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COST OF SSN-21 CLASS SUBMARINES

Report No. 98-087

March 6, 1998

Office of the Inspector General
Department of Defense

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March 6, 1998

MEMORANDUM FOR ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on Cost of SSN-21 Class Submarines (Report No. 98-087)

We are providing this audit report for information and use. This audit was required by the National Defense Authorization Act for FY 1998.

The Navy provided comments generally concurring with the results of the audit. No additional comments are required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Brian M. Flynn, Audit Program Director, at (703) 604-9051 (DSN 664-9051) or Mr. Robert L. Shaffer, Audit Project Manager, at (703) 604-9043 (DSN 664-9043). See Appendix C for the report distribution. The audit team members are listed inside the back cover.

A handwritten signature in black ink, reading "Robert J. Lieberman", is positioned above the typed name.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 98-087
(Project No. 8AG-5006)

March 6, 1998

Cost of SSN-21 Class Submarines

Executive Summary

Introduction. This report addresses the cost limitation on the procurement of the three submarines, the SSN-21, SSN-22, and SSN-23 submarines, that comprise the SSN-21 (Seawolf) class of submarines. In the National Defense Authorization Act for FY 1996, Congress imposed a cost limitation of \$7.2 billion for the procurement of the three Seawolf submarines. The \$7.2 billion cost limitation was based on cost estimates that the Navy provided to Congress. The cost limitation has increased to \$7.4 billion because of allowable increases of \$55.3 million for economic inflation (escalation) and \$114.1 million for outfitting and post-delivery costs. The Navy did not include \$745.4 million that it had obligated during FY 1992 through 1994 for the SSN-23, SSN-24, and SSN-25 Seawolf submarines (canceled ship funds) that the President had canceled in January 1992. The audit was initiated as a result of congressional direction in the National Defense Authorization Act for FY 1998. The Act directed the Inspector General, DoD, to answer congressional questions on the cost limitation, and exclusions from that cost limitation, that Congress had placed on the Seawolf submarine program.

The Seawolf submarine is a multi-mission vessel that was designed to provide unprecedented performance capabilities. According to the Navy, the Seawolf is the quietest, most heavily armed submarine that the Navy has ever built, holding significantly more weapons than any other United States nuclear attack submarine. The Seawolf was designed during an extensive research and development program and incorporated significant technological advancements.

Audit Objectives. The overall audit objective was to evaluate the adequacy of the cost limitation imposed on the Seawolf submarines. To accomplish the objective, we performed a detailed accounting of \$745.4 million that the Navy obligated for the design costs, the nuclear components, and the construction spare parts for the Seawolf submarines that were canceled. Additionally, we reviewed information on the current estimate-at-completion for the three Seawolf (SSN-21, SSN-22, and SSN-23) submarines and determined whether the construction of those submarines experienced cost growth that the Navy had not reported to Congress.

Audit Results. The \$7.4 billion cost limitation for the Seawolf Program appears to be adequate, at this time. Of the \$745.4 million of obligated canceled ship funds, the Navy obligated \$557.6 million in design costs, termination costs, and program support costs that did not result in components that the Navy could use in the construction of the Seawolf class submarines. The costs should not be applied against the cost limitation.

The Navy obligated the remaining \$187.8 million for construction spares. The Navy planned to use \$28.4 million of the \$187.8 million for hull, mechanical, and electrical components in constructing the SSN-23 submarine. Because the cost limitation imposed on the Seawolf program applies to ship construction funds used to construct the SSN-21, SSN-22, and SSN-23 submarines, the Navy should apply the \$28.4 million for SSN-23 submarine construction spares against the cost limitation. If the Navy uses any of the remaining \$159.4 million in construction spares for construction of the Seawolf submarines, then it should apply those costs against the cost limitation; otherwise, it should not apply those costs against the cost limitation.

