DEPARTMENT OF DEFENSE

AUDIT REPORT

ACQUISITION MANAGEMENT OF THE SMALL WATERPLANE AREA TWIN HULL OCEAN SURVEILLANCE SHIPS

No. 90-042

March 1, 1990

Office of the Inspector General

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
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March 1, 1990

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION
DIRECTOR, OPERATIONAL TEST AND EVALUATION
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)

SUBJECT: Report on the Audit of the Acquisition Management of the Small Waterplane Area Twin Hull Ocean Surveillance Ships (Report No. 90-042)

This is our final report on the Audit of the Small Waterplane Area Twin Hull (SWATH) Ocean Surveillance Ship (T-AGOS) programs for your information and use. Comments on a draft of this report were considered in preparing the final report. We made the audit from October 1988 through June 1989. The audit's overall objective was to evaluate the acquisition management of the Navy's two classes of SWATH T-AGOS ships, the T-AGOS 19 Class and the T-AGOS 23 Class (commonly referred to as the SWATH A Class). We evaluated critical program elements for each class of ship. In our review of the T-AGOS 19 Class, we evaluated threat versus system requirements, acquisition planning, contracting, cost estimating and analysis, technical reviews and configuration audits, prime contractor's second sourcing efforts, component breakout actions, and design maturity. For the SWATH A Class, we evaluated specifications, systems engineering planning, supportability, scheduling, cost estimating and analysis, contracting, budgeting, and testing. We also reviewed internal controls relating to each objective, and the program office's implementation of the Management Control Program. The T-AGOS 19 Class and the SWATH A Class ships will provide an operational platform for deploying the Surveillance Towed Array Sensor System (SURTASS) in the higher sea states where the monohull ocean surveillance ships cannot operate effectively. The SWATH A Class will also provide a platform for a second acoustic system (referred to as the Second Acoustic System). Four T-AGOS 19 Class ships are planned at an estimated procurement cost of $249.6 million. The fiscal year 1989 Five-Year Defense Program reflects six SWATH A Class ships through fiscal year 1994 at a total estimated procurement cost of $825 million; however, in May 1989 the Navy increased the planned force level structure to 17 SWATH A Class ships through fiscal year 2003 at an estimated procurement cost of $2.5 billion.

Many aspects of the T-AGOS 19 Class and SWATH A Class acquisition programs were managed effectively. We did not identify any major problems in six of the program areas relating to the T-AGOS 19 Class. The audit results for these objectives are summarized in Part I of this report. We also did not

for the projects, performing these assessments. As a result, assessments of risk and controls may not be adequate to correct significant control weaknesses. We recommended that the program manager require the managers directly responsible for the projects to redo the existing risk assessments and perform management control reviews of their specific projects. We also recommended that the performance standards of managers within the program office reflect accountability for management controls in their projects (page 35).

The audit identified internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Finding A identifies the following three weaknesses in internal controls relating to the T-AGOS 19 Class and SWATH A Class testing programs:

- the lack of realistic operational testing by the Navy's independent test agency,

- the lack of a cohesive test management plan addressing all phases of testing, and

- inadequacies and inconsistencies in the Navy's guidance concerning operational testing and test plans for shipbuilding programs.

Finding B indicates that controls were not in place to ensure that independent logistical reviews are performed for ships acquired for the Military Sealift Command. Finding C indicates that the program office is not fully implementing the Management Control Program. Failure to implement this Program is, in itself, an internal control weakness. Recommendations A.1.a., A.1.c., A.1.d., A.1.e., B.1., B.2., B.3., C.1., C.2., and C.3., if implemented, will correct the weaknesses. We could not determine the monetary benefits to be realized by implementing the recommendations. The monetary benefits were not identifiable because we could not quantify the amount to be derived from realistic operational testing that could potentially preclude retrofitting of ships, the expenditure of resources to correct potential logistical problems that could remain uncorrected without independent logistical reviews, and the costs associated with allowing potential significant control weaknesses to remain uncorrected. A copy of this report will be provided to the senior official responsible for internal controls within the Department of the Navy.

On September 29, 1989, a draft of this report was provided to the Under Secretary of Defense for Acquisition; Director, Operational Test and Evaluation; and the Assistant Secretary of the Navy (Financial Management) for comment. We received comments, dated December 4, 1989, from the Acting Assistant

identify any major problems relating to five of the program management areas for the SWATH A Class. The audit results for these objectives are also summarized in Part I. We identified needed improvements and internal controls in testing programs for both classes of ships, logistical reviews for ship programs acquired for the Military Sealift Command, and the program office's implementation of the Management Control Program. The results of the audit are summarized in the following paragraphs and the details, audit recommendations, and management comments are in Part II of this report.

