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REPROGRAMING ACTION—TRIDENT
SUBMARINE

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JAN 8 1981

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HEARING

BEFORE THE

SEAPOWER AND STRATEGIC AND CRITICAL
MATERIALS SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES

HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

SECOND SESSION

SEPTEMBER 23, 1980

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(II)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SEAPOWER AND STRATEGIC AND
CRITICAL MATERIALS SUBCOMMITTEE,
Washington, D.C., Tuesday, September 23, 1980.

The subcommittee met, pursuant to notice, at 2:05 p.m., in room 2216, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

Mr. BENNETT. The subcommittee will come to order.

It's a pleasure to have with us this afternoon Rear Adm. James Webber, deputy commander, Naval Sea Systems Command, to discuss with us the reprogramming action referred to the subcommittee by the full committee on Tuesday, August 26. Essentially this reprogramming will transfer money from the fiscal year 1980 Trident submarine to fund increased costs on prior year Trident submarines.

It is the subcommittee's understanding that following a repricing of the fiscal year 1980 submarines, funds became available which could be used for past cost growth and escalation.

My first concern is what is the justification for assuming that the fiscal year 1980 Trident will indeed cost less than the previous Tridents and how did you arrive at this determination.

Second, I was recently informed by the Secretary of the Navy that there will be significant delays in both the Trident and attack submarine program. What is the cause of these delays and how will these delays affect this reprogramming?

Finally, I would like to go on record again as being concerned at the lack of use of our existing naval facilities. As you recall, in the Seapower Subcommittee's report of 1974, this subcommittee recommended that some new naval vessel construction be assigned to naval shipyards. It seems that some thought in this direction might now be appropriate.

Those observations were not made casually then, and the reasons for those observations seem, to me at least, to be as cogent today as they were then.

All right, sir. We will be glad to hear from you.

Admiral WEBBER. I have a prepared statement, Mr. Chairman, and with your permission I will submit the statement for the record and give you a brief synopsis at this time.

Mr. BENNETT. I would prefer that, if you would do that. The entire statement will be in the record.

Admiral WEBBER. Yes, sir.

WRITTEN STATEMENT OF REAR ADM. JAMES H. WEBBER, USN

On 26 August 1980, the Navy testified during a House Armed Services Committee hearing on a request to reprogram funds within the Trident program. The Reprogramming Action was referred to this Subcommittee for further review. The Reprogramming Action proposes to transfer \$69.5 million, which is excess to the requirements of the fiscal year 1980 Trident submarine, to accounts which are available to fund increased costs on prior year Trident submarines. Specifically, \$23.8 million

will be applied to Cost Growth and \$45.7 million to Escalation on the prior year Trident submarine program.

To put this Reprogramming Action into an understandable context, I must summarize the history of the funding required for the earlier Trident shipbuilding contracts.

On 25 July 1974, the Navy and Electric Boat Division entered into a contract to construct the first four Trident submarines—those in the fiscal year 1974, fiscal year 1975, and fiscal year 1976 programs. The contract was amended in June, 1977 to provide for the three ships in the fiscal year 1977 and fiscal year 1978 programs. That contract provided, as do most shipbuilding contracts today, for a sharing of financial risks. The Navy assumed the risk of increased costs associated with inflation since that is beyond the shipbuilder's control. Also, the Navy agreed to share, up to a ceiling price, the risk of cost increases on this contract which might occur due to other causes.

In the fiscal year 1979 budget, the Navy requested and the Congress appropriated funds to cover increased costs related to the sharing of these risks. However, all of the funds which were appropriated were not applied to the Trident program because of the need to solve a very significant Navy problem. On 5 October 1978, the Navy reached agreement with Newport News on all claims then outstanding with that shipyard. The agreement required that the funds due under those claim settlements would be paid by 31 March 1979. To obtain these funds, the Navy requested that Cost Growth funding be provided in the fiscal year 1979 Supplemental Budget Request. When it became apparent that the Supplemental would not be passed by the date required for payment in the Newport News claim settlements, the Secretary of the Navy informed Congress that \$86.7 million of previously appropriated Trident Cost Growth funds would be utilized to finance the settlement of those claims. Subsequently, when the fiscal year 1979 Supplemental Appropriations Act was passed, funds to offset the Trident Cost Growth were not included.

Then, by the latter part of 1979, the Navy completed a review of the Trident submarine program cost estimates considering various indicators available at the time. Revised cost estimates were subsequently developed to take these factors into consideration. The Congress was notified of these reduced cost estimates in the December 1979 Selected Acquisition Report. These revised cost estimates included a reduction in the estimated construction cost for the fiscal year 1980 Trident submarine.

In summary, there are three points to be made with respect to this Reprogramming Action. First, the revised estimates for the fiscal year 1980 Trident submarine are based upon various indicators that the cost of the submarine would be less than previously estimated by the Navy. Second, while there have been difficulties on the early ships at Electric Boat, the revised estimate remains valid. Third, the Reprogramming Action will apply these funds to prior year Trident program requirements, including the need to cover the Navy's liability under the original terms and conditions of the shipbuilding contracts.

This Reprogramming Action has been approved by both the Senate Armed Services Committee and the Senate Appropriations Committee.

STATEMENT OF REAR ADM. JAMES H. WEBBER, USN, DEPUTY COMMANDER, NAVAL SEA SYSTEMS COMMAND

Admiral WEBBER. I have with me Admiral Murray, the Trident program manager, and Captain Milligan from the Navy Comptroller's Office, who will help me here, sir.

The reprogramming action proposes to transfer \$69.5 million, which is excess to the fiscal 1980 Trident submarine, to accounts available for the prior year Trident submarine program.

The origin of this request goes back to 1978, when the Navy reached agreement with Newport News on a claim settlement, and the agreement required that funds due under the claim settlement be provided by March 1979.

The Secretary of the Navy informed Congress that \$86.7 million of previously appropriated Trident cost growth funds would be utilized to finance that portion of the settlement. Funds to offset the Trident cost growth were not appropriated in a subsequent fiscal 1979 supplemental appropriation. Thereafter, the Navy, as a

result of a review of the cost estimates on the fiscal year 1980 Trident submarine, concluded that funds could be made available from that account to replace the cost-growth funds which had been utilized in the claim settlement.

Mr. BENNETT. That \$69 million is actually what? I'm not sure I quite understand. You say you overestimated that by \$69 million.

Admiral WEBBER. No, sir. We have reevaluated the estimate for the fiscal 1980 Trident, and in view of certain factors at Electric Boat we have concluded that that money can be made available from the fiscal 1980 Trident.

Mr. BENNETT. That's awfully good English, but the thoughts don't come through.

Admiral WEBBER. Yes, sir.

Mr. BENNETT. It phrases beautifully, but I don't understand.

Admiral WEBBER. The specific reason that we feel the \$69.5 million can be made available, are due, first to demonstrated reductions in the overhead rate at Electric Boat.

Mr. BENNETT. Then there actually was a cost reduction there?

Admiral WEBBER. A reduction in overhead costs, yes, sir.

Mr. BENNETT. That's wonderful. That should be in the headlines.

Admiral WEBBER. Yes, sir.

The second factor was that we felt that the change order allowance, in view of the fact that this was the eighth submarine of the Trident class, could be reduced. And the third factor was that an allocation for a break in production, due to the fact that there was not a fiscal year 1979 Trident submarine, likewise could be reduced.

Our conclusion, based on our complete review of the Trident cost estimates, is that funds are available within the end cost of the fiscal year 1980 ship.

Mr. BENNETT. Does any member of the subcommittee have a question to ask about this? The statement is before you.

The last question I asked, are you giving any consideration to doing this work in public shipyards, like Philadelphia? Have you given any thought to that? We asked you in 1974 to give thought to it. Did somebody make a recommendation? If so, it never came to me.

Admiral WEBBER. Yes, sir. In 1976 and 1977 the Navy conducted studies of new construction at Philadelphia, Mare Island and Puget Sound naval shipyards. Those studies were completed and reported to the Department of Defense. However, the decision was made at that time to not proceed with new construction in naval shipyards.

Mr. BENNETT. Maybe you're not able to give it to me now, but I really would like to know something about it. In other words, you told me the decision was made not to go ahead. Why don't we use our naval shipyards more fully than we do?

Admiral WEBBER. The reasons given at that time, Mr. Chairman, were the fact that the shipbuilding capacity was sufficient in the private sector to accomplish the shipbuilding program.

Mr. BENNETT. Then why are we falling so far behind at Electric Boat and other places?

Admiral WEBBER. There have been problems at Electric Boat and the production rate has clearly not kept up with the projected rate. There have been ships rescheduled at Electric Boat in the very

recent past. I would agree that the production rate at Electric Boat has not kept pace with their earlier schedule.

Mr. BENNETT. The votes are on at the moment. I don't know how many votes. Does anybody here know how many votes are going to come up? Mr. Hutto, do you know?

Mr. HUTTO. No, sir, I don't.

Mr. BENNETT. There are obviously a whole series of votes, and 5 minutes have gone by already. So we'll have to go, and we'll come back as soon as we can. My guess is we'll be back in about 10 or 15 minutes. Sorry for the delay.

In the meantime, you might be thinking over some answers to my question.

Admiral WEBBER. All right, sir.

[The subcommittee recessed from 2:14 p.m. until 3:12 p.m.]

Mr. BENNETT. The subcommittee will come to order.

We were in the process of opening it up for questions.

Mr. Hutto, you're the only Democrat present. I have already asked all the questions I have.

Mr. HUTTO. I don't have any questions, Mr. Chairman. I pass.

Mr. BENNETT. We have a question that I put to him before I left that he's going to answer.

Admiral WEBBER. Yes, sir, if you will permit me.

You had asked about resuming submarine construction in naval shipyards, and I stated that we had conducted studies of this in 1976 and 1977. The conclusion reached was that submarine construction could be accomplished in naval shipyards, although there would be start-up costs and we would require relief from the shipyard ceiling restrictions.

We have within the past few days initiated action to update those studies within the Naval Sea Systems Command. We are reevaluating that possibility. We are bringing those studies up to date.

Mr. BENNETT. We'll probably have another hearing on that. We would like to look at that. I'm not necessarily saying we ought to do it, but it's something we ought to think about.

Admiral WEBBER. Yes, sir.

Mr. BENNETT. Mr. Hutto, do you have any questions?

Mr. HUTTO. Thank you, Mr. Chairman.

I would like to ask the admiral. As I understand it, you are reprogramming all the Trident money that was not used in fiscal 1980. Is that correct?

Admiral WEBBER. It is based on our cost estimates. The fiscal year 1980 funds of course, have not yet been used.

Mr. HUTTO. Is that because of a reprogramming, that these funds might have been used elsewhere during the past fiscal year?

Admiral WEBBER. No, sir. The reprogramming is from the fiscal year 1980 ship end cost into accounts available to fund earlier years of the Trident program.

Mr. HUTTO. I understand that. But what I'm trying to arrive at is why we're not using all the funds appropriated for fiscal 1980 for the Trident program.

Admiral WEBBER. The reason is that we reevaluated the estimated cost of the fiscal year 1980 ship last fall. We concluded that those funds would not be required.

Mr. HUTTO. Would not be required?

Admiral WEBBER. Yes, sir.

Mr. HUTTO. But now the reprogramming is to take care of prior years?

Admiral WEBBER. Yes, sir.

Mr. HUTTO. I gather, then, that we've learned something from those prior years that makes it less expensive per se in the Trident program. Would that be true?

Admiral WEBBER. Yes, sir. Compared to the original estimate. We do have information, which is hard information, that, first, overhead costs have been reduced, thereby reducing our estimate for the fiscal 1980 ship. Second, based on experience to date, since this is the eighth ship, the change order category can be reduced. And third a reanalysis of the effects of the break in production due to the omission of the 1979 ship revealed that effect was less severe than originally estimated. So those are the three principal things that led to the repricing of the fiscal 1980 ship.

Mr. HUTTO. Thank you. There is some good news.

Mr. BENNETT. Has the company agreed that their overhead is less?

Admiral WEBBER. Yes, sir. That is based on actual overhead rates which they have achieved.

Mr. BENNETT. That really is good news.

Admiral WEBBER. Yes, sir.

Mr. BENNETT. Mr. Spence.

Mr. SPENCE. Thank you, Mr. Chairman.

Admiral, it's good to see you this afternoon.

Admiral WEBBER. It's nice to see you, sir.

Mr. SPENCE. I understand you have a copy of my somewhat lengthy question, or statement in the form of a question, which I will read into the record, and then if you would answer it for me.

The general manager of the Electric Boat Division, General Dynamics, recently notified the commander, Sea Systems Command that the first Trident submarine *Ohio*, SSBN-726, would be delayed for delivery to the Navy until June 29, 1981.

The original contract delivery date for *Ohio* was April 30, 1979. The delivery of *Ohio* has now slipped by over 2 years.