The Navy performed two estimates-at-completion for the Seawolf program. Both the Seawolf Program Management Office and the Seawolf Independent Cost Review Team developed an estimate-at-completion. The Seawolf Program Management Office estimate-at-completion is \$7,393.0 million, and the Seawolf Independent Cost Review Team estimate is \$67.3 million less at \$7,325.7 million. The Navy has only requested additional funds for allowable escalation and post-delivery and outfitting costs. The Seawolf Program Management Office's budget submission for FY 1999 included \$50 million in escalation. In addition, the budget submission included \$30 million for recovery of FYs 1996 and 1997 congressionally directed reductions in budgeted funding levels to cover other priorities outside the Seawolf program. The Seawolf program has not experienced any cost growth in the Shipbuilding and Conversion-Navy funding levels since Congress established the \$7.2 billion cost limitation in FY 1996.

Management Comments. Although no comments were required, the Assistant Secretary of the Navy (Research, Development, and Acquisition) provided comments that stated the Navy "concurs with the overall observations and findings of the report." However, the Assistant Secretary stated that completion of the program within the cost limitation was dependent on legislative exclusion of the canceled ship funds. To prevent the program from exceeding the cost limitation, the Navy was going to continue to seek revision of the cost limitation statute. A summary of the comments is provided in Part I. The full text of the Assistant Secretary of the Navy (Research, Development, and Acquisition) comments is in Part III. No further comments are required.

Audit Response. Congress tasked us to provide a detailed accounting of how the Navy used the \$745.4 million in canceled ship funds. Based on our review it was not clear that the Navy would exceed the cost limitation if a portion of the canceled ship funds were not excluded. The Seawolf Independent Cost Review Team estimate at completion for the construction of the three Seawolf submarines was \$67.3 million under the cost limitation.

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Part I - Audit Results

Audit Background

This report addresses the cost limitation that Congress placed on the procurement of three SSN-21 (Seawolf) class submarines. This audit was initiated based on the National Defense Authorization Act for FY 1998 to answer congressional questions on the cost limitation, and exclusions from that cost limitation, that Congress had placed on the Seawolf submarine program.

The Seawolf submarine is a multi-mission vessel that was designed to provide unprecedented performance capabilities. According to the Navy, the Seawolf is the quietest, most heavily armed submarine that it has ever built, holding significantly more weapons than any other United States nuclear attack submarine. The Seawolf was designed during an extensive research and development program and incorporated significant technological advancements.

Originally, the Seawolf submarine program was established to procure 29 Seawolf submarines. The Navy awarded contracts obligating funds for five Seawolf submarines. In January 1992, the President terminated the Seawolf program after the lead ship, the SSN-21. Congress restored the second Seawolf submarine, the SSN-22, in May 1992. In October 1994, Congress placed a cost limitation of \$4.8 billion on the procurement of the SSN-21 and SSN-22 submarines. Congress imposed the cost limitation to implement controls over the large cost growth that the Seawolf submarine program had experienced. The National Defense Authorization Act for FY 1996 authorized a third Seawolf (the SSN-23) submarine and imposed a cost limitation of \$7.2 billion for the procurement of the three Seawolf submarines. The cost limitation can be automatically increased by specific costs beyond the control of the program management office. The allowed automatic increases to the cost limitation are costs attributed to:

- economic inflation (escalation) after September 30, 1995;
- compliance with changes in Federal and state laws enacted after September 30, 1995; and
- post delivery and outfitting for the submarines.

Table 1 shows the original three-ship cost limitation and the allowable increases to the limitation as of FY 1998 appropriations.

Table 1. Current Three-Ship Cost Limitation

<u>Reason for Increase</u>	<u>Amount (millions)</u>
Original three-ship cost limitation	\$7,223.6
FY 1996 escalation	6.6
FY 1997 escalation reprogramming	13.4
FY 1997 escalation	35.3
Outfitting and post-delivery	<u>114.1</u>
Current Cost Limitation	\$7,393.0

The \$7.2 billion cost limitation was based on cost estimates and projections that the Navy provided to Congress. However, the Navy did not include \$745.4 million that the Navy identified as having been obligated or spent for the detailed design, procurement of nuclear components, and construction spare parts for the canceled Seawolf submarines (canceled ship funds).