The Navy did not plan to conduct operational testing and evaluation with its independent test agency, the Operational Test and Evaluation Force (OPTEVFOR), on the T-AGOS 19 Class or the SWATH A Class ships. Also, neither program had a Test and Evaluation Master Plan. The Navy planned to make significant investments in the SWATH T-AGOS ships and could later determine that these ships are not operationally effective and suitable without major changes. We recommended that the Navy require operational testing with oversight by OPTEVFOR for both classes of ships, request a preliminary assessment from OPTEVFOR on the ability of the T-AGOS 19 Class to perform its operational mission before exercising the option for the second SWATH A Class ship, establish a Test and Evaluation Master Plan for each program, and clarify and revise aspects of the Navy's guidance concerning operational testing and Test and Evaluation Master Plans for shipbuilding programs. We also recommended that both programs receive the Director, Operational Test and Evaluation's oversight (page 11).

The Navy did not consistently perform logistical reviews of ships acquired for the Military Sealift Command. The Navy did a logistical review of the SWATH A Class before its Milestone II decision as a result of our audit. The Navy has not committed to doing a logistical review on the T-AGOS 19 Class before its fleet introduction. The lack of independent logistical reviews could result in ships reaching the fleet with significant logistical problems, which could affect the ships' capability to perform their mission. We recommended that the Deputy Chief of Naval Operations (Logistics) perform an independent review of the T-AGOS 19 Class program before fleet introduction, determine the level of logistical review required for ship acquisitions for the Military Sealift Command, and revise Navy guidance to specifically include logistical reviews for acquisitions for the Military Sealift Command (page 27).

The Auxiliary and Special Mission Ship Acquisition Program Office was not fully implementing the Management Control Program. The Financial Manager within the program office was performing the assessments of risk and adequacy of management controls rather than the managers, who had direct responsibility

Secretary of the Navy (Shipbuilding and Logistics) and comments, dated November 17, 1989, from the Acting Director, Operational Test and Evaluation. Management comments are summarized below and in Part II of this report, and the complete texts are in Appendixes B and C.

The Acting Assistant Secretary of the Navy (Shipbuilding and Logistics) nonconcurred with Recommendation A.1.a., which recommended operational testing and evaluation with the Commander, Operational Test and Evaluation Force's oversight for the T-AGOS 19 Class and SWATH A Class ships. The Navy does not believe that operational test and evaluation of the T-AGOS 19 Class and SWATH A Class ships is appropriate. The Navy stated that operational issues regarding the capability of the SWATH T-AGOS platforms to support the mission systems will be adequately addressed in the Test and Evaluation Master Plans for the SURTASS Block Upgrade, which is a major modification to the SURTASS program; and the Second Acoustic System, which the SWATH A will support. The Acting Assistant Secretary's response implied that we were recommending testing the T-AGOS 19 Class and the SWATH A Class hulls without their mission systems. This is not our position. As discussed in Part II of the report, we are recommending realistic operational testing of these ships under typical operating conditions, which would include towing a SURTASS array in high sea states.

Since the conclusion of our audit work, the Navy has revised the Block Upgrade Test and Evaluation Master Plan and has issued a Test and Evaluation Master Plan for the Second Acoustic System. These plans indicate that the SURTASS Block Upgrade and the Second Acoustic System will be operationally tested using a T-AGOS 19 Class and SWATH A Class platform, respectively. Therefore, we consider the Navy's planned actions to meet the intent of Recommendation A.1.a. On September 29, 1989, OSD designated the "SURTASS Sensor System" to receive both OSD operational and developmental testing oversight. We updated Finding A to reflect the above mentioned events. We also added Recommendation A.2.b., which addresses the need for the Director, Operational Test and Evaluation, to require the SURTASS Block Upgrade and the Second Acoustic System Test and Evaluation Master Plans to include testing of critical T-AGOS 19 Class and SWATH A Class operational requirements. Therefore, we request that the Director, Operational Test and Evaluation, provide comments to Recommendation A.2.b. in response to the final report.

The Acting Assistant Secretary also nonconcurred with draft Recommendation A.1.b. for the same reasons that he nonconcurred with Recommendation A.1.a. Draft Recommendation A.1.b. addressed demonstrating the operational effectiveness and suitability of the small waterplane area twin hull ships through operational testing of a