstallation of that equipment is being similarly delayed. With only three portal cranes to serve all the ships in the Drydock 1/3 and Berth 11/13 area, all three of the portal cranes must be scheduled to work every day, and every breakdown, no matter how minor, disrupts the overhaul schedule and causes lost time.

If the two portal cranes being requested by this project are provided, the shipyard estimates it will be able to further reduce the time required to overhaul an SSN or SSEN by at least 5 working days and to further reduce the cost of such overhauls by \$150,000 per overhaul. Since the long-range minimum scheduled workload for Portsmouth is two SSN overhauls each year and one SSEN overhaul every 15 months, the potential annual savings in direct overhaul costs are in excess of \$400,000.

ECONOMIC ANALYSIS - DEPARTMENT OF THE NAVY INVESTMENTS  
SUMMARY OF PROJECT COSTS  
FORMAT A-1

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The current annual cost to operate and maintain the two additional cranes is \$90,000 per year. The differential cost (anticipated financial gain) is thus \$400,000 - \$90,000 = \$310,000 per year. The differential cost (anticipated financial gain) of \$310,000 was escalated at the rate of 4 percent compounded annually.

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23.

/s/

B. L. HANSEN, CAPTAIN, CEC, USN

Public Works Officer

Date: 14 June 1973

Portsmouth Naval Shipyard

Portsmouth, New Hampshire

The above savings do not include any monetary value for returning submarines to the fleet 5 days earlier after completing an overhaul.

Mr. PATTEN. Are there any questions on Portsmouth?

[No response.]

THE 3D NAVAL DISTRICT

Mr. PATTEN. Turn to the 3d Naval District. Insert page I-6 in the record.

[The information follows:]

DEPARTMENT OF THE NAVY  
MILITARY CONSTRUCTION PROGRAM - FY 1974  
(ALL DOLLARS THOUSANDS)

<u>Installation and Project</u>	<u>Authorization</u>		<u>Appropriation</u>	
	<u>Project Amount</u>	<u>Installation Total</u>	<u>Project Amount</u>	<u>Installation Total</u>
<u>THIRD NAVAL DISTRICT</u>				
<u>State of Connecticut</u>				
<u>Naval Submarine Base, New London (LANTFLT)</u>				
P-155 Bachelor Enlisted Quarters Modernization (722.10-1,202 Men) (250,524 SF)	3,372		3,372	
P-111 Electrical Tie and Distribution Line (812.30-1S)	2,786		2,786	
		6,158		6,158
<u>Naval Underwater Systems Center, New London Laboratory, New London (CNM)</u>				
P-003 Engineering Building (310.34-74,000 SF)	3,600		3,600	
		3,600		3,600
<u>State of New Jersey</u>				
<u>Military Ocean Terminal Bayonne (CNO)</u>				
P-020 Military Sealift Command/Atlantic Relocation (610.10-98,200 SF)	1,806		1,806	
		1,806		1,806
<u>State of New York</u>				
<u>Naval Support Activity, Brooklyn ( CNO )</u>				
P-998 Relocate Telephone Switchboard (135.50-1S)	75		75	
P-008 Bachelor Enlisted Quarters Modernization (722.11-225 MN)(37,500 SF)	1,056		1,056	
		1,131		1,131
TOTAL - THIRD NAVAL DISTRICT		<u>12,695</u>		<u>12,695</u>

NAVAL SUBMARINE BASE, NEW LONDON, CONN.

Mr. PATTEN. Turn to Naval Submarine Base at New London, Conn.  
Put in page I-7 in the record.  
[The information follows:]