Audit Objectives

The overall objective was to evaluate the adequacy of the \$7.2 billion cost limitation imposed on the Seawolf class submarines. In making that determination, the National Defense Authorization Act for FY 1998 requested the Inspector General, DoD, to perform a detailed accounting of the amount obligated and spent for the design costs, the nuclear components, and the construction spare parts for the Seawolf class submarines that were canceled. Additionally, we reviewed information on the current cost estimate to complete the SSN-21, SSN-22, and SSN-23 Seawolf-class submarines and determined whether the construction of those submarines experienced cost growth that the Navy had not reported to Congress. Appendix A discusses the scope and methodology of the audit.

Cost of the Seawolf Class Submarines

The \$7.4 billion cost limitation for the Seawolf Program appears to be adequate, at this time. We reviewed \$745.4 million obligated for Seawolf submarines that were later canceled, the Navy estimates-at-completion, and cost growth in the Seawolf program. Of the \$745.4 million of obligated canceled ship funds, the Navy obligated \$557.6 million for design costs, termination costs, and program support costs that did not result in components that the Navy could use in the construction of the Seawolf class submarines. The costs should not be applied against the cost limitation. The Navy obligated the remaining \$187.8 million for construction spares. The Navy planned to use \$28.4 million of the \$187.8 million for hull, mechanical, and electrical components in constructing the SSN-23 submarine. Because the cost limitation imposed on the Seawolf program applies to ship construction funds used to construct the SSN-21, SSN-22, and SSN-23 submarines, the Navy should apply the \$28.4 million for SSN-23 submarine construction spares against the cost limitation. If the Navy uses any of the remaining \$159.4 million in construction spares for construction of the Seawolf submarines, then it should apply those costs against the cost limitation; otherwise, it should not apply those costs against the cost limitation.

Congressional Request

The Public Law 105-85, National Defense Authorization Act for FY 1998, Section 123, "Exclusion From Cost Limitation for Seawolf Submarine Program," directed the Inspector General, DoD, to determine whether the cost limitation imposed on the Seawolf class submarines was adequate. In making that determination, the Act requested the Inspector General, DoD, to:

- perform a thorough and comprehensive accounting of \$745.4 million that the Secretary of the Navy identified as having been obligated or spent for the detailed design for Seawolf-class submarines that have been canceled, procurement of nuclear components, and construction spare parts for those canceled submarines;
- determine the current cost estimate of the Secretary of the Navy for completion of the SSN-21, SSN-22, and SSN-23 submarines; and
- determine whether the construction of those submarines experienced cost growth that the Navy had not reported to Congress.

Funds Obligated for Canceled Submarines

The \$745.4 million in canceled ship funds are the obligations that the Navy incurred for the SSN-23, SSN-24, and SSN-25 submarines that were later canceled. Table 2 is a breakdown of the \$745.4 million in canceled ship funds by major components.

Table 2. Obligations for Canceled Ship Funds by Fiscal Year
(dollars in millions)

<u>Major Components</u>	<u>FY 1992</u>	<u>FY 1993</u>	<u>FY 1994</u>	<u>Total</u>
Design costs	\$246.9	\$ 21.7	\$ 5.0	\$273.6
Electronics	2.1	2.0	0.0	4.1
Propulsion equipment	0.0	163.5	189.3	352.8
Hull, mechanical, and electrical	113.5	0.3	0.0	113.8
Other costs	<u>1.1</u>	<u>0.0</u>	<u>0.0</u>	<u>1.1</u>
Total	\$363.6	\$187.5	\$194.3	\$745.4

The Navy recommended that Congress exclude \$745.4 million in obligations for the detailed design, procurement of nuclear components, and construction spare parts for the canceled Seawolf class submarines. The Navy said that, if Congress would allow the Navy to exclude from the cost limitation the \$745.4 million of canceled ship funds that have been obligated, the Navy is convinced that it can deliver the three Seawolf submarines at a cost within the cost limitation that Congress established. Of the \$745.4 million, the National Defense Authorization Act for FY 1998 excluded \$272.4 million in design costs from the cost limitation.

Evaluation of the Canceled Ship Funds

The Navy obligated \$745.4 million in canceled ship funds for the design of the Seawolf class submarines, termination costs for the canceled submarines, construction spares, and program support costs. Table 3 shows the amounts for the four categories.

