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U.S. GENERAL ACCOUNTING OFFICE

STAFF STUDY

[SSN-637 CLASS

~~(STURGEON CLASS)~~ NUCLEAR ATTACK SUBMARINE]

DEPARTMENT OF THE NAVY

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Contents

	<u>Page</u>
SYSTEM DESCRIPTION AND STATUS	1
COMING EVENTS	1
COST	2
ECONOMIC ESCALATION	3
PROGRAM FUNDING	3
CONTRACT DATA	4
PERFORMANCE	5
PROGRAM MILESTONES	5
RELATIONSHIP TO OTHER SYSTEMS	6
SELECTED ACQUISITION REPORTING	6
MATTERS FOR CONSIDERATION	7
APPENDIX I - PICTURE OF STURGEON CLASS SUBMARINE	8

ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
SAR	Selected Acquisition Report
STURGEON	637 Class Nuclear Attack Submarine

SYSTEM DESCRIPTION AND STATUS

The Sturgeon class submarine is a nuclear attack submarine with a principal mission of locating and destroying ships--particularly other submarines. Additionally, the submarine conducts radio, radar, and sonar reconnaissance, visual reconnaissance including periscope photography, and coordinated antisubmarine warfare operations with other antisubmarine warfare units.

As of June 30, 1972, 29 submarines had been delivered to the Navy. The last of the 8 remaining undelivered submarines is scheduled for delivery in April 1974. Appendix I shows a picture of the Sturgeon class submarine. (Courtesy U.S. Navy.)

GAO studies on the SSN-637 program similar to this have been issued annually beginning in February 1970. This report covers changes made to the program during fiscal year 1972.

COMING EVENTS

In our previous study, we reported that a \$34.2 million cost proposal and a \$94.5 million claim had been submitted to the Navy by Ingall's Nuclear Shipbuilding Division, Litton Systems, Inc. In December 1971, the cost proposal was revised by the contractor. The Navy now considers the revised proposal as a claim. At June 30, 1972, the claim totaled \$37 million and is being evaluated by the Navy, whereas, the evaluation of the \$94.5 million claim is being delayed until the contractor submits additional supporting financial data. A Navy official informed us that no date has been established for settlement of these claims.

COST

The reported cost increase for the Sturgeon class submarine since the development estimate of October 1962 to June 30, 1972, was \$413.3 million. However, total program costs decreased \$19.7 million during fiscal year 1972. The reasons for this decrease in cost are shown below:

Changes during fiscal year 1972:

Unpredictable change	\$ (17.8)
Estimating change	(6.2)
Contract performance incentives	4.0
Economic change	.3
Net decrease (in millions)	<u>\$ (19.7)</u>

The above four cost changes occurred because of many corrections or refinements made to program estimates based on actual costs incurred. For example, in the unpredictable change category, cost decreased because events such as the restoration of the Guitarro (SSN-665)--which sank while under construction--and the transfer of the Pogy (SSN-647) from the New York Shipbuilding Corporation--which withdrew from the shipbuilding industry--to Litton Systems, Inc., did not cost as much as was originally anticipated. Conversely, added costs were incurred for contract performance incentives because a contractor earned early delivery bonuses for four submarines.

As of June 1972, the estimated cost of the STURGEON class submarine acquisition program was \$2,929 million. Total program costs do not provide for the \$94.5 million claim not being evaluated by the Navy and only partial coverage of the \$37 million being evaluated by the Navy.

ECONOMIC ESCALATION

In our February 1971 study, we discussed the treatment of economic escalation and reported that the project office showed \$121.1 million, or 9.1 percent of total program cost for inflation. However, this cost is applicable only to the basic construction contracts and should not be construed to be inflation for the total program. We are unable to report total economic escalation for the program because the accounting documents maintained by the Navy do not reflect the amount of escalation included in cost categories other than the basic construction contracts.

PROGRAM FUNDING

As of June 30, 1972, the Congress had appropriated \$2,929.1 million for the Sturgeon class submarine, of which an estimated \$2,817.3 million had been obligated. Of the amount obligated, an estimated \$2,689.8 million had been expended.