On August 1, 1980, the Naval Sea Systems Command Monthly Progress Report showed an estimated delivery date of February 1, 1981. A few weeks later the general manager of Electric Boat notified the Navy that delivery has further slipped to June 29, 1981.

The reason given for the delays are "numerous government changes."

I've heard those words before, and as far as I'm concerned, they are code words for claims.

Specifically these changes include:

First, turbine rotor replacement.

Second, ships surface service turbine generator (SSTG) rotor balancing.

Third, turbine throttle stand modifications.

Fourth, hydraulic vent and supply tank modifications.

Fifth, control surface linkage modifications, and

Sixth, ASW air conditioning piping modifications.

The letter also states that the slippage in delivery further includes the impact of many design changes, as well as the impact of the late issue of engine room storage data.

After having stated all of the above, the general manager wrote that the six remaining Trident submarines, SSBN-727 through SSBN-732, will be delivered on time. Frankly, I am skeptical about the optimistic picture being portrayed for future Trident delivery schedules.

I would appreciate it if you would give the subcommittee:

(a) An explanation for each of the reasons cited by the general manager as contributing to the delay in delivery of *Ohio*, (b) your assessment as to the degree of impact each of the changes should have on a delayed delivery schedule, and (c) your assessment of the likelihood of another large claims action by the Electric Boat Division against the Government.

Admiral WEBBER. All right, sir.

Regarding your first question, the explanation for each of the reasons for delay given by Electric Boat:

The turbine rotor replacement was a replacement of the rotor, in the main propulsion turbine. This is Government-furnished equipment and had to be replaced because of a design deficiency in the rotor. As far as the shipbuilder was concerned, that was properly a matter of Government responsibility.

The ship service turbine generator rotor balancing was required during the test program. The rotor turned out to have been out of balance, rather than being completely in balance, as it had been when it was shipped from the vendor's plant.

Both of those were corrections of problems with Government furnished equipment.

The next four items, items 3 through 6, are design changes. There are always going to be changes in the development of the design as you complete the first ship of a new complex class. They were changes that Electric Boat, as our design agent, recommended to us. The Navy agreed that these changes were unnecessary.

All of those changes had been negotiated into a modification to the contract, which delayed the delivery of the lead ship until February 1981.

The subsequent changes, such as the late issue of engine room storage data, are given by Electric Boat as reason for justifying their delaying of the lead Trident from February 1981 until June 1981.

However, it is the Navy's opinion that the quality assurance problems at Electric Boat, specifically the welding and carbon steel problems, principally contributed to that delay. In summary, the total period of delivery extension is not solely due to design changes. The final delivery date of the lead Trident, as given by Electric Boat in our opinion, is substantially affected by their own problems in the shipyard.

Mr. SPENCE. Based on your previous experience, Admiral, do you think the remainder of those submarines will be on schedule, as we have been told?

Admiral WEBBER. The Navy has not yet completed their evaluation, of the new schedules. We have requested some supporting information, which has been promised us by Electric Boat by the

end of September. It will take us about 30 days to evaluate that data. It is my opinion that their new schedules will be very difficult, if not impossible, to achieve.

Mr. SPENCE. Thank you, Mr. Chairman.

Mr. BENNETT. You didn't address item C, your assessment of the likelihood of another large claim.

Admiral WEBBER. Yes, sir.

Mr. BENNETT. Or would you rather give us that later?

Admiral WEBBER. No, sir. I think I can give that to you now.

We have been advised by Electric Boat in correspondence that in the case of the nonconforming carbon steel and in the case of the structural welding that they consider the Navy to have assumed the risk of the financial consequences of these events under the broad insurance provisions of the shipbuilding contract and that they intend to submit insurance claims for these consequences.

Mr. BENNETT. In other words, they say that you had approved the material which you have now found deficient?

Admiral WEBBER. No, sir. They really have not gone that far. Their statement is that the Navy, which is a self-insurer under the shipbuilding contract, is obligated as an insurance company to reimburse Electric Boat for the costs incurred by Electric Boat for inspection and correction of their workmanship deficiencies.

Mr. BENNETT. How about these first two items here? You say those were Government failures?

Admiral WEBBER. Yes, sir. Those are clearly Government responsibility.

Mr. BENNETT. Why did the Navy fail on that? Why didn't they test those things before they gave them to them?

Admiral WEBBER. Both of those were tested. However, the testing did not reveal the problem, quite frankly.

Mr. BENNETT. So people with good, earnest intentions just didn't arrive at the right answer?

Admiral WEBBER. Yes, sir. I think that's a fair statement, Mr. Chairman.

Mr. BENNETT. All right.

Any further questions, Mr. Spence?

Mr. SPENCE. No. Thank you, Mr. Chairman.

Mr. BENNETT. Mr. Tribble.

Mr. TRIBLE. Thank you, Mr. Chairman.

Admiral, do you then anticipate that Electric Boat will file claims under the Trident program? If so, at what time are they anticipated, and what magnitude are we talking about?

Mr. BENNETT. The letter we have from Electric Boat does not specify a time nor an amount. They state that they will submit the claims. They will be set forth when the amounts are quantified and they have developed their legal position.

Mr. TRIBLE. Let me ask a second question in another way.

Admiral WEBBER. Yes, sir.

Mr. TRIBLE. What was the original targeted ceiling price for the Trident submarine, and what is the current anticipated cost?

Admiral WEBBER. For the first four ships the original target price was \$985 million, and the current target price is \$1,017 million. The current Navy estimate at completion—this is the Navy estimate—is \$1,210 million.

Mr. BENNETT. \$1,017 from \$985. That's a \$32 million increase.

Admiral WEBBER. Yes, sir. That is the increase due in the target price to adjudicated changes through August of this year.

Mr. BENNETT. Oh, the Navy's estimate.

Mr. TRIBLE. Its \$320 million, isn't it?

Mr. HALE. It's billions he's talking about.

Mr. BENNETT. That's what I'm trying to figure out. That makes it \$1,210 million.

Admiral WEBBER. Right, sir. \$1,210 million is the Navy estimated price at completion.

Mr. TRIBLE. Tell me again the specific causes of the delays encountered in the Trident program.

Admiral WEBBER. The specific causes of those delays, the general categories, are: modifications to Government equipment, design changes, and quality assurance problems in the shipyard.

Mr. TRIBLE. To what degree would you attribute these delays to the Navy and to the shipyard, if you had to allocate responsibility, Admiral?

Admiral WEBBER. There is some of each, Mr. Tribble. I'm really not in a position to allocate specifically how much is which.

Mr. TRIBLE. That's an artful response, Admiral, and I can't blame you for saying so.

How many of the problems in the Trident program affected the 688 program, Admiral?

Admiral WEBBER. The 688 program has been affected by the quality assurance problems in the yard. There has been little effect on that program due to design changes. I see little cross contractual impact between Trident and the SSN 688's at the moment.

Mr. TRIBLE. The truth is that they are far behind in building attack submarines. SSN 698, 14-month delay. That's 14 months by your reckoning. By the reckoning in Secretary Hildago's letter, he suggested that the SSBN-726 was just 5 months delayed. But, as Mr. Spence points out, it's actually a 2-year delay. That's a 5-month delay over and above the delay that you had already submitted to us.

Admiral WEBBER. Yes, sir.

Mr. TRIBLE. The attack submarine 698 is, according to Secretary Hildago's letter of September 9, 1980 to the chairman of this committee, 14 months delayed over and above prior delays, attack submarine 699, 12 months, attack submarine 700, 10 months, attack submarine 701, 8 months. Those are substantial delays.

It would seem that when a shipyard encounters problems with the Trident program that might very well impact on their ability to do other work, and they are obviously having trouble doing this work in a timely fashion.

You don't see any relationship between those two?

Admiral WEBBER. Part of the delays have a common cause, and that is the quality assurance problems in the yard. Those difficulties or deficiencies have affected both the Trident and the SSN 688's, in my opinion.

Mr. TRIBLE. All right, sir.

For the record I would like you to indicate the original delivery date for all of the SSBN's and SSN's now under construction at

Electric Boat, and I would like you to compare those original delivery dates to the currently estimated delivery times.

Admiral WEBBER. Yes, sir. I will be happy to do that.
[The following information was received for the record:]

Ship	Delivery dates—		Months delay
	Original contract	Latest electric boat announced	
SSN 698	Feb. 28, 1977	Dec. 31, 1980	46
SSN 699	June 30, 1977	Feb. 6, 1981	44
SSN 700	Oct. 30, 1977	Apr. 18, 1981	42
SSN 701	Feb. 28, 1978	June 6, 1981	40
SSN 702	July 10, 1978	July 18, 1981	36
SSN 703	Nov. 10, 1978	Sept. 12, 1981	34
SSN 704	Jan. 31, 1979	Feb. 8, 1982	37
SSN 705	May 31, 1979	June 5, 1982	37
SSN 706	Sept. 30, 1979	Oct. 2, 1982	37
SSN 707	Jan. 31, 1980	Jan. 29, 1983	36
SSN 708	May 31, 1980	Sept. 24, 1983	40
SSN 709	Sept. 30, 1980	Jan. 21, 1984	40
SSN 710	Jan. 30, 1981	May 19, 1984	40
SSN 719	Aug. 18, 1984	Aug. 18, 1984	
SSN 720	Mar. 16, 1985	Mar. 16, 1985	
SSBN 726	Apr. 30, 1979	June 29, 1981	26
SSBN 727	Apr. 30, 1980	Nov. 30, 1981	19
SSBN 728	Dec. 31, 1980	July 31, 1982	19
SSBN 729	Aug. 31, 1981	Mar. 31, 1983	19
SSBN 730	Apr. 30, 1982	Nov. 30, 1983	19
SSBN 731	Dec. 31, 1982	July 31, 1984	19
SSBN 732	Aug. 31, 1983	Mar. 31, 1985	19

Mr. TRIBLE. I would anticipate that these delays of 14, 12 and 10 months would impact on cost as well.

Admiral WEBBER. Yes, sir. I would agree with you.

Mr. TRIBLE. Is it fair to say that those ships will cost considerably more than originally anticipated because of those delays?

Admiral WEBBER. Yes, sir.

I would point out that the present contractual cost-sharing provisions on those ships was established by the Public Law 85-804 settlement. However, it is clear that the delays in the ships will increase their cost over what it would have been had the ships been delivered on the dates in effect prior to the rescheduling.

Mr. TRIBLE. OK. For the sake of the record I would ask you to submit, if you would, the contract price for these ships as originally negotiated for those submarines and what the cost will now be.

Admiral WEBBER. Yes, sir.

Mr. TRIBLE. Also for the sake of the record, I wish that you would take the submarines being constructed at Newport News in the same time frame and give us those costs as well.

Admiral WEBBER. All right, sir.

[The following information was received for the record:]

ELECTRIC BOAT SHIPS COVERED UNDER PUBLIC LAW 85-804 SETTLEMENT

[Dollars in millions]

Contract	Fiscal year program	Original contract target price ¹	Average per ship ¹	Current cost estimate ²	Average per ship ³
N00024-71-C-0268.....	1970-72				
SSNs 690, 692, 694, 696-699.....		412.9	59.0	1,035.7	148.0
N00024-74-C-0206.....	1973-74				
SSNs 700-710		769.9	70.0	1,714.6	155.9

NEWPORT NEWS SHIPS UNDER CONSTRUCTION—1971-84

N00024-70-C-0269.....	1970				
SSN 688		74.5	74.5	*126.0	126.0
N00024-71-C-0270.....	1970-72				
SSN 689, 691, 693, 695.....		247.6	61.9	*364.2	91.1
N00024-76-C-2031.....	1975-76				
SSN 711-715.....		449.5	89.9	734.1	146.8
N00024-77-C-2220.....	1977				
SSN 716-718.....		380.8	126.9	541.1	180.4

Note.—The above estimates rely upon projections with respect to escalation which may or may not prove to be accurate. A more reliable comparison involves actual return costs to the shipbuilder and the government for the first five ships delivered at each yard.

	Electric Boat	Newport News
Average cost to builder.....	148.0	98.0
Average cost to government.....	128.0	98.0

¹ Escalation is not included in contract target price.

² Includes escalation and changes; does not include profit or loss.

³ Includes portion of Public Law 85-804 settlement fixed loss applicable to the first five ships.

* Actual.

Mr. TRIBLE. One final point, if I can have the indulgence of the chairman.

The question has been raised about building new ships at naval shipyards. The Navy has conducted studies on that question in 1971, in 1972 and in 1977. It is my understanding that the Navy found in each of those situations the cost of new construction in Government yards would be at least a third higher than the same construction in private shipyards.

Is there anything that would lead you to believe that this new study being undertaken today is going to reach a different conclusion, and, if so, would you share that conclusion?

Admiral WEBBER. I'm really not in a position to say which factors may have affected those earlier studies that would not be true today. As I mentioned earlier, we are reviewing those studies to see if there has, in fact, been a change. I think it would be presumptuous of me to anticipate what that answer might be.