Cost of the Seawolf Class Submarines

Table 3. Canceled Ship Funds Obligated

<u>Category</u>	<u>Amount (millions)</u>	<u>Amount (millions)</u>
Design costs	\$273.6	
Termination costs	282.6	
Support costs	<u>1.4</u>	
Subtotal		\$557.6
Construction spares		
Hull, mechanical, and electrical	28.4	
Other	<u>159.4</u>	
Subtotal		<u>187.8</u>
Total		\$745.4

The Navy obligated \$557.6 million in the canceled ship funds for design costs, termination costs, and the program support costs that did not result in components that the Navy could use in the construction of the Seawolf class submarines. Appendix B shows a detailed accounting of the canceled ship funds.

The Navy also obligated \$187.8 million in the canceled ship funds for construction spares. Construction spares are systems or equipment that the program manager procures to ensure their availability in the event of a catastrophe, failure, or major casualty that could delay the construction program. The Navy could potentially use the major components in the construction of the Seawolf submarines. Also, the procurement of the construction spares would reduce the risk to the Seawolf program if the Navy found it necessary to replace the components during the construction and testing of the Seawolf class submarines.

Construction Spares Designated for Use in the SSN-23 Submarine. Of the \$187.8 million, the Navy planned to use \$28.4 million in construction spares for the completion of the SSN-23 submarine. The construction spares consisted of hull, mechanical, and electrical construction spares that included the main condensate, the main feed, the main sea water pump, and the auxiliary sea water pump. The Seawolf Program Office provided us the following explanation:

The FY 92 SSN 23 Main Condensate, Main Feed, Auxiliary Sea Water (ASW) and Main Sea Water (MSW) pumps were packaged for long term storage and shipped to the Shipbuilder's Quonset facility intended for use as construction spares. When the SSN 23 shipbuilding contract was awarded in June 1996, these construction spares were converted to contractor furnished material and are awaiting installation on the ship. Construction spares are in the budget but have not been ordered yet. The Main Condensate, Main Feed, ASW and MSW pumps purchased for the SSN 21 and SSN 22 ships have been installed in the hull that financed their purchase.

Unused Construction Spares. The Navy did not plan to use the remaining \$159.4 million in construction spares for the Seawolf class submarines unless needed. The Navy had components, valued at \$159.4 million, available for use as

construction spares for the Seawolf class submarines. The components consisted of the reactor core and reactor plant components, the main propulsion unit, the ship service turbine generator, the gas management system, and the central atmosphere monitoring system. With the exception of the reactor core, if the Navy does not use the components in the construction of the Seawolf class submarines, it will turn the items over to the supply system at the completion of the shipbuilding program. The Navy will use the reactor core as a shore-based spare to support operating ships.

Navy Estimate-at-Completion of the Seawolf Submarines.

The Seawolf Program Management Office and the Seawolf Independent Cost Review Team (Review Team) each perform an estimate-at-completion for the Seawolf program. The Seawolf Program Management Office prepares an estimate-at-completion in support of the President's budget submission for the procurement of Seawolf submarines. The Seawolf Program Management Office prepared the latest estimate-at-completion in March 1997.

The Review Team is composed of representatives from the Naval Sea Systems Command; the Office of the Under Secretary of Defense for Acquisition and Technology; the Naval Audit Service; the Naval Center for Cost Analyses; the Supervisor of Shipbuilding, Groton; and the Defense Contract Management Command Syracuse. On April 26, 1996, the Assistant Secretary of the Navy (Research, Development, and Acquisition) chartered the Review Team to:

- independently track and project the Shipbuilding and Conversion, Navy, costs for the Seawolf submarine program;
- identify appropriation issues and facilitate the Seawolf submarine program; and
- identify decisions concerning the cost limitation that Congress imposed on the Seawolf submarine program.

The Review Team completed its latest update to its estimate-at-completion in September 1997. Table 4 shows the estimates-at-completion that the Seawolf Program Management Office and Review Team for the Shipbuilding and Conversion-Navy appropriation (exclusive of the \$745.4 million in canceled ship funds) provided for the Seawolf program.