Funds programmed as of June 30, 1972, are shown below:

	<u>Fiscal year 1972</u> <u>and prior years</u>	<u>Fiscal year 1973</u>
	- - - - - \$ millions - - - - -	- - - - -
Development	- 0 -	- 0 -
Procurement	\$2,886	\$33.5
Construction	- 0 -	- 0 -
	<u>\$2,886</u>	<u>\$33.5</u>

CONTRACT DATA

Four private shipyards and two naval shipyards participated in this acquisition program. However, only four yards are presently constructing ships--Newport News, General Dynamics, Litton, and Mare Island. The following schedule shows the contractors and other pertinent data related to their building program.

<u>Contractor</u>	<u>No. of contracts</u>	<u>No. of ships constructed</u>	<u>Initial contract cost (\$ millions)</u>
General Dynamics Corporation Groton, Connecticut Quincy, Massachusetts	7	14	\$ 440.1
Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia	4	9	282.0
Litton Systems, Inc. Pascagoula, Mississippi	3	6	196.9
New York Shipbuilding Corporation, Camden, New Jersey	1	1	33.5
Mare Island Naval Shipyard, Vallejo, California	5	5	161.9
Portsmouth Naval Shipyard Portsmouth, New Hampshire	<u>2</u>	<u>2</u>	<u>79.9</u>
Total	<u>22</u>	<u>37</u>	<u>\$1,194.3</u>

The Navy provided data on the six largest contracts. Three are fixed-price and three are fixed-price-incentive. These six contracts had an initial cost of \$604.8 million. As of June 30, 1972, definitized contract changes had increased the price for the contracts to \$614.9 million. The Navy estimates that additional changes will be negotiated

for approximately \$4.7 million.

Progress reporting for construction of the Sturgeon class submarine is based upon a construction schedule which shows all major milestones and principal events from contract award to delivery of the ship. Additionally, quarterly progress and cost reports are required.

PERFORMANCE

During fiscal year 1972 the Sturgeon class program had two changes occurring in the operational and technical characteristics. These changes were a decrease in speed of .4 knots and an increase in enlisted personnel accommodations from 98 to 100. According to the Navy, the speed was reduced to reflect the demonstrated performance of operational submarines, and the accommodations were increased to correct a habitability deficiency.

PROGRAM MILESTONES

As of June 30, 1972, all but three of the scheduled milestones had been completed. The remaining milestones--delivery, final contract trial, and ready for operational deployment of the last ship--are scheduled to be completed in 1974.

Of the five submarines that were delivered during fiscal year 1972, three were delivered from 12 to 52 months late, while two were delivered approximately 2 months earlier than originally scheduled.

For the three ships delivered late in fiscal year 1972, a Navy official informed us that the delays were due primarily to the assignment of higher priority work, including Polaris submarines, which created a workload beyond the shipyard's management and work force capabilities.

Of the eight submarines scheduled for delivery after June 30, 1972, two will be delivered earlier than originally estimated, five will be delivered from 3 to 18 months late, and one will be delivered 50 months late.

The submarine that will be 50 months late is the Guitarro, which sank at dockside in Vallejo, California, on May 15, 1969.

RELATIONSHIP TO OTHER SYSTEMS

In previous GAO studies, we reported that the urgency of this particular program was responsible for the concurrent development and production of a major subsystem, the BQQ-2 sonar system, which subsequently developed problems of its own. In our March 1972 study on the BQQ-2 sonar system we pointed out that when the submarine operated under certain sea conditions, the sonar was not always able to meet the detection requirements at the specified range. This continues to be the case in the active detection mode, whereas, the passive detection mode exceeds the specific operational requirement for detecting and tracking targets.

SELECTED ACQUISITION REPORTING

In March 1972, the Assistant Secretary of the Navy for Financial Management requested that the SSN-637 program be exempted from Selected Acquisition Reporting (SAR) due to the degree of program completion (approximately 96 percent of the program funds have been obligated). The request was approved by the Assistant Secretary of Defense (Comptroller) effective with the March 31, 1972, submission, with the qualification that a final SAR be submitted at the time all outstanding claims are

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settled, or when the last ship is delivered, whichever occurs first.

MATTERS FOR CONSIDERATION

The status of program completion is such that there are no viable options open for action. However, the Congress should be kept informed on the progress made in settling the extensive claims in one of the private shipyards.

AGENCY REVIEW

A draft of this staff study was reviewed by Navy officials associated with the management of this program and comments were coordinated at the Headquarters level. The Navy's comments are incorporated as appropriate. As far as we know there are no residual differences in fact.

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