Mr. TRIBLE. I would anticipate during the course of your distinguished naval career you would have developed a professional expertise that would bear on that question. However, I don't want you to be so reluctant to respond.

Admiral WEBBER. Yes, sir.

Mr. TRIBLE. I would be happy to couch it in terms of your professional and personal opinion.

Admiral WEBBER. All right, sir.

In my opinion—you quoted a 30-percent differential—I would not anticipate the cost differential to be that high, quite frankly.

Mr. TRIBLE. Is that because your public shipyards are becoming more efficient or your private shipyards less efficient, or to what do you attribute that?

Mr. BENNETT. He never said he believed it was 30 percent.

Admiral WEBBER. That's right. Yes, sir.

I would really want to go back and review the basis for the 30 percent.

Mr. BENNETT. He never said he approved of the 30 percent.

Admiral WEBBER. No, sir.

Mr. BENNETT. He just said in his professional opinion, which you extracted from him, that it was less than 30 percent.

Mr. TRIBLE. I can't help it if the Admiral wasn't responsive to my question. I was just trying to elicit a response to a very reasonable question. The Admiral suggests that he thinks that that differential would be less today than in the past, and I was just asking him if he wished to share with me some of his opinions.

Mr. BENNETT. But he didn't say what you're saying he said. He said it would be less than 30 percent. He never said it was 30 percent. That's the point that I'm pointing out to you. Because when you ask for his professional opinion and then you turn around and compare it with something that somebody else did in the past and make them both his professional opinion you've said something more than he's done. It may be what he would testify if you had asked him the question. But you asked him the question as to whether or not he felt that 30 percent was too high a figure for now, and he said yes. He didn't say he approved the 30 percent in somebody else's past study.

Mr. TRIBLE. I'm thoroughly confused and I'm sure you are as well now, Admiral.

My question was, and I'll restate my question:

In the past the Navy has conducted three studies, a study in 1971, in 1972, and in 1977, and the conclusion of those studies was that the cost of new construction in Government yards would be at least a third higher than in private yards.

My first question to you is: Do you have reason to anticipate that a new study would come up with a different conclusion? If you do, I would like you to tell me what you think it might come up with.

Admiral WEBBER. I would recommend, quite frankly, that we be permitted the opportunity to complete the study and to develop the information.

Mr. TRIBLE. OK.

Admiral WEBBER. I'm really not in a position to answer that right now.

Mr. TRIBLE. All right.

Thank you, Mr. Chairman. I appreciate your indulgence.

Mr. BENNETT. He answered that question you raised just then by saying that that was somebody else's decision and he didn't want to preempt that decision, which is in the process of being made.

Mr. TRIBLE. But these people are professional Navy people. Over the course of the years they're bound to have acquired some expertise in the field of their endeavor, and I was just asking him to

share with us some of his personal and professional opinions on an issue brought before the subcommittee.

Mr. BENNETT. He answered you. He told you it would be less than 30 percent.

Admiral WEBBER. That's my opinion, yes, sir.

Mr. BENNETT. He didn't tie it in with the 30 percent or 33 percent.

Mr. TRIBLE. I'm satisfied with your answer. I have my answer. I will await the study. Thank you, Admiral.

Mr. BENNETT. Mr. Emery.

Mr. TRIBLE. I'll tell you one thing, though. I dare say that this fourth study is going to come up with basically the same conclusion. I just wish we would build ships and stop making studies.

Mr. BENNETT. We didn't ask him to make this new study. This is a study he made on his own.

Mr. TRIBLE. I know. I wish we would build ships.

Mr. BENNETT. I thought private enterprise was building the ships.

Mr. TRIBLE. But these guys have to recommend to us so we can authorize and appropriate the funds.

Mr. BENNETT. OK.

Mr. Emery.

Mr. EMERY. All I can say is if we could build some of these at Bath Ironworks they'd deliver them 17 weeks earlier. However, they don't build submarines.

Admiral, I guess really the question that this all focuses down to is the productivity of Electric Boat, and I am concerned that we have a combination of problems. One may be related to the Trident program, the design, and then redesign, and problems with the equipment, and all sorts of things that may or may not be related to Electric Boat. But the other problem may be an inherent inability of Electric Boat to do all of the work on the submarines that it has been asked to do.

My colleague from Virginia mentioned the delays in attack submarine construction, and if those problems are concurrent with the problems in the Trident program then maybe we have a greater problem than we may wish to admit.

What comments do you have on the ability of Electric Boat to handle all of those projects at the same time? Do they really have an answer to their productivity problem? Are we giving them more work than they can reasonably be expected to do? Have they recognized certain management problems, and labor problems, or whatever else you feel aren't adequately addressed?

Could you reflect on that a little bit, and maybe that can generate some useful discussion here?

Admiral WEBBER. Yes, sir.

The most immediate problem that I see at Electric Boat is their quality problem. That problem has in itself affected delivery, by their own estimates, of the six attack submarines and, by the Navy's estimates, has also affected the Tridents. That problem is a very serious problem, and in our opinion that problem has to be addressed and solved as a matter of high priority because you just cannot compromise on quality in submarines.

Mr. EMERY. Can I interrupt you there, Admiral?

Now that we have identified there is a problem, and the nature of the problem, who is to blame? What changes should be made? Is it contracting? Is it poor workmanship? Is it poor management? Is it a lack of coordination between the Navy and the shipyard?

Admiral WEBBER. The shipbuilder is required by his contracts to deliver ships in accordance with the specifications. The specifications require the contractor to comply with certain quality requirements. Military specification MIL-Q-9858A, which is invoked in the contracts requires the shipbuilder to establish a quality assurance program.

We have conducted audits of his quality assurance program. It is our opinion that he is not in full compliance with that specification as he has some very fundamental problems in the quality assurance area.

Mr. EMERY. What specifications in particular? Do you have a list of those for us?

Admiral WEBBER. The particular specification that he has fallen down on is the quality assurance specification, military specification MIL-Q-9858A. That specification requires that the shipbuilder maintain a quality assurance organization that will take such actions as are required to insure that the product delivered to the Government meets the specifications which are incorporated in the contract.

Mr. EMERY. Are we talking about faulty equipment, improper installation of equipment, or are we talking about workmanship in general?

Admiral WEBBER. We're talking about workmanship and about providing material and equipment to meet the shipbuilding specifications.

Mr. EMERY. In any particular area of submarine construction or in all aspects of submarine construction?

Admiral WEBBER. The latter, sir. The two most recent problems, and most significant problems, have been the nonconforming carbon steel installed by Electric Boat and the lack of proper inspection of structural welding. Those are two specific problems that have had direct bearing on his ability to deliver the submarines.

Mr. EMERY. All structural welds have to be X-rayed and tested and some of them have to be broken down for internal examination. Isn't that correct?

Admiral WEBBER. Not all, but some do.

Mr. EMERY. At random?

Admiral WEBBER. No. We have a higher degree of quality required for structural welds in the pressure hull, Mr. Emery.

Mr. EMERY. But in the pressure hull structural welds must be X-rayed?

Admiral WEBBER. Yes, sir.

Mr. EMERY. And they have to be 100 percent inspected as far as hull veracity and penetration. Is that correct?

Admiral WEBBER. That is correct, yes, sir. However, we have not found problems in the pressure hull welds. They have been satisfactory. Where special radiography and special nondestructive testing techniques have been required by the contract and have been applied to the pressure hull the shipbuilder has met those speci-

cations. Where he has run into problems has been in secondary structure: Deck structures, stanchions, pipe hangers, wireway hangers, that type of secondary structure.

Mr. EMERY. That was the instance where the improper steel was used?

Admiral WEBBER. Yes, sir. Improper steel, improper welding, and improper weld inspection all have been problems.

Mr. EMERY. Were the specifications for those components clearly delineated, or was it a question that the company felt that it could use some latitude in construction and installation?

Admiral WEBBER. The requirements are clear. The requirements for the condition of the weld, the requirements of the type of inspection to be applied are clear.

Mr. EMERY. What other quality control problems have you identified?

Admiral WEBBER. There have been problems in copper nickel pipe fittings. The material is supplied by the shipbuilder for which he is responsible.

Mr. EMERY. Do you feel that the Navy has been able to get a handle on these quality control problems, or is it a continuing problem as this construction program continues? In other words, you've identified these particular problems and you've stated quality control is a general problem. But do you have any evidence to indicate that this trend has reversed?

Admiral WEBBER. No, sir, not yet. The shipbuilder initially identified two major problem areas, the steel and the welding. The Navy immediately commenced its own inquiry as well as close monitoring of the contractor's corrective actions. The Navy has uncovered some problem areas not previously identified by the shipbuilder. All the problem areas, and the proposed corrective actions are being closely watched to insure that the company meets the shipbuilding specifications.

So far, in my opinion, I do not feel that the company has taken those actions which will provide assurance that the basic underlying problem is solved.

Mr. EMERY. Mr. Chairman, that's the second bell. How do you want to proceed?

Mr. BENNETT. Do you want to pursue it when we come back?

Mr. EMERY. I would like to.

Mr. BENNETT. All right. We'll go vote and come back. It won't be as long as it was last time.

[The subcommittee recessed from 3:45 p.m. until 4 p.m.]

Mr. BENNETT. The subcommittee will come to order.

Mr. Emery, you may inquire.

Mr. EMERY. Admiral, you mentioned a few minutes ago that the Navy had been discussing some quality control mechanisms with Electric Boat.

Can you tell us what those mechanisms are? What have you done to or with Electric Boat that will insure greater quality control reliability?

Admiral WEBBER. We have taken two steps, Mr. Emery. First, we have asked Electric Boat to, conduct a thorough review of their own quality organization, their own internal review, and report to the Navy. In addition to that, we sent a team of our best people to

thoroughly review the yard's quality control program. We have issued a detailed report of that review in which we identified a series of deficiencies and deficient areas. We have asked Electric Boat to respond to that report, to identify their intended corrective actions, and we are now in the process of going back to Electric Boat with our evaluation of their response.

Basically, we have made available Navy experience in a careful review of Electric Boat's quality program and provided our comments and requested that they come in and identify corrective action to be taken.

Mr. EMERY. So essentially what you're telling me is you have asked them to undertake an internal review of their own quality control operation, and then you have sent in a team to duplicate their work and compare notes with their observations.

Admiral WEBBER. Yes, sir, in essence.

Mr. EMERY. That's fine. When was that initiated? When was that program initiated?

Admiral WEBBER. The Electric Boat self-analysis came in May. The Navy audit was conducted in June.

Mr. EMERY. Now that theoretically both of those reviews have been completed, what conclusions have you come to? Have you had an opportunity to compare notes between your review and their review, and have you drawn any conclusions, where they're similar, where they differ?

Admiral WEBBER. Yes, sir. We felt that there were a number of deficiencies in their quality operation that they had not identified. We identified them.

Mr. EMERY. Would you provide us with a list, maybe a copy of the Navy's report, and also Electric Boat's report, and a summary, so we can see in fairly concise language what they identified, what you identified, and where they differ?

Admiral WEBBER. Yes, sir. We will be happy to do that.

[The following information was received for the record:]

QUALITY ASSURANCE PROGRAM

When it became apparent that the quality problems being experienced by Electric Boat extended beyond isolated incidents, the Navy, in April 1980, requested Electric Boat to conduct a review of their quality assurance program. The self-assessment was provided to the Navy by letter of 23 May 1980. The letter stated that Electric Boat was convinced that their "quality program has been in compliance with the requirements of MIL-Q-9858A since 1969" when the transition from the previous quality assurance specification took place. The letter also listed actions "taken over the past two and one-half years which have strengthened, upgraded and modernized Electric Boat's quality programs * * * ." The actions listed include restructuring the overall shipyard organization, training (which while including quality assurance, also included "motivation/leadership, communications, absenteeism/attrition control" and other areas), and new work breakdown structure.

After receipt of this letter, the Navy conducted its own audit of compliance by Electric Boat with the quality assurance specification. The results of that audit were forwarded to Electric Boat by letter on 8 July 1980. The evaluation of the audit was that Electric Boat's quality assurance program contained the basic procedural elements of a quality system conforming to MIL-Q-9858A. However, the audit report went on to state that "there is not now adequate implementation and execution" to the specification, and that "there is a notable lack of emphasis on trend analysis and corrective action. . . . Electric Boat has placed heavy emphasis on cost and schedule performance and a policy of personal accountability for work assigned. NAVSEA agrees that these are important elements of a strong quality program. However, without effective audits, data analysis and positive corrective action feed-

back to discipline the system, the program cannot be truly effective and economical, nor can it be in full compliance with MIL-Q-9858A."

The Navy audit went on to list concerns in the three principal areas of the audit: In the area of quality program management, the audit found that the Electric Boat program represented "a fragmented approach to controlling materials and work." The program does not provide a sufficient corrective action program. Problems such as non-conforming steel and defective structural welds are examples of quality problems which were not identified soon enough to preclude major impact on the shipbuilding program.