Table 4. Shipbuilding and Conversion-Navy Estimate-at-Completion for the Seawolf Program

<u>Navy Cost Categories</u>	<u>Program Management Office (millions)</u>	<u>Review Team (millions)</u>
Design	\$1,033.2	\$1,027.0
Ship construction	3,052.1	3,067.1
Change orders	301.8	121.6
Electronics	816.8	816.8
Government-furnished equipment and other	1,391.0	1,477.4
Escalation	684.0	701.7
Post delivery and outfitting	114.1	114.1
Total	\$7,393.0	\$7,325.7

The Seawolf Program Management Office estimate is at the cost limitation, while the Review Team estimate is \$67.3 million under the cost limitation.

Methods Used to Develop Estimates-at-Completion. The Seawolf Program Management Office and the Review Team used two primary methods to develop the estimates-at-completion.

Earned-Value Management Method. The earned-value management method uses the earned-value management data from the shipbuilder to determine the incurred cost based on the work performed and to assess the cost of the remaining work to be done. The method also assesses how efficiently the shipbuilder is performing compared with the established performance baselines.

Level-of-Effort Method. The level-of-effort method tracks obligations, expenditures, spending rates, and staffing profiles against budget limitations.

In addition, the Seawolf Program Management Office and the Review Team attended quarterly program reviews with the shipbuilder to address and stay abreast of outstanding programmatic issues. The scope of the estimate-at-completion analyses included a review of outstanding commitments, unliquidated obligations, and funding requirements.

Differences Between the Seawolf Program Management Office and Review Team Estimates-at-Completion for Seawolf. Although the Seawolf Program Management Office and the Review Team used similar methods to prepare their respective estimates-at-completion, differences existed between the two estimates. First, timing differences existed because the Seawolf Program Management Office prepared its estimate annually while the Review Team periodically updated its estimate. Second, differences affecting the design and construction cost categories existed. The Seawolf Program Management Office and the Review Team used different approaches to assess the risk associated with the shipyard only having one submarine (SSN-23) under construction for about 6 to 8 months, and the SSN-23 submarine supposedly will represent 75 percent of the shipyard's workload from December 1998 through December 2001. The Seawolf Program Management

Office used the Government's maximum contractual liability to account for the risk until work performance data for the low production rate period of December 1998 through December 2001 became available. The Review Team, on the other hand, used earned-value management data to estimate the additional number of labor hours and overhead that would be incurred for the construction cost category. For the design cost category, the Review Team used both earned-value and level-of-effort calculations, but the Seawolf Program Management Office based its estimate on only level-of-effort calculations.

Cost Growth With the Seawolf Program

The Shipbuilding and Conversion-Navy funding for the Seawolf program has experienced some cost escalation, but no cost growth that the Navy did not report to Congress since the establishment of the three-ship cost limitation. The cost limitation provides for automatic increases to accommodate the contractual requirement to cover escalation, which is beyond the control of the Seawolf Program Management Office. The Seawolf Program Management Office's budget submission for FY 1999 included \$50 million in escalation. In addition, the budget submission included \$30 million for recovery of FYs 1996 and 1997 congressionally directed reductions in budgeted funding levels to cover other priorities outside the Seawolf program. Congress had approved the changes in budgeted levels in either reprogramming actions or in the FY 1998 Appropriations Act.

Conclusion

The Navy plans to reduce the cost of the SSN-23 submarine with the \$28.4 million in hull, mechanical, and electrical components that it plans to use in constructing the SSN-23. We also recognize that the Navy was trying to lower the risk to the Seawolf submarines through the purchase of the construction spares. However, the cost limitation imposed on the Seawolf program applies to ship construction funds used to construct the SSN-21, SSN-22, and SSN-23 submarines. As such, the Navy should apply the \$28.4 million in hull, mechanical, and electrical construction spares that are going on the SSN-23 submarine against the cost limitation. Also, if the Navy uses any of the remaining \$159.4 million in construction spares for construction of the Seawolf submarines, then it should apply those costs against the cost limitation; otherwise, it should not apply those costs against the cost limitation.