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1. DATE 19 FEB 1973		2. DEPARTMENT NAVY		3. INSTALLATION NAVAL SUBMARINE BASE								
4. COMMAND AND MANAGEMENT BUREAU COMMANDER IN CHIEF, ATLANTIC FLEET		5. INSTALLATION CONTROL NUMBER 6078-600		6. STATE/COUNTRY NEW LONDON, CONNECTICUT								
7. STATUS ACTIVE		8. YEAR OF INITIAL OCCUPANCY 1868		9. COUNTY (U.S.) NEW LONDON								
				10. NEAREST CITY 2 MILES SOUTHWEST TO NEW LONDON								
11. MISSION OR MAJOR FUNCTIONS Maintain and operate facilities to support training and experimental operations of the Submarine Force; provide logistic support to submarines including their overhaul and repair; provide logistic support to other activities of the Navy and other Government Activities in the area.  Major Activities Supported: Fleet Units including 2 Submarine Squadrons Submarine Flotilla 2 Submarine School Submarine Medical Center Marine Barracks		12. PERSONNEL STRENGTH		PERMANENT		STUDENTS		SUPPORTED		TOTAL (9)		
		OFFICER (1)	ENLISTED (2)	CIVILIAN (3)	OFFICER (4)	ENLISTED (5)	OFFICER (6)	ENLISTED (7)	CIVILIAN (8)			
		A. AS OF 31 DEC 1972		1,146	9,960	1,370	202	1,014	29	717	0	14,438
		B. PLANNED (END FY 1977)		1,129	10,072	1,370	137	936	20	520	0	14,184
				13. INVENTORY								
		LAND		ACRES (1)	LAND COST (\$000) (2)		IMPROVEMENT (\$000) (3)		TOTAL (\$000) (4)			
A. OWNED				1,028	1,299		82,833		84,132			
B. LEASE AND EASEMENT #		3* - 6#			40* - 0#		553* - 0#		553			
C. INVENTORY TOTAL (EXCEPT LAND RENT) AS OF 30 JUNE 19 72									84,685			
D. AUTHORIZATION NOT YET IN INVENTORY					(EXCLUSIVE OF FAMILY HOUSING \$7,175,000)				20,721/			
E. AUTHORIZATION REQUESTED IN THIS PROGRAM					(EXCLUSIVE OF FAMILY HOUSING \$0)				7,682			
F. ESTIMATED AUTHORIZATION - NEXT 4 YEARS					(EXCLUSIVE OF FAMILY HOUSING \$0)				29,301			
G. GRAND TOTAL (C + D + E + F)									142,395			
14. SUMMARY OF INSTALLATION PROJECTS												
CATEGORY CODE NO.	PROJECT DESIGNATION PROJECT TITLE	TENANT COMMAND PRIORITY	UNIT OF MEASURE	AUTHORIZATION PROGRAM		FUNDING PROGRAM						
				SCOPE	ESTIMATED COST (\$000)	SCOPE	ESTIMATED COST (\$000)					
722.10	BACHELOR ENLISTED QUARTERS MODERNIZATION	54	SF	250,524	3,372	250,524	3,372					
812.30	ELECTRICAL TIE AND DISTRIBUTION LINE	1	LS	-	2,786	-	2,786					
			TOTAL		6,158		6,158					

1/ INCLUDES \$1,524,000 FOR POLLUTION ABATEMENT

Naval Submarine Base, New London, CT., \$6,158,000

The base maintains and operates shore facilities to support 2 attack submarine squadrons, a submarine development group and 2 deployed Polaris/Poseidon submarine squadrons.

The bachelor enlisted quarters project will modernize, to current standards of habitability, living spaces for 1,202 men.

The electrical tie and distribution line project will provide facilities to meet increasing demand resulting from facilities expansion and a need to provide shore power to modern nuclear submarines.

Status of funds:

Cumulative appropriations through FY 1973	\$45,560,000
Cumulative obligations, Dec 31, 1972 (actual)	34,645,477
Cumulative obligations, June 30, 1973 (estimated)	40,268,695

DESIGN INFORMATION

Project	Design Cost	Percent Complete
Bachelor enlisted quarters modernization	\$173,346	16
Electrical tie and distribution line	\$127,620	24

Current Bachelor Enlisted Status at NSB, New London, CT

1. Effective EEQ requirement	4,904
2. Adequate Assets	543
Installation	172
Community	371
3. Deficit	4,361
4. Fiscal Year 1974 project	<u>1,202</u>
5. Remaining deficit after fiscal year 1974	3,159