In the area of control of purchased material and components, procurement quality control was considered to be "a major weakness in the Electric Boat Quality Program." Too few vendor surveys are conducted. A large number of the vendors currently being used have not been surveyed in four or more years. This program will not support timely detection of problems with material purchased by Electric Boat.

Manufacturing process quality control was also found to be a major weakness. While the policy of "vesting quality responsibility in the trades doing the work is fundamentally sound", success is dependent upon a quality assurance overview as well as experience in the installation trades and enforcement of system discipline by management. These elements do not now exist to the required degree at Electric Boat. Trade discipline is currently poor as evidenced by the high percentage of UNSATS relating to incomplete work. Quality Assurance Office participation appears to be minimal and concentrates on direct inspection of identified problem areas and limited surveillance efforts. Quality Assurance, in concise terms, lacks the means to sense problems and to enact timely corrective action.

The forwarding letter also noted that Electric Boat had presented planned improvements to Navy on 9 June 1980 which had not previously been identified. In view of these improvements, Electric Boat was requested to update the Quality Program Management Plan submitted in their proposals for the fiscal 1980 Trident and SSN-688 submarines.

On 22 August 1980, Electric Boat Division responded to the audit report by reiterating its position that Electric Boat Division has always been in compliance with MIL-Q-9858A since it was invoked. However, Electric Boat Division stated that they would integrate into their quality "upgrade and modernization program" those NAVSEA audit findings which would contribute to realistic, cost effective improvements in their overall quality program. NAVSEA, in a letter of 25 September 1980, disagreed with Electric Boat Division's statement that their quality program has been in compliance with all aspects of MIL-Q-9858A. Further, NAVSEA requested action on several audit findings which were not adequately responded to in Electric Boat Division's 22 August 1980 letter.

Copies of the Electric Boat self assessment of 23 May 1980 and the Navy audit of 8 July 1980 are attached.

GENERAL DYNAMICS*Electric Boat Division*

Electric Boat Road, Groton, Connecticut 06340 • 203 446-5960

92M
file

May 23, 1980

File No.: 601/80/WHL-0062

Subject: General Dynamics Corporation, Electric Boat Division,
Quality Program

Reference: (a) SUPSHIP ltr Ser 100-36 dated 2 April 1980

CAPT. J. F. Yurso, USN
Supervisor of Shipbuilding
Conversion and Repair, USN
Groton, CT 06340

Dear Captain Yurso:

I. Purpose.

The purpose of this letter is to provide the information requested by reference (a) and to comment on statements and conclusions concerning Electric Boat Division's Quality Program made therein. We are convinced that our program is in full compliance with MIL-Q-9858A. Nevertheless, we will continue in the future, as we have in the past, to review and improve this program on a continuing basis. We believe that a review of the actions taken by Electric Boat to develop a management system in full compliance with the requirements of MIL-Q-9858A, as well as subsequent actions taken to improve our system, would be helpful to an objective evaluation of Electric Boat's overall performance in this area.

II. Background of MIL-Q-9858A at Electric Boat.

In 1969 the Navy determined that MIL-I-45208A was not an appropriate specification for complex procurements such as nuclear submarines. It was the Navy's belief at that time that some reasonable approach should be taken by both the Navy and Electric Boat to provide the Supervisor a reasonable tool for quality assurance which would simultaneously effect considerable cost savings for the Navy while achieving increased quality at the same time. To achieve this objective, MIL-Q-9858A was determined as the quality program specification appropriate for submarine construction. Electric Boat has been evaluated by the Navy and received approval that it does

have a management system meeting MIL-Q-9858A requirements. The first review was performed in August 1969. It has always been our policy to respond to findings by implementing recommendations which would improve the quality program by rendering it more effective and economical. At no time has the Navy questioned the basic effectiveness or acceptability of our Quality program in meeting the requirements of MIL-Q-9858A. Electric Boat Division over the years has submitted documentation for its compliance with MIL-Q-9858A on each successive SSN 688 Class and Trident contract awarded to the Division. Examples of these submittals include those of November 1971; February 1973; November 1975; and June 1978. Each of these submittals has been the result of an intensive review to ensure that the latest internal procedures were included. During the time span since MIL-Q-9858A became applicable to our contracts, Electric Boat Division has delivered to the Navy the following submarines: SSN 678 ARCHERFISH; SSN 679 SILVERSIDES; SSN 681 BATFISH; SSN 684 CAVALLA; SSN 685 GLENARD P. LIPSCOMB; SSN 690 PHILADELPHIA; SSN 692 OMAHA; SSN 694 GROTON; SSN 696. NEW YORK CITY; and SSN 697 INDIANAPOLIS.

III. Material and Workmanship Nonconformances Identified.

In our view, every facet of the business operation plays a role in assuring that the end product produced complies with applicable quality requirements. We strongly disagree with the allegation in reference (a) that "It is apparent from examination of the management actions taken over the past several years on the problems noted in references (b), (c), and (d) among others, that the proper emphasis has not been placed by Electric Boat Division in areas of planning, work instructions, records and corrective actions." Reference (a) goes on to allege that the contractor's management has only taken that action necessary to correct the specific reported incidents without bothering to delve into the full scope of the problem and its underlying causes. It further asserts that the contractor treated these events as isolated events and did not investigate the cause of failure in the contractor's quality program. We wish to assure you that this is not the case. Although Electric Boat's MIL-Q-9858A quality program has had continuing acceptance by the Navy since inception, we have nevertheless initiated and adopted improvements identified as effective and economical.

We are well aware of the material and workmanship nonconformances identified during the last twelve months. Although only recently discovered, these nonconformances originated as early as 1970 and were undetected until recently by either Electric Boat's or the Navy's quality assurance activities. Moreover, most of them are not unique to Electric Boat and the Navy has been made aware of the pertinent details so that it could take such action at

other facilities as it deemed appropriate. The recent detection and identification of these nonconformances by Electric Boat are indicative of the improvements we have made in our systems and the increasing effectiveness of our quality assurance practices.

IV. Improvements in Electric Boat Quality Program.

Since the total quality program contemplated by MIL-Q-9858A includes material control and the technical and manufacturing aspects of production and related engineering design, it is necessary to outline the operational changes made at Electric Boat over the past two and one-half years in order to put our present quality assurance efforts into proper perspective and in order to understand how these operational changes have contributed to improved quality of the end product.

In general, the basic objective of the operational changes made during that period was to integrate Electric Boat's efforts in the areas of engineering, material, operations, and quality assurance through the utilization of a common data base. Using the plans and specifications required to build the ship as the common link, we developed an integrated bill of material for Trident and SSN 688 Class ships which allowed us to plan and schedule our material requirements accurately. We also put into effect a work breakdown structure, known as SUBCOMS, to scope, schedule and budget work. Using the common data base, we were able to establish an improved system of engineering configuration control to certify ship configuration. Although our computerized management system, known as SUBCOMS I, has been validated by the Navy as meeting the requirements of DODI 7000.2, this effort is continuing as part of a long-range Electric Boat effort to upgrade its systems. SUBCOMS II, as the next phase of this effort is known, is estimated to cost approximately \$11 million.

On a more specific basis, Electric Boat has initiated actions over the past two and one-half years which have been of significant benefit to its quality program. Some of the actions have directly involved the quality assurance area while others have involved improvements in management systems and controls which have strengthened Electric Boat's quality program as a whole. Those actions which have been completed are described in the following section.

A. GENERAL PROGRAM IMPROVEMENTS

Significant actions which have been completed and which strengthen Electric Boat's quality program as a whole are discussed in this section. For convenience, these are each addressed in relation to the primarily applicable section of MIL-Q-9858A, although it should be noted that many of the items pertain to multiple sections.

(1) Section 3.1 of MIL-Q-9858A - Organization - Addresses the subject of quality program management and specifically notes that the management for quality shall be clearly prescribed and personnel performing quality functions shall have well defined authority.

In October 1977, major changes in the top management organizational structure were made to provide for more effective and responsive supervision and communication. This included reducing the number of people reporting to the General Manager from 26 to 12. In the quality area itself, one individual at the level of Assistant General Manager was designated to assume overall responsibility for, and control over, the Quality Departments which include Nuclear Quality Control, Quality Assurance and Radiological Controls. Also assigned to him were certain other functions, such as Welding Engineering and Laboratory Services, which were considered to be a necessary part of the quality organization. These organizational changes have resulted in a more effective, integrated quality organization and in enhanced top management control of the total quality program.

(2) Section 3.2 of Mil-Q-9858A - Initial Planning - Requires in part that the contractor, during the earliest practical phase of contract performance shall "make timely provision for the skills required for assuring product quality."

Electric Boat Division over the past two and one-half years has developed and implemented four separate formal training programs for Operations and Quality Assurance foremen.

(a) The first training module included 48 hours of classroom presentations covering the following subjects: diagnostic exercise, Electric Boat's role, safety, radiation control, motivation/leadership, planning/cost, communications, absenteeism/attrition control, labor relations, quality assurance, management self-analysis, personnel performance evaluation, submarine computer oriented management system (SUBCOMS). The program concluded with a meeting

with top management. Since its inception, this training module has been completed by 1,270 people.

(b) The second training module given in 1979 was a one-day classroom presentation on the importance of quality and the importance of integrity in the individual's performance. It was presented to approximately 1,286 people.

(c) The third module included eight hours of classroom presentations applicable to teamwork between Operations and Quality Assurance foremen. Many case studies were reviewed in the development of the teamwork concepts. This module has been completed by 111 people.

(d) Electric Boat Division has instituted a Career Development Program to recruit and train highly motivated degreed engineers in order to improve the quality, productivity, and technical capability of Operations and Quality Assurance supervision. The Career Development Program includes the following training modules: one week, indoctrination; four weeks, trade training; six weeks, production projects; one week, supervisory training and submarine systems; four weeks, supervisory on-the-job production; and eighteen months, rotating supervisory assignments, including quality assurance. This program, which began in January 1978, is building a nucleus of first-line supervisors highly qualified in a wide variety of shipyard trade and technical management capabilities. Upon completion of the program, these individuals are being assigned as qualified, well-trained first-line supervisors in Operations and Quality Assurance. As of the present time, 105 people have completed or are in various stages of the program. The program has been so successful that four graduates have already advanced to the position of general foreman.

(3) Section 3.3 of MIL-Q-9858A - Work Instructions - Requires the quality program to assure that all work affecting quality shall be prescribed in clear and complete documented instructions of a type appropriate to the circumstances.

The trade work instructions previously issued at Electric Boat Division were generated by a Production Control Department which was separate from both Engineering and Operations. The work instructions known as "group paper" were normally issued far in advance of actual performance of the work, with the result that numerous change notices to the group paper were often required due to design data revisions and change orders. This resulted in a burdensome paper system and a configuration control problem.

In early 1978, Electric Boat began a comprehensive new program (SUBCOMS) to consolidate and markedly improve existing management and performance measurement systems. The systems in place at that time were functional, and did meet contractual requirements, but were identified as areas where improvements would yield significant and lasting benefits.

With that in mind, a thorough evaluation was performed, and an integrated, modern, computerized system was developed to schedule, budget, authorize, and measure work down to the level of the first line foreman. Using basic data ranging from daily employee time cards to ship construction drawings, the new system provides the shipyard with detailed, current work instructions which identify processes and quality assurance criteria, as well as material identity and quantities. The system also provides an accurate status of all work in process, provides for visibility and accountability at the foreman level, and at each of the successive levels of supervision in the management hierarchy.

The SUBCOMS process starts with a Work Breakdown Structure which divides each submarine into production work units based on construction drawing requirements. In the development process, each production work unit is defined, scheduled, budgeted, and assigned to the lead trade responsible for managing that work unit. This data is fed by hull into a computerized Work Authorization File (WAF), together with a listing of the appropriate material-bearing construction drawings for each work authorization.

Material requirements are identified, quantified, and scheduled by hull in the Engineering Plan Product Structure File by the WAF to ensure that the trades have available the correct material in sufficient time to support completion of each job within the schedules assigned in the WAF.

Each individual work authorization has a specific scope of work as defined by the construction drawings. Each work authorization is assigned, down through the lead trade organizational hierarchy, to a specific foreman who has overall responsibility for ensuring performance of the work in accordance with applicable construction drawings, procedures and specifications.

Construction progress is reported by the responsible production trade foreman and supporting departments at the work authorization level twice each accounting month. It is then compared to the schedule and budget data in the WAF and computerized reports are produced for use by all levels of management. This allows timely

and accurate assessment of physical construction progress, schedule performance, and labor performance to budget. One element of SUBCOMS created a planning and control system within the Operations Department. Under each general superintendent in the shipyard, both central and satellite planning groups were created. The central planning group prepares the necessary work instructions generally four months in advance of performance of the work in order to minimize changes due to engineering revisions. This central planning group also forms the core element of planning under the general superintendent. The satellite planning groups work directly with the foremen and general foremen to plan our detailed week-to-week packages for each foreman, to assess the detailed manpower requirements by foreman and to assess progress at the individual work authorization level. These two planning functions provide the shipyard trade organization with the necessary tools to provide the work instructions and controls to insure that the work is performed in an orderly fashion and to identify any special instructions that may be required for supervising, inspecting, and managing the work.