Management Comments

The Assistant Secretary of the Navy (Research, Development, and Acquisition) provided comments that stated the Navy "concurs with the overall observations and findings of the report." However, the Assistant Secretary stated that completion of the program within the cost limitation was dependent on legislative exclusion of the canceled ship funds. To prevent the program from exceeding the cost limitation, the Navy was going to continue to seek revision of the cost limitation statute. To support his position the Assistant Secretary provided specific comments on three areas.

The Assistant Secretary recognized the rationale for applying the \$28.4 million in construction spares used in the construction of the SSN-23 submarine against the cost limitation. However, the Navy loses its flexibility to use \$28.4 million in appropriated funds, if the funds are counted against the cost limitation. The Navy could use the \$28.4 million to correct deficiencies identified during the Seawolf Class Post Shakedown Availabilities.

The Assistant Secretary stated that the policy of applying any part of the \$159.4 million in construction spares against the cost limitation is unworkable. He stated that applying any part of the \$159.4 million in construction spares against the cost limitation could cause the Navy to exceed the cost limitation. Because the future use of the construction spares are unknown and unpredictable, the Navy could not take action to avoid the cost breach.

The Assistant Secretary stated that the funding authorized for the construction of the SSN-21, SSN-22, and SSN-23 Seawolf class submarines is sufficient to complete the submarines. However, the completion of the three Seawolf submarines within the cost limitation is contingent upon the exclusion of the canceled ship funds. The exclusion of the canceled ship funds is required to prevent interpretations of the statutory language that serve to reduce program access to appropriated funding.

Audit Response

Congress tasked us to review the use of the \$745.4 million in canceled ship funds which included \$28.4 million in construction spares that the Navy planned to use in the construction of the SSN-23 submarine. The \$28.4 million constitute legitimate construction costs that the Navy should apply against the cost limitation. If Congress grants the Navy an exclusion of the \$28.4 million from the cost limitation, the Navy will benefit from an additional \$28.4 million. We agree that the Navy could use the \$28.4 million to correct deficiencies identified during the Post Shakedown Availabilities; however, the Navy should have included such contingencies in its estimate that established the original cost limitation.

The purpose of the construction spares was to ensure that the components were available in the event of a major casualty that could delay the construction program. The probability of a major casualty occurring that would require the Navy to consume the construction spares is low. However, if the Seawolf program encountered such an event, it would incur additional construction costs which the Navy should include in the cost limitation. Again, the Navy should have included such contingencies in its estimate that established the original cost limitation.

Based on our review it was not clear that the Navy would exceed the cost limitation if a portion of the canceled ship funds were not excluded. The Seawolf Independent Cost Review Team estimate at completion for the construction of the three Seawolf submarines was \$67.3 million under the cost limitation.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

This report addresses the cost limitation on the procurement of the three Seawolf class submarines. We reviewed records and supporting documentation dated from March 1987 through September 1997. The records included contracts and modifications to the contracts, budget exhibits and reports on the obligations and disbursements, and accounting records contained in the Standard Accounting Recording System. We also reviewed the estimates-at-completion that the Seawolf Program Management Office and the Review Team prepared. We did not rely on computer-processed data to develop our audit conclusions. Also, we did not review the management control program for the Seawolf class submarines because the audit was a congressional request with a limited scope.

Audit Period, Standards, and Locations. We performed this economy and efficiency audit from November 4, 1997, through January 15, 1998, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

Contacts During the Audit. We visited or contacted individuals and organizations within the DoD and staff members of the Senate Committee on Armed Services. Further details are available upon request.

Summary of Prior Coverage

During the last 5 years, no audits were performed concerning cost increases or schedule delays for the Seawolf program.

Appendix B. Detailed Accounting of Obligations for Canceled Ships

<u>Categories</u>	<u>Cost Element</u>	<u>Value</u>	<u>Extended Value</u>
Termination costs			
N00024-91C-4192	Electronics	\$ 3,982,024	
N00024-88C-5673	Electronics	133,609	
N00024-67F-5110	Propulsion Equipment ¹	126,730,000	
N00024-87C-4000	Propulsion Equipment ¹	59,123,459	
N00024-87C-4001	Propulsion Equipment ¹	79,170,728	
N00024-91C-4006	Propulsion Equipment ¹	6,036,000	
N00024-91C-4044	Propulsion Equipment ¹	<u>7,452,000</u>	
Subtotal			\$282,627,820
Design costs ²			
N00024-87C-4086	Design Costs	8,985,859	
N00024-91C-4195	Design Costs	38,514,141	
N00024-87C-2046	Design Costs	<u>226,051,448</u>	
Subtotal			273,551,448
Support costs ³			
N00024-92C-6412	HM&E ⁴ Components	36,933	
N00024-89C-4118	HM&E Components	80,431	
N00024-94G-2902	HM&E Components	110,561	
N00024-90C-4066	HM&E Components	87,020	
N00024-86C-4030	Other Costs	12,500	
N00024-87C-2016	Other Costs	1,037,225	
N00024-89C-2135	Other Costs	<u>25,000</u>	
Subtotal			1,389,670
Construction spares ⁵			
N00024-67F-5110	Propulsion Equipment ¹	60,100,000	
N00024-87C-4000	Propulsion Equipment ^{1,6}	6,101,541	
N00024-87C-4001	Propulsion Equipment ^{1,6}	8,054,272	
N00024-90C-4228	HM&E Components	66,808,390	
N00024-90C-4066	HM&E Components	16,376,862	
N00024-91C-4129	HM&E Components	1,463,744	
N00024-89C-4118	HM&E Components	<u>461,701</u>	
Subtotal			159,366,510
Construction spares installed on ships ⁷			
N00024-89C-2000	HM&E Components		<u>28,425,316</u>
Total			\$745,360,764

Appendix B. Detailed Accounting of Obligations for Canceled Ships

¹The Navy incurred \$352.8 million in obligations for the propulsion contracts. The \$352.8 million consisted of termination costs of \$278.5 million; a reactor core, valued at \$60.1 million; and reactor plant components, valued at \$14.2 million, that the Navy was going to use as construction spares.

²The National Defense Authorization Act for 1998 allowed the Navy to exclude from the cost limitation obligations of \$272.4 million for design costs. The Navy is now showing \$273.6 million in design costs, for an increase of \$1.2 million. According to Navy officials, the increase is attributable to resolution of completed efforts.

³The support costs consisted of \$314,945 for support from the Naval Sea Systems Command for the procurement of the hull, mechanical, and electrical components. The remaining \$1.1 million in support costs was for contractor support for the Seawolf Program Management Office. The contractor support included support for the local area network, financial accounting, and logistical support.

⁴Hull, mechanical, and electrical.

⁵The construction spares consisted of the reactor core and reactor plant components, the main propulsion unit, the ship service turbine generator, the gas management system, and the central atmosphere monitoring system.

⁶The Navy received reactor plant components from the termination of contracts N00024-87C-4000 and N00024-87C-4001, valued at \$6.1 million and \$8.1 million, respectively. The reactor plant components consisted of 28 items that included valves, pipes, fittings, and pumps.

⁷The Navy planned to install the main condensate, the main feed, the auxiliary sea water, and the main sea water pump on the SSN-23 Seawolf Class Submarine.

Appendix C. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
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Assistant Secretary of Defense (Public Affairs)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Assistant Secretary of the Navy (Research, Development, and Acquisition)
Auditor General, Department of the Navy
Program Executive Officer, Submarines
Program Manager, Program Management Office, Seawolf Class Submarine
Commander, Naval Sea Systems Command

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Appendix C. Report Distribution

Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division,
General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice,
Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Department of the Navy Comments



THE ASSISTANT SECRETARY OF THE NAVY
(Research, Development and Acquisition)
WASHINGTON, D.C. 20350-1000

FEB 23 1998

MEMORANDUM FOR INSPECTOR GENERAL DEPARTMENT OF DEFENSE

Subj: Department of the Navy comments in response to Audit
Report on Cost of SSN 21 Class Submarines (Project No.
SAG-5006)

Ref: (a) DODIG memo of 6 Feb 1998

Encl: (1) DON Response to Draft Audit Report

I am responding to the draft audit report forwarded by
reference (a) concerning the Cost of SSN-21 Class Submarines.

The Department of the Navy response is provided in enclosure
(1). The Navy concurs with the overall observations and findings
of the report. I am gratified that the Inspector General concurs
with the Navy position that all cost growth has been reported to
Congress. I am also pleased that the Inspector General
recognizes that the Navy's Estimate at Completion (EAC) is within
the statutory cost limitation. However, the Navy's EAC is based
on all of the canceled ship funds being outside the cost cap.
The Navy plans to deliver these ships within the funding levels
mandated by the cost cap, but unanticipated costs which are
placed under the cost cap will require the curtailment of an
equivalently priced deficiency correction. To prevent this, the
Navy will continue to seek revision of the cost limitation
statute.

Construction of the SEAWOLF Class continues on schedule and
under the cost cap. Because of the maturity of the construction
program, the value of the cost cap has run its course. The
conditions leading to high levels of cost uncertainty have been
overcome and costs are being contained. Continued reviews and
interpretation of costs that should or should not be included in
the cap divert Navy management attention from managing the
program. The need for a cost cap limitation must be revisited.

Very Respectfully


John W. Douglass

Department of the Navy Response

to

DODIG Draft Report of 6 February, 1998

on

Cost of SSN-21 Class Submarines

General Comment: The Navy concurs with the overall observations and findings of the report. I am gratified that the Inspector General concurs with the Navy position that all cost growth has been reported to Congress. I am also pleased that the Inspector General recognizes that the Navy's Estimate at Completion (EAC) is within the statutory cost limitation. However, the Navy's EAC is based on all of the canceled ship funds being outside the cost cap. The Navy plans to deliver these ships within the funding levels mandated by the cost cap, but unanticipated costs which are placed under the cost cap will require the curtailment of an equivalently priced deficiency correction. To prevent this, the Navy will continue to seek revision of the cost limitation statute.

Construction of the SEAWOLF Class continues on schedule and under the cost cap. The value of the cost cap has run its course. The conditions leading to high levels of cost uncertainty have been overcome and costs are being contained. Continued reviews and interpretation of costs that should or should not be included in the cap divert Navy management attention from managing the program. The need for a cost cap limitation must be revisited.

Specific Comments:

1. DODIG Finding: \$28.4 Million in construction spares used on SSN23 - (Pages ii and 9); "Since the cost cap limitation imposed on the Seawolf program applies to ship construction funds used to construct the SSN-21, SSN-22, and SSN23 submarines, the Navy should apply the \$28.4 million for SSN -23 construction spares against the cost limitation."

Department of the Navy Comments

Navy Comment: The Navy recognizes the rationale of the DODIG finding. It should be noted that the Navy has withheld this money pending clarification of this issue. However, accounting for these spares under the cost cap reduces the program's flexibility to use \$28.4 million of appropriated funds. These funds could be used for correction of deficiencies during SEAWOLF Class Post Shakedown Availabilities (PSA), where measurable benefit to the submarines and life cycle cost reduction can be demonstrated. The Navy will continue to seek Congressional action to retain these funds for use in the SEAWOLF program.

2. DODIG Finding: Construction Spares - (Pages ii and 9); "If the Navy uses any of the remaining \$159.4 million in construction spares for construction of the Seawolf submarines, then it should apply those costs against the cost limitation, otherwise it should not apply those costs against the cost limitation."

Navy Comment: The Navy believes this policy is unworkable. Because the future use of the construction spares is unknown and unpredictable, management action cannot be taken to avoid a breach of the cost cap short of requesting Congressional authorization for each use or curtailment of other ship construction work of equal value. Again the Navy will continue to seek Congressional action to exclude these costs from the cost cap.

3. DODIG Finding: Page (4). "The \$7.4 billion cost limitation for the Seawolf program appears to be adequate, at this time."

Navy Comment: The Navy believes the funding authorized for the SEAWOLF ship construction accounts is satisfactory to complete SSN21, SSN22 and SSN23 subject to the automatic increases allowed by the statute. However, completion of the program within the cost cap is dependent upon the legislative exclusion of the effort/funds appropriated for the canceled ships. This exclusion is required in order to prevent interpretations of the statutory language that serve to reduce program access to appropriated funding.

Audit Team Members

This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD.

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