(4) Section 3.4 of MIL-Q-9858A - Records - Requires the maintenance of records of data essential to the economical and effective operation of our quality program and requires that those records provide the basis for management actions.

(a) The Test Records section at Electric Boat Division has been operating in essentially the same manner for the past 25 years. The transactions that take place involve tens of thousands of items for every submarine. The system is manual and heavily dependent upon the accuracy of clerical personnel. In 1978, Electric Boat Division initiated a long range program to computerize our Test and Quality Assurance records systems to be interactive with on-line capabilities. Phase I was to convert the entire operation of the Test Records organization and to further expand accountability to cover items that were previously not specifically covered. Phase II will expand this system and computerize Quality Assurance records in an integrated manner. This new program, known as the Shipyard Discrepancy Control System, was developed at our own initiative and is the first module of our on-going commitment to upgrading our Quality Assurance systems to take full advantage of today's computer technology. The system is now becoming operational; within the next few months, all of the Test Records work should be transferred to it. This should significantly reduce the risk of inaccuracy due to clerical error, provide a fast response system with improved productivity, and minimize the costly hand tabulating work. This system will include a status account by each submarine of the following documents: Test Inspection Reports (INSATS), Contractor-Furnished Equipment Reports (Electric Boat

Rejections), Government-Furnished Equipment Reports (Rejections of Government-Furnished Material) and SUPSHIP-originated Quality Deficiency Records. Thus, all discrepancies for each submarine will, by computer, be readily identified for status and timely resolution.

It should be emphasized that the Shipyard Discrepancy Control System (SDCS) was initiated by Electric Boat in 1978, well before the carbon steel and welding inspection matters came to light. The SDCS is clearly a part of Electric Boat's ongoing approach to upgrading its quality systems, and not a reaction to specific problems.

(b) Electric Boat Division, in order to improve the control and accountability of structural rework that requires nondestructive testing, developed in October, 1979 Quality Assurance Cut Chit and Crack Report Logs as a measure for maintaining record integrity. A quality assurance log number is assigned to each structural cut chit used for rework and also to each crack report issued as a result of Magnetic Particle Test (MT) findings. Cut chits and crack reports each have their own separate log. In order to maintain proper traceability, pertinent data for each of these quality assurance logs is entered when the control number is issued. This data includes cut chit or crack report number, drawing number, badge number of person requesting the work, etc. When the necessary rework and required nondestructive testing is completed-- as indicated by the proper inspection signoff of cut chit/crack report--the item is closed in the log book. The logs provide history and status, as well as enhancing record integrity. Periodic reports developed from these logs keep both Operations and Quality Assurance departments aware of their outstanding responsibilities in these areas.

(c) In order to improve a contractually-required Post Installation Material Verification (PIMV) program in a technically accurate and an efficient manner, Quality Assurance in 1978 developed PIMV drawings for utilization by the inspectors. Weld Joint Identification Drawings for all sea-connected and/or Level I systems are modified by Quality Assurance to identify the correct material for all pipe, welds, fittings, and valve components. Data from records of inspections verified in the shops are transferred to the drawings. After the material is installed, inspection, using material verification equipment, performs material verification to an approved procedure and records the results on the PIMV record drawing. These record drawings facilitate accountability and status of the contractually required PIMV.

(d) In April, 1979, an Unsat Closeout Review was instituted by Quality Assurance Engineering to provide a detailed review of all completed Test Inspection Reports (TIR's), to ensure that all cleared (closed) items are properly documented. This is primarily a software check to ensure that TIR items and clearance forms are in technical agreement, including the completion of the correct nondestructive testing, if required. A special review is made of referenced Engineering Notices (EN's) to ensure that they are applicable. If the data is found to be correct, the Quality Assurance Engineering representative signs and dates the status TIR copy. As appropriate, a physical inspection is made by the Inspection Department to ensure that hardware listed on the Test Inspection Report (TIR) meets drawing and/or specification requirements prior to being closed out (cleared).

(5) Section 3.5 of MIL-O-9858A - Corrective Action - Requires that the quality program shall detect promptly and correct assignable conditions adverse to quality. Corrective action shall include analysis of scrap and rework data, trends in processes and monitoring the effectiveness of improvements and corrections.

We believe that in order to have an effective and economical corrective action program, it must be integrated with the Contractor's other administrative and technical programs.

(a) The objective of a corrective action program is to assist in achieving production of a quality product on time and at reasonable cost. Electric Boat's approach to the accomplishment of this objective can be summed up in the simple term "personal accountability." Through the three-part program outlined below, consisting of (1) budget/schedule performance, (2) performance related to process control, and (3) defect analysis, Electric Boat is able to establish personal accountability for the cost and quality of work performed, at all levels of the organization from the tradesman to the first-line foreman up through the Assistant General Manager with functional responsibility for the work item. The defect analysis effort, as it pertains to vendor-furnished items, is a useful tool in managing our purchasing and material activities.

An outline of each part of the three part program is set forth below.

(1) Budget/Schedule Performance. As part of the SUBCOMS Program described in Section IV A(3) above, all departments accomplish work to assigned schedule-related budgets. Direct labor hours are collected from individual time cards. Labor for repair or rework is charged to code "R." Replacement material is charged to weight account 191 or 192 and costs collected. Rework labor

and material cost data is collected at the foreman level and reviewed monthly. Significant variances from budgets or schedules are reviewed by top management and corrective action is taken as required. As part of our Submarine SUBCOMS Program, the Job Manager Team identifies to the responsible managers significant or recurring production problems which exceed their capability to correct. This part of the contractor's program is monitored and action to correct adverse conditions or trends is taken on the basis of various reports and charts. This management program, coupled with assistance, additional training or, when necessary, removal from the work of a tradesman who continues to experience excessive amounts of rework, has been of major benefit to Electric Boat in its continuing efforts to reduce rework to a minimum.

(2) Process Control. Preplanned receiving, machine shop, structural, shielding, and piping inspections and predefined surveillance inspections are performed by Inspection. Reports of the results of unacceptable work are made on Rejections, Controlled Inspection Chits, and other documents. Inspection reports are analyzed for preventive action by various departments. Welding Engineering and other groups provide technical support to production supervision for fabrication of major structural weldments, controlled (RT) structural/piping processes, and other areas as problems are identified. Process areas are monitored and corrective action recommended on the basis of weekly/monthly reports. A prime example of the results accomplished in improving structural weld quality by our approach to process control is discussed in paragraph (b) below.

(3) Defect Analysis. Rejection reports of work performed by Electric Boat are reviewed daily and recommendations for corrective action by the cognizant department are made on a case basis. Semi-annually, a review of these rejection reports is performed, by drawing, to identify trends and corrective action is taken to resolve significant repetitive problem areas. Similarly, in the case of purchased items, reports of vendor-responsible rejections are reviewed daily and recommendations for corrective action are made as appropriate. A periodic review is also made of computer-tabulated data of vendor-responsible rejections in order to identify trends so that corrective action which may be required by vendors can be identified and initiated. In addition, receiving inspection rejection rates are monitored. This defect analysis program assists us in establishing personal accountability for rejected work performed by Electric Boat personnel and in assuring that Electric Boat's vendors maintain the specified levels of quality.

(b) In October 1977, Electric Boat Division as a result analysis of data and trends in structural welding performance

as determined by radiography, implemented a program to improve structural welding performance. The program had two main objectives:

- Reduce the radiographic rejection rate and inherent rework costs.
- Increase the weld quality by increased use of mechanized welding processes.

The seven-points in the effort to reduce the radiographic rejection rate were as follows:

- Improved compliance of welders and welding foremen with process technique requirements, including verification of defect removal. Electric Boat also put into effect a specialized welding foreman training program on welding techniques, with emphasis on automatic and semi-automatic processes.
- A controlled repair assignment practice was adopted that assures traceability of recurring defects to a specific welder.
- Performance data have been issued weekly to welding, welding engineering, and management personnel to assure prompt corrective action.
- Welding engineers were assigned to review rejections on a daily basis and provide appropriate technical support to the cognizant welding foreman.
- Ultrasonic evaluation of depth of defect is being used for all repairs, resulting in clear direction to the carbon arc gouge operators as to the location and from which side to excavate the defect.
- On second repairs radiography is being used to provide information shots to the trades to assure defect removal prior to rewelding.
- Welders, carbon arc gougers and UT operators are being retrained as found necessary.

For the third quarter of 1977, the structural radiographic rejection rate (initial evaluations) was 17.7% and the repair rejection rate was 28.8%. For the first quarter of 1980, due to a large measure to the efforts described above, these rates were

reduced 64% and 35%, respectively. They were 6.3% for initial evaluations and 18.8% for repairs.

In increasing the usage of mechanized welding, initial efforts were dedicated to hull butts and other major weldments such as patches and inserts. A coordinated program between Quality Assurance Engineering, Steel Trades and Welding Engineering resulted in increased mechanization through the use of single beveled weld joint designs used in conjunction with ceramic backing materials. This approach maximizes the accessible portion of these welds for mechanization and minimizes the amount of manual welding. For these welds (hull butts, patches and inserts), an increase in mechanization of about 25% has occurred, substantially contributing to improved quality. This effort is continuing and being extended to internal connections such as intercostals and tank connections. Welding Engineering, in conjunction with the trades, is continuously reviewing process operations for potential conversion to mechanized techniques to reduce the human factors in manual operations.

Electric Boat Division has been aggressively working with NAVSEA personnel on an HY80 Structural Weldment Test Program that has demonstrated the suitability and serviceability of using higher heat input (up to 100,000 joules per inch) for gas metal arc and submerged arc welding processes. The authorization of higher heat input welding of HY80 will substantially contribute to improving the quality of structural welding, particularly when applied to one-sided welding techniques utilizing ceramic backing materials.

(c) A program similar to that mentioned above was also developed for pipe welding to reduce radiographic rejection rates for repair welding. A concentrated effort was applied to repair welding because of the high rejection rates existing in 1977. At that time, the piping radiographic rejection rate was 43.7%. First quarter 1980 results indicate a 41% reduction in the repair rejection rate to 25.6%. A planned program to increase the automatic orbital welding of pipe field joints has been implemented and has resulted in a 282% increase in the number of joints welded orbitally since 1977. We believe that our management actions are largely responsible for these improvements and that further improvement of pipe welding can be anticipated.

(d) Historically, submarines have been built using an outdated method of manufacturing and assembling the basic hull structure. Although this is clearly one of the most critical elements of a submarine, methods of construction have remained relatively unchanged since the first welded-hull submarine was built in 1933. The fabrication process for hull cylinders and

frames was heavily labor-intensive and generally required use of the full engineering tolerances allowed. It also resulted in dimensional variations which had to be corrected in later operations, often at sizable cost. Applying the most advanced technology available, Electric Boat has recently placed in operation an entirely new automated facility designed to manufacture hull cylinders and frames of the highest quality in an efficient and economical manner. The facility, which represents a General Dynamics investment in excess of \$100 million, can manufacture and assemble hull cylinders and frames with dimensional accuracy and repeatable results for hull diameters between 27 feet and 42 feet. With all welding fully automatic and with simplified fit-up, the hull cylinders and frames produced by this facility will be of a quality level which was not previously achievable. With dimensional accuracy and repeatability of hull cylinders and frames, shipboard installations which attach to the hull and frames will be accomplished with significantly reduced rework. The initial data upon startup of this new automated facility shows a 336% improvement in structural welding performance as determined by magnetic particle inspection.

(6) Section 3.6 of MIL-O-9858A - Costs Related to Quality - Requires the maintenance and use of quality cost data as a management element of the Quality Program.

(a) A key improvement feature resulting from implementation of the SUBCOMS program described in Section IV A(3) above is the cost data visibility on work performed at all levels of management from the individual foreman up to the cognizant Assistant General Manager.

Such cost visibility enables management to focus attention promptly on jobs which are not achieving scheduled performance or are a predetermined amount over their budget. If the problem is identified as one caused by performance difficulties on the part of a foreman, he can now be given such instructions, additional training or other assistance as may be necessary to resolve the problem. If the cause of the problem is determined to be of a different nature, it can then be addressed by the appropriate levels of company management.

Some of the quality cost data features of SUBCOMS follow.

(1) The Labor Timecard System. The traditional use of the labor timecard and its historical use at Electric Boat Division was simply as a means to verify employee attendance as the basis for payment of wages. Timecards did not identify an employee to a precise work assignment. Work performed was documented by Electric Boat by a second record called a time sheet, which

was completed by the supervisor after the fact. Under SUBCOMS supervisors are required to indicate work assignments directly on the time card and to certify the employee's time against those assignments. The present system uses one document, the labor timecard, both to pay the employee and to specifically identify the work. This provides traceability as to what was worked by each individual and the name of the foreman involved. All time charges are now traced to a particular foreman.

(2) The Labor Performance Reporting System. The Labor Performance Reporting System was similarly overhauled. Today's system provides a performance measuring capability to the foreman level. Performance data is available in both home department and lead trade. The correlation between reports through the several levels of summary reports is accurate and reliable. Report formats are common across the Division. Reports are distributed timely (twice each month) and are the basis for management evaluation and action.

This new system permits management to identify very rapidly the source of rework costs to the individual foreman involved. As an indication of the effectiveness of this system as a management tool for many purposes, including the control of rework, it is noteworthy that, this system has been validated as meeting the requirements of DODI 7000.2.

(7) Section 4.1 of MIL-Q-9858A - Drawing, Documents and Changes - Addresses the completeness and currency of drawings and the control of design changes.

a. In the process of streamlining reporting systems and computerizing test records, we identified the ability to apply these techniques to modernization of our configuration control system. We assigned this function to Engineering in 1978. Configuration Control is now an identifiable organizational entity within Engineering. It reviews every work authorization completion report to assure that the work is performed to the proper requirements for each submarine under construction. Each work authorization is signed off by the lead trade foreman involved and he certifies the plans and other design instructions that were actually used in the performance of that work. The final closeout is not achieved until configuration verification is made by the Engineering configuration management organization.

b. As a further refinement to this system, all plans, engineering data and work authorizations are being coded to identify prerequisites to certain major key event evolutions in the construction and testing work. As a result of coding, Engineering will be

able to rapidly determine, again using the computer, the status of all prerequisite requirements.

(8) Section 6.1 of MIL-Q-9858A - Materials and Material Control - Addresses material receivers, receiving inspection, material identification, storage and control.

(a) The design and implementation of SUBCOMS brought about beneficial changes to our material control system. An integrated bill of material was prepared for the Trident and SSN 688 Class submarines. This substantially improved our system for determining that the material requirements specified by a drawing had been satisfied by a purchasing or manufacturing commitment or from inventory.

(b) In January, 1978, we directed the first wall-to-wall inventory conducted at Electric Boat in the last 25 years. The inventory identified considerable material previously thought lost and also purged the shipyard of excess or otherwise unusable materials. Most important, the inventory provided us with an accurate and current list of materials on hand. By balancing the results of the inventory, the integrated bill of materials, and the purchasing and manufacturing commitment, a comprehensive material control status is now available.

(c) In addition, a material requisition validation procedure has been implemented. Now, prior to material issue, each requisition is validated against its planned use and against the inventory control system. Once material has been issued for an authorized and planned use, additional material cannot be issued unless accompanied by an acceptable justification.

(d) Electric Boat has also made significant improvements in its material storage and handling facilities. The most significant of such improvements involved the rebuilding of two bays in the former fabrication building at Midway and the installation of a modern, high-density, high-bay storage area. A dozen racks 40 feet high and 242 feet long were built to be serviced from six aisles. Servicing these racks are three high-reach lift trucks and a unique conveyor system with air-operated material transfer stations to handle pallets and provide material selection at ground level.

These material control system improvements have reduced the possibility of material errors and have enhanced our overall quality program.

(9) Section 6.3 of MIL-Q-9858A - Completed Item Inspection and Testing - The quality program shall assure that there is a system for final inspection and test of completed products.

In 1978 Electric Boat developed checklists to be used by trade supervisors in conducting their own inspections of systems under their cognizance prior to testing (Phase I) and prior to operational control transfer (Phase II). These checklists contain typical deficiencies, developed through analysis of large number of inspection records, which the trade supervisors are thus alerted to look for in making their own inspections.

Trade supervisors in Operations are responsible for performing an item-by-item check of each system under their cognizance prior to presentation of a system or portion of a system for pretest inspection (Phase I) and prior to operational control transfer of a system (Phase II). After Operations supervision has concluded that a system is satisfactory and has signed the Phase I or Phase II checklist, Quality Assurance Inspection then makes an inspection of the system. If an excessive number of deficiencies are found as the inspection proceeds, the Inspection general foreman has the authority to terminate the inspection and turn the system back to Operations for completion of necessary work in a proper manner before the inspection will be resumed. Such a turn-back to Operations generates action from higher levels of management.

This program identifies the most common problem areas to the cognizant trade supervisors and requires that they focus their attention on such areas before presenting a system to Inspection as satisfactory. It also properly emphasizes the responsibility of the Operations organization for production of a quality item and the responsibility of the Quality Assurance organization for verification of quality.

(10) Section 6.5 of MIL-Q-9858A - Nonconforming Material - Addresses nonconforming material identification, segregation and disposition. The contractor shall establish and maintain an effective and positive system for controlling nonconforming material, including procedures for identification, segregation and disposition.

As part of its continuing upgrade and modernization program, Electric Boat in 1978 developed a computerized Material Identification and Control (MIC) File. This file provides ready reference from the MIC number to other pertinent data, such as purchase order number, heat number, serial numbers (if applicable), part number, nondestructive testing requirements, etc. This file may be sorted by any of the above attributes to assist in Level I certification efforts. It can also be used to provide valuable assistance during problem investigations.

We believe that the measures taken by Electric Boat to strengthen and improve its total quality program over the past two and one-half years, as briefly described above, constitute compelling evidence of Electric Boat's continuing commitment to build submarines of the highest quality for the Navy.

B. CARBON STEEL

The allegation in reference (a) that the carbon steel situation is a result of Electric Boat taking only the actions necessary to correct specific reported incidents without delving deeper to determine the full scope of the problem is incorrect. We must point out that the carbon steel situation was one which had existed for many years, was not unique to Electric Boat, and had previously gone undetected by us or the Navy. In view of these circumstances, we believe that our detection of this situation within the past year indicates the results of the improvements we have made in our systems and the increasing effectiveness of our quality assurance practices. We also believe that a summary of the background of the carbon steel matter and the steps we took to respond to it will clarify any mistaken impressions which may exist as to the thoroughness with which we approached this problem.

The nonconforming carbon steel material problem was uncovered by an Electric Boat Procurement Quality Control audit of warehouse material conducted in November 1978. The initial determination was that five sizes of carbon steel bar stock had chemical properties not in accordance with purchase order requirements (QQ-S-741D). A review of the purchase order file at Receiving Inspection indicated that in some cases the chemical test reports supplied with the material were inaccurate while in other cases the material was accepted even though the chemical test reports showed that it did not meet the purchase order requirements. A further review of other purchase orders from that supplier, and purchase orders for similar commodities from other vendors, raised a concern regarding M1020 appearing as a heat number on material test reports submitted by the supplier. As a result of these concerns, a complete investigation was conducted of all 622 purchase orders for QQ-S-741D steel received from 1970 to 1979, involving 6100 tons of material. This investigation revealed that discrepant material had been received by Electric Boat during the period between the third quarter of 1970 and the third quarter of 1977. The investigation also identified the fact that there was not just one problem but multiple problems that had gone undetected for years. As noted above, we consider our detection of these problems to be evidence of the improvements made in our quality assurance system during the past two and one-half years, rather than evidence of failure of the system. Causes of this problem were determined to be:

- . Personnel errors at Receiving Inspection.
- . MIL Spec. QQ-S-741D does not require mechanical and test reports to be provided by the supplier.
- . Chemical test reports provided did not represent the material provided.
- . Steel mill practice of providing industry M1020 for QQ-S-741D.
- . Distributors providing single test reports for comingled heats.

Actions taken to identify and correct the specific problems have been discussed in detail in prior correspondence. A summary of actions taken to correct the specific problems and preclude recurrence is as follows:

- . Definition of all part numbers having potentially nonconforming material.
- . Physical removal out of stock of all potentially nonconforming material.
- . Segregation, fencing and control of the physically removed material.
- . Establishment of requirements for certification of future raw material procurements with traceability to mill certifications.
- . Procurement of raw materials in accordance with the new requirements, including American Bureau of Shipping (ABS) certification at mills and distributors.
- . Screening of those finished parts manufactured from the possibly discrepant material which had not been installed at the time approval was granted to prevent further installation of nonconforming QQ-S-741D materials.
- . Procurement Quality Assurance personnel were reinstructed in the requirements of Receiving Inspection, including the necessity for a careful review of software as well as the material itself. They were also retrained in the importance of preventing nonconforming products from being inadvertently allowed into the shipyard.

In addition to the above, Electric Boat has made an in-depth review of our Receiving Inspection instructions to determine the adequacy of requirements for independent tests to verify material specification requirements. All testing required by contract/specifications was being performed. Nevertheless we decided to increase the amount of laboratory testing in both nuclear and nonnuclear receiving inspection so that material from each active vendor of bar stock, pipe, tubing, fasteners, and fittings is required to be tested at least once a year. The first three lots from a new vendor will be tested and the continued frequency of testing will not be less than one in twenty.

Finally, Electric Boat has also reviewed over 10,000 carbon steel raw material receiving reports for 879 purchase orders and 59,700 tons of material received for ten additional raw material specifications in order to satisfy itself that a condition similar to that found with QQ-S-741D did not exist in other carbon steel raw materials.

C. STRUCTURAL WELDING

As in the case of the carbon steel situation, we must take issue with the allegation in reference (a) that the structural welding problems encountered are manifestations of failure in Electric Boat's quality program. As with the carbon steel matter, the situation had existed for a substantial period of time and had gone undetected by either Electric Boat's or the Navy's quality assurance activities.

Our investigation evolved from two audit findings, one by SUPSHIP personnel and one by Electric Boat personnel. The sequence of those investigations was described at length in our March 10 presentation and as enclosure (1) to our March 20, 1980 letter reporting the status of our program. We believe that we conducted an investigation of proper scope and depth. Where the investigation disclosed the existence of additional problems, the scope of the investigation was expanded to include those problem areas.

1. In parallel with our investigation, Electric Boat also initiated action to minimize the possibility of recurrence of similar problems in the future.

A survey of quality assurance supervision has been made and an outline prepared of areas where supportive training should be considered. As a result, the following specifically focused

training efforts were instituted to supplement and reinforce the training programs already in existence at Electric Boat.

. A "Productive Quality" training course has been started. This course includes 84 key supervision and salaried personnel from the Quality Assurance organization and an equal number of management personnel from Operations. The course stresses the joint responsibilities of both organizations for product quality on time and within budget.

. A separate qualification training program and qualification examination for visual inspection of structural welds has been established. At this time, 54 newly hired structural inspectors and 48 inspectors on roll as of January 1, 1980, have been trained and qualified.

. Surveys of inspector capabilities have been conducted and some selective retraining based on those surveys has been initiated. Refresher and initial training has been conducted for 65 inspectors in the area of structural blueprint reading. Evaluation of additional training requirements will be conducted and programs developed based on continuing needs.

. A specialized quality training group has been established in the Education Department. A supervisor has been appointed and two instructors are being acquired.

. Programs have been developed for Procurement Quality Assurance personnel covering the total responsibilities of the department and also to broaden the capabilities of receiving inspectors.

2. A program to expand structural audits has been initiated which increases the number of audits performed and attributes checked so as to provide still greater confidence that work is being performed and inspected properly.

3. Electric Boat is accelerating its long range program to computerize its Quality Assurance records systems which will include improved accountability of structural welds requiring MT records. Initial MT records have been loaded for 698/699 and 700 to provide for maximum computer utilization concurrent with final system design. Independent of this effort, the central trade planning organizations have generated addendum sheets to the trade work instructions which identify and provide space for quality assurance sign-off of NDT attributes or verifications by the lead trade that NDT is complete, thereby integrating each MT inspection with the work instructions.

4. In addition, in the absence of an SSN 688 Class Type II (SUBSAFE) MT certification list, from the Design Agent, Electric Boat has prepared such a list. This list is now being used to assure full documentation of these welds.

V. Quality Program Upgrade and Modernization.

In addition to the improvements made in Electric Boat's total quality program since 1977 and in addition to the steps taken since the beginning of 1980 to respond to the structural welding matter, Electric Boat also formulated in February, 1980, a comprehensive quality program upgrade and modernization as part of its ongoing determination to build and deliver to the Navy submarines which fully meet quality requirements. This program is designed to review, analyze and further upgrade and modernize specific areas pertaining to quality. It is focused on four separate but interrelated areas. These are:

- . Review of quality functions and requirements.
- . Review and update of quality procedures and documentation.
- . Systems analysis and development.
- . Training enhancement and personnel development.

In developing and implementing this program, we are making use of the expertise and advice of nationally recognized outside consultants familiar with quality systems and with Navy shipbuilding specifications and requirements. It is anticipated that these efforts will continue throughout 1980 and as specific improvements are identified, they will be implemented. Results to date are that we have instituted, a comprehensive program to train, both initially and on a repetitive refresher basis, all levels of personnel in our quality organization. This comprehensive program embodies approximately 26 discrete training modules and reflects the advice of our consultants after their in-depth assessment of our training posture and needs. This particular area of the quality modernization program is planned to reinforce the professional and technical capabilities of our personnel and take full advantage of the state-of-the-art in quality training.

VI. Conclusions.

We have prepared this extensive and detailed response to reference (a) because of the importance which we attach to our commitment

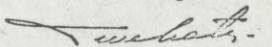
to the quality of submarines. This commitment has always been firm and unequivocal and is currently being carried out in a manner which is more effective than ever before.

As we have stated before, we are convinced that Electric Boat's quality program has been in compliance with the requirements of MIL-Q-9858A since 1969 when the transition from MIL-I-45208A to MIL-Q-9858A at Electric Boat was made and Electric Boat's quality program was accepted by the Navy as meeting the requirements of the new specification. We are also convinced that the actions which we have taken over the past two and one-half years have strengthened, upgraded and modernized Electric Boat's quality program and enhanced its effectiveness. We are confident that, after reviewing what we have done as well as what we plan to do, the Navy will agree that Electric Boat remains committed to the construction of quality submarines and has been taking, and is continuing to take, effective measures to fulfill this commitment.

In our view, an optimum quality program should include the following three elements: (1) a fresh look from time to time at the fundamental features of the quality program, such as organizational structure and procedures, to see if they are still suitable for current conditions; (2) utilization of the most advanced technological and management tools available, including computer technology for information collection, analysis and presentation; and (3) prompt modification of controls, training, procedures, and the like, to obtain the benefits of lessons learned from problems encountered. Our program includes these key elements. For example, in late 1977, we took a fresh look at certain features of the quality program and made changes, such as in the organizational structure, and we are taking another such look now. As to the use of advanced technology, we are now making much more extensive use of computerized data using an integrated, common data base than was the case in earlier years. We expect to expand such use in future years. We have also used advanced technology to improve quality and reduce cost in the manufacture and assembly of hull cylinders and frames by our new automated facility at Quonset Point. And as for taking action as a result of lessons learned, the actions we took in response to the carbon steel matter and the structural welding situation speak for themselves.

Throughout its long association with the Navy, Electric Boat has had a commitment to technical excellence and quality in the submarines it designs and builds. This commitment remains intact and, as we have indicated, we are constantly seeking better ways to fulfill it. To assist us in this regard, we would greatly appreciate being advised of any specific recommendations or suggestions which the Navy might have as to how we could more effectively carry out the quality functions provided in our shipbuilding contracts.

Sincerely,



P. T. Veliotis
General Manager

Mr. EMERY. Have you had any discussions with labor at the yard in order to determine what role organized labor might be able to play in improving productivity and quality control?

Admiral WEBBER. No, sir, we have not. It is not our normal practice to deal directly with labor unions. Our contract, of course, is with the management of the company.

Mr. EMERY. Then what I ought to pursue is maybe not that line of questioning, but ask you whether or not you have been able to identify problems with labor, not with labor unions per se, but in the caliber of workmanship and reliability of workmanship. Is that a problem or is it not a problem?

Admiral WEBBER. It has been a problem, yes, sir, stemming back to the days that Electric Boat expanded their work force very rapidly. When you do that you bring on a large number of untrained people. It takes several years for that labor force to mature, to learn the skills necessary to accomplish the work properly.

Mr. EMERY. If I remember correctly, as I remember it 2 or 3 years ago there was a major scandal where there were drug rings and theft rings, and all sorts of other things going on in the shipyard, which were partially caused by a good many people who were not familiar with shipyard procedures and practices who, in fact, were hired by the company.

Admiral WEBBER. Yes, sir. Their labor force over the last 2 or 3 years has been stabilized somewhat.

Mr. EMERY. Under the normal practices that are accepted in law and in custom have the unions been able to police their own ranks more effectively so that they are providing a higher quality of worker or workmanship?

Admiral WEBBER. I am not in a position to answer that. I have no direct information which would indicate the policing that the unions have been able to supply.

Mr. EMERY. The only reason that I'm asking this is, first of all, we need to determine whether or not the work force is adequately competent, and, second of all, if it is not we need to guarantee that the people who are working in the yards have the skills necessary to do the job to which they've been assigned. I think that's probably a very important point to be made.

The second point that I would like to ask about with regard to the problem with steel that we discussed a few minutes ago and other areas where equipment provided or materials provided were apparently not those that were specified, have you been able to determine whether or not there was a willful and intentional attempt to defraud the Government, or was it merely some sort of an oversight or an accident or a result of management incompetence?

Admiral WEBBER. I have not seen any direct evidence of a willful intent to defraud the Government in this matter. The material was delivered to Electric Boat; it was not properly checked on receipt; and it found its way into a large quantity of carbon steel stock in the yard. From there, it found its way into the submarines. But so far we have found no evidence of a willful intent on the part of Electric Boat management to defraud the Government.

Mr. EMERY. Have you identified cases where the submarine components or assembly of the submarines was incorrectly completed?

I suppose there are a certain number of routine mistakes in any shipbuilding program.

Admiral WEBBER. Yes, sir.

Mr. EMERY. Have you been able to identify indications that this was a general pattern, maybe done to make the job easier and maybe less costly, as opposed to the way it was specified?

Admiral WEBBER. The errors that we found have been more a lack of proper inspection and proper checking. I have no direct knowledge of any willful intent on the part of the shipbuilder to try to cut corners in order to save money.

There has been a great emphasis recently by Electric Boat management on meeting schedules, and on trying to push production.

Mr. EMERY. Of course, that's failed abysmally.

Admiral WEBBER. Yes, sir. Primarily that failure has occurred because inspection and quality control has not been satisfactory to guarantee a proper product. So then Electric Boat had to stop and go back and correct a large number of errors, rather than making the installation properly the first time.

Mr. EMERY. So essentially what you're telling me is that they had a hurry up attitude toward the job that was being done and that it was a management decision to deemphasize checking quality control, testing, and things of that nature, that would guarantee that the job was done correctly the first time.

Admiral WEBBER. I think that's a fair characterization.

Mr. EMERY. But that must have been a willful management decision, which was against the contracting rules, against the procedures specified by the supervisor of shipbuilding.

Admiral WEBBER. It was, in my opinion, evidence of an attitude on the part of management to press production. I have not seen anything where they willfully made a decision to not meet this or that specification. I think it's more one of emphasis. By overemphasizing the productive aspects, the inspection and correctness of the installation has not had enough emphasis to prevent mistakes from being made by the workers and inspectors.

Mr. EMERY. I'm not going to belabor this line of questioning too much more. I know my colleague from Pennsylvania would like to ask some questions.

I do want to draw a couple of conclusions.

First of all, it's very clear to me that if we grant this reprogramming we may well be encouraging, if I can call it, a domino theory at Electric Boat, which will mean further problems and further delays which will just compound the problem, and we may be sitting on a much larger problem than we can solve by one reprogramming for the convenience of this particular situation.

I would feel much more comfortable if we had a very thorough review of these two reviews, the Electric Boat review and your review, so that we would have a much better idea in this committee of the sorts of problems that Electric Boat is facing and have a better idea in our own minds whether these were Navy problems, whether they were contractor problems, whether they were internal problems in the structure or operation of the shipyard, and we might be able to draw the conclusion whether or not Electric Boat was simply in over its head, maybe they were doing too many

things, or maybe they just simply are not capable of doing all this work at the same time.

I also have some problems that have nagged me since the first time I heard of this relating to the possibility of some cost cutting or use of inferior materials that may, in fact, be illegal, and I am not satisfied in my own mind that that has not happened. I'm not sure it's worth pursuing to any great extent because I haven't seen the facts. But I think we ought to ask those questions.

I have no further questions at this point. But I do repeat the request that I made earlier, that you provide us with this material relating to the Electric Boat review of quality control and your review. I feel that that would be a very appropriate subject for a more lengthy hearing.

I would also ask that when it is appropriate this subcommittee invite Electric Boat management to spend some time with us so we can ask them some of these same questions and review their quality control procedures.

Thank you, Mr. Chairman. I have no further questions.

Mr. BENNETT. Thank you, Mr. Emery.

Mr. Dougherty.

Mr. DOUGHERTY. Yes. Thank you, Mr. Chairman.

Admiral, how critical is the timing on this reprogramming?

Admiral WEBBER. We will need to complete the reprogramming by late next year, Mr. Dougherty.

Mr. DOUGHERTY. Following on the comments of my colleague from Maine and for the benefit of the chairman, I have a lot of questions I want to ask, and I will ask. But I think I would like to go on record first saying I would strongly urge the chairman to consider tabling this reprogramming request until the subcommittee has a full-fledged hearing on the entire situation.

I think you're being very nice today, Admiral. I'm not trying to put you down or anything like that, but I think you're being very nice. I get the impression—and I'm getting agitated sitting here—that we're sitting on a bomb. You have a situation where in a very nice way you're telling us that we're involved in what will probably be a classic overrun case similar to Newport News because you're taking the reprogramming money here and you're going to pay off some problems that maintain in previous boats, if I understand it correctly. Is that correct?

Admiral WEBBER. The reprogramming is to restore funds which were taken from the Trident program for a Newport News claim.

Mr. DOUGHERTY. Yes. But they were basically to take care of costs that came out of previous fiscal year contracts involving Trident. Is that correct?

Admiral WEBBER. No.

I'll let you answer that.

Captain MILLIGAN. I would like to bring up the point that we don't really know what we will get in the Appropriations Act for fiscal year 1981 with regard to transfer authority in section 734, which may mean that September 30 we may not have the flexibility to make this reprogramming possible in fiscal year 1981.

You may recall that since fiscal 1979 we have not been able to transfer funds between years and between appropriations in prior year accounts, and in the case of the shipbuilding, where we are

appropriated on a line item basis, we have not been able to transfer funds even within the same year within the same appropriation between different line items.

Now, there is language or a general provision in the fiscal year 1980 supplemental that does say they have taken the barriers down between line items within the SCN appropriations, and I would have to get a legal opinion as to whether or not that will carry forward in fiscal year 1981 to allow us to execute this reprogramming after September 30.

Mr. DOUGHERTY. The problem I have is you're saying here, based on the testimony of Admiral Webber, that for 1979 you had a request for cost growth funds for Trident, and you thought they were going to be included in the supplemental, and they were not included in the supplemental. So now you're asking for reprogramming funds from the 1980 Trident program based on revised cost estimates.

Captain MILLIGAN. Yes, sir.

Mr. DOUGHERTY. And in some way you found you were saving dollars. But realistically, based on your conversation, you're not saving dollars because you have problems that are still there and you have to pay for them sooner or later.

Captain MILLIGAN. We originally budgeted for the cost growth for the fiscal year 1978 and prior submarines in the fiscal 1979 appropriations request, and that was authorized and appropriated by the Congress.

Mr. DOUGHERTY. It was taken away for Newport News.

Captain MILLIGAN. Yes, sir.

Mr. DOUGHERTY. And now you're trying to give 1980 moneys back to 1979 so you can take care of what you were going to take care of with money you got and which you took away and gave to Newport News.

Captain MILLIGAN. Yes, sir. We're trying to get it restored. We tried in the supplemental in 1979 where the funds were authorized but not appropriated. Now, because of the repricing of the 1980 Trident submarine, we feel we have the flexibility to reprogram from within 1980 to the 1980 cost growth line to take care of the same problem back in the fiscal year 1978 and prior submarines.

Mr. DOUGHERTY. I understand what you're trying to do. I'm only saying to you that with the current Trident program in fiscal year 1980 and fiscal year 1981 you're going to have cost problems. You're going to have cost overruns. What you're telling us is Electric Boat is coming in with a letter, or you have a letter from Electric Boat, for cost overruns.

Admiral WEBBER. If Electric Boat does submit an insurance claim, it will be on earlier submarines, not on the fiscal year 1980 Trident submarine.

Mr. DOUGHERTY. OK. But you still have to pay for those in fiscal 1981. Where are you going to get the money?

Captain MILLIGAN. We don't really know what it's going to cost us for these new problems at Electric Boat. So we agree if there is additional cost growth we will have to come in in fiscal year 1982 and request cost growth on a prior year budget.

Mr. DOUGHERTY. That's right, and that's what you're doing right here. You're asking for cost growth funds in fiscal 1982 to cover

problems that came up in fiscal 1981, or as you're doing now you're asking for a reprogramming in fiscal 1980 to take care of something you had in fiscal 1979, to take care of problems you had in previous years. What you're doing is you're taking today's dollars and paying off on past problems. I'm suggesting you're going to have a continuing problem next year and the year after.

Captain MILLIGAN. Our best estimate right now in the repricing of the fiscal year 1980 Trident submarine is that that program, with the \$69 million out of it, is properly priced, and we would not anticipate coming back for additional funds for the 1980 Trident.

Mr. DOUGHERTY. How about the 1981 Trident?

Captain MILLIGAN. Or the 1981 Trident.

Mr. DOUGHERTY. But how can you say that in view of the problems you're talking about, all of the problems you're having with Trident it's taking longer to produce it, the delay in the schedule. It seems to me that you're either going to have to go and take Electric Boat to court to pay for—let me ask you, do you have a penalty provision in the contract?

Admiral WEBBER. No, sir. There is no penalty provision in the Trident contract.

Mr. DOUGHERTY. I may be wrong, and obviously Mr. Emery probably knows more of the technical stuff, but I think, it seems to me, you're sitting on a bomb here. I may not understand it totally. But I see that we're looking at overruns, either for previous ships or for the current construction of the Trident, that Electric Boat is going to ask the Navy to pay for out of future funding and/or that with these problems you're having with the construction of the ships you're either going to have to take Electric Boat to court to pay for the material or you're going to get taken to court to pay for the material.

Is that an oversimplistic explanation?

Admiral WEBBER. The only comment I would make is that the estimate on which the reprogramming is based, the estimate for the fiscal 1980 ship, was made with knowledge of the existing problems, in other words, on the earlier ships.

Mr. DOUGHERTY. Are you saying that you are including in the fiscal 1981 request for Trident enough money to cover not only the current Trident construction but previous year's problems with the Trident with the \$69 million you might get if you reprogram it?

Captain MILLIGAN. No, sir. I don't believe that's what the Admiral said. I think he said that in the pricing of the 1980 and 1981 Tridents the problems that we had earlier in the program were considered, and that's the best estimate we have right now.

Mr. DOUGHERTY. Do you agree that the best estimate you've had in previous years has been wrong?

Captain MILLIGAN. Yes, sir. We had cost growth.

Mr. DOUGHERTY. OK. What cost growth or what inflation factor do you have in this year's Trident? Do you think you're going to have enough money requested to meet the cost?

Captain MILLIGAN. The fiscal year 1980 Trident and the fiscal year 1981 Trident both are priced out at the current escalation factor as approved by the Office of Management and Budget.

Mr. DOUGHERTY. That doesn't tell me anything, Captain.

I understand what you're saying.

Captain MILLIGAN. We are constrained to the indices that are dictated and, as a matter of fact, in the shipbuilding program we are involved in the establishment of those indices, and we have the 1980 and 1981 submarines priced at the best estimate of what the indexes will be that we can come up with.

Mr. DOUGHERTY. Let me go on to the next point, which is basically the problems that you're having with Electric Boat.

You said that as far as you're concerned it was not a planned thing that they're doing on cutting corners.

Admiral WEBBER. Yes, sir.

Mr. DOUGHERTY. What about being negligent? And the next question I'm asking you, Admiral, so you can tie it in, and let's talk about the program itself and the fact that we're supposed to have these submarines filling a strategic capability in the interests of the United States at a given time, and we're now running significantly behind in that time frame, is Electric Boat running 24 hours a day? Are they running three shifts?

Admiral WEBBER. Yes, sir, they run three shifts.

Mr. DOUGHERTY. You don't put the wrong kind of fittings into submarines. You don't put in improper steel, improper welds, copper nickel fittings that aren't up to standard, copper nickel plating that's not up to standard.

I think you're being generous. So I think you're being nice to them. But let's be honest about it. Would you want to take one of these boats to sea?

Admiral WEBBER. Yes, sir. When we finish our inspections, we will have insured that the ship is correct before we go to sea.

Mr. DOUGHERTY. But, in effect, is Electric Boat going back and doing things over because of the Navy's inspection that they should have done in the first place?

Admiral WEBBER. Electric Boat has the prime responsibility for inspecting. They are required to do so by the contract. That's their responsibility. The Navy maintains an overall surveillance of them.

Mr. DOUGHERTY. If the Navy didn't audit Electric Boat would you want to take one of those boats to sea?

Admiral WEBBER. No, sir.

Mr. DOUGHERTY. Again, the steel welds and the hulls are all very good. It's the inside of the ship that is not very good. So what you obviously have, at least on the surface, is they have been cutting costs in areas they consider nonsafety related.

Admiral WEBBER. Our position has been, that they must meet all the specifications.

Mr. DOUGHERTY. Are they meeting the specifications?

Admiral WEBBER. Ultimately they will, yes, sir. We will insist they do so.

Mr. DOUGHERTY. I'm saying were they meeting them?

Admiral WEBBER. No, they were not.

Mr. DOUGHERTY. Are they legally responsible to meet the specifications?

Admiral WEBBER. Absolutely.

Mr. DOUGHERTY. Who is responsible for the material that's being put into boats?

Admiral WEBBER. For the material in question, Electric Boat. The shipbuilder is responsible.

Mr. DOUGHERTY. So they were negligent. Admiral, I'm not trying to get you on the record.

Admiral WEBBER. No, sir.

Mr. DOUGHERTY. I'm ticked off by the whole thing.

But, in effect, if the Navy did not audit Electric Boat, the management of Electric Boat has been doing a lousy job on quality assessment, which means they have not been doing their self-inspection, and, in fact, inferior material is being put into the boats.

Admiral WEBBER. Yes, sir

Mr. DOUGHERTY. So Legally, they're negligent.

Admiral WEBBER. I would point out that in the majority of the cases Electric Boat has in fact found the deficiencies, ultimately they have found them.

Mr. DOUGHERTY. Ultimately.

Let's talk about the strategic role of these submarines, Admiral. Let's talk about the public yards and the private yards.

In your own personal opinion is it in the best interests of this country to be building the Trident submarines in only one shipyard?

Admiral WEBBER. No. In my professional opinion, and with all things considered, I would prefer to have alternate sources.

Mr. DOUGHERTY. Is it not true that if we had started out with the Trident being built in some other public yards in addition to Electric Boat, or even at Newport News, we probably would be having a better time on meeting the schedule?

Admiral WEBBER. In my opinion, yes, sir.

Mr. DOUGHERTY. That's all I'm asking you for, Admiral, your opinion.

Admiral WEBBER. In my opinion, yes, sir.

Mr. DOUGHERTY. And we have not put them into the public yards because of the decision that only new construction is done in private yards and we forget about the experience factor and the defense resource that we've developed in a public yard.

Would you agree that the Navy maybe would have had a better opportunity to closely manage the Trident program if some of these ships were being built in navy shipyards as opposed to private yards?

Admiral WEBBER. Yes, sir. The Navy clearly has a freer hand in managing the details of the operation or the details of the building if it is in a shipyard that is under direct Navy control.

Mr. DOUGHERTY. You wouldn't find improper steel being used on them.

Admiral WEBBER. I won't say there would not be mistakes.

Mr. DOUGHERTY. All right. I don't want to belabor this point.

But I think, Mr. Chairman, very clearly that we are dealing with an extremely significant, substantive issue that goes beyond just this request for reprogramming.

Mr. EMERY. Would the gentleman yield on that point just for a moment?

Mr. DOUGHERTY. Yes, I'll be glad to.

Mr. EMERY. I think the point my colleague makes is a very important one. Whether it's additional public yards or whether it's

additional private yards, the point is that if you put all your eggs in one basket the problem occurs, you have problems.

This isn't the first time in recent history that this has happened in the Navy. The old DX, now the DD-963, the *Spruance* class destroyer, is another prime example. Originally it was proposed that that contract be split between two shipyards. One of them happened to be Bath Iron Works in Maine. That was not done. The result was pretty much the same pattern, cost overruns, delays, which ultimately resulted in those ships, some of which have not yet been given to the Navy, being way behind schedule.

That isn't good for the Navy and it's not good for the Navy's reputation. It's not good for the reputation of the shipyard.

So if that problem had been foreseen and that contract had been split between two or three yards, and maybe if this contract had at least been considered for distribution after the lead ship maybe we wouldn't be facing this particular problem. I think it's a lesson the Navy should have learned, and recent history seems to bear that out.

Mr. DOUGHERTY. Two other quick points, if I could.

You gave us a figure of \$985 million originally. Is that per boat?

Admiral WEBBER. That was the original target price for four ships.

Mr. DOUGHERTY. Four ships.

Admiral WEBBER. The first four.

Mr. DOUGHERTY. And your estimates now are \$1,210 million to build the four ships?

Admiral WEBBER. Yes, sir.

Mr. DOUGHERTY. The other factor I would like to ask you about is your schedules.

How many boats are currently under construction, one or two?

Admiral WEBBER. Tridents?

Mr. DOUGHERTY. Yes.

Admiral WEBBER. A total of seven under construction.

Mr. DOUGHERTY. Seven under construction.

What is your honest opinion of the time that it's going to take over the projected time to construct those boats, your personal opinion, admiral?

Admiral WEBBER. There is a strong possibility that Electric Boat will not achieve their new schedule for first ship delivery. In addition, the second ship delivery is too closely spaced behind the first ship. That's my own personal opinion.

I would like to reemphasize again that we will, of course, conduct a detailed review of the Electric Boat schedule as soon as we get the supporting information.

Mr. DOUGHERTY. Would you agree it seems difficult, with all the quality control problems it had in the past, that they could meet the schedule that they had projected in the first and second ship?

Admiral WEBBER. I think it's going to be very difficult, yes, sir.

Mr. DOUGHERTY. Mr. Chairman, I have a motion. I would move that the reprograming be tabled pending further study of this overall issue.

Mr. BENNETT. All right. Let me say something about that.

What I would say about it is we don't want to be held hostage by a decision by the Navy until we get satisfaction on all of the

problems we have with Navy ship construction—they have enough problems themselves—we share all these problems—they'll probably have a few more, and for us to lay a 2-by-4 or a 12-by-12 in their path on this problem without making sense on what the Navy ought to do just because we haven't satisfied other problems.

Basically you're talking about 1982 and 1983 Tridents. You're not talking about the past Tridents. These people are trying to solve the problem. You're talking about the Tridents that you know we've got to finance, and, therefore, Mr. Dougherty, I would suggest that you might withdraw the motion until the remainder of the members of the subcommittee are here, who will vote against the motion because we're not going to do anything but delay. We're not going to help anybody. It's not going to build the ships any faster or any better to hold up this particular thing you've asked about now. It's just a way to show our strength, and they know we have the strength anyway. They know our intentions are all the same. Everybody in this room wants to build a good, strong Navy as cheap as we can and as efficient as we can. So I don't think that your motion would be helpful to the Department of the Navy's problems.

Would you like to withdraw it, and maybe ask unanimous consent you just don't say anything?

Mr. EMERY. It seems to me I'm in a rather good position here, am I not?

Mr. DOUGHERTY. My problem, Mr. Chairman, to be very frank with you, is that I just don't know when we're going to solve these problems. Apparently Mr. Emery and Mr. Tribble have raised this question in the past. I think when I first came on this committee the flag was raised on the Tridents, the question of whether they would float out of the harbor where they were being built, cost overruns, and everything else. I've now been here 2 years, and the Navy still has problems with the Trident construction. They're talking about cost overruns, inferior steel.

I'm not trying to screw up the Navy. They have a difficult problem on their hands. But, on the other hand—

Mr. BENNETT. I believe your vehicle is available early next year. I'm sure you'll be coming back.

Mr. DOUGHERTY. I wish I were as sure as you are.

I'll ask unanimous consent to withdraw the resolution. But I think, in all honesty, Mr. Chairman, I'm going to ask the GAO to do a report or an audit.

Mr. BENNETT. That's been our policy. That's his prerogative.

Without objection, we'll approve this reprogramming. But you can count on it that it will be our first order of business when we come back early next year.

Mr. EMERY. Mr. Chairman.

Mr. BENNETT. Mr. Emery.

Mr. EMERY. Mr. Chairman, I might also suggest that if members of this subcommittee feel that it is an appropriate thing to do I think it would be a good idea for us to visit Electric Boat in Connecticut, maybe have an opportunity to take a look at the facility, see it firsthand, and maybe ask some questions of some of the personnel there.

Also, I don't know if we have enough time left during the next 2 weeks, or however long we're here, but I think just to satisfy some of the questions that the three of us have asked—I guess all of us have asked—today, would it be appropriate maybe to get some of the Electric Boat personnel.

Mr. BENNETT. To come here?

Mr. EMERY. To come here.

Mr. BENNETT. I think it would be appropriate. I kind of don't see the opportunity between now and the end of this year to do that.

Mr. EMERY. It is a very difficult time.

Mr. BENNETT. Everybody's running real hard to be elected.

Mr. EMERY. On the other hand, during the week we're going to be here, maybe next week. Certainly they have an interest in coming down. It might be a morning or an afternoon well spent.

Mr. BENNETT. All right. I'll talk with you and Mr. Hale and others about this public meeting. I have no objection to having them. It might be productive. I think we ought to be sure it's going to be productive.

We thank you very much for coming.

Without objection, the reprograming is approved.

You realize we have a lot of things in our hearts, just as you do, the same objectives.

Admiral WEBBER. Yes, sir.

Mr. BENNETT. We'll work it out some way.

Thank you very much.

Admiral WEBBER. Thank you very much, Mr. Chairman.

[Whereupon, at 4:32 p.m., the subcommittee was adjourned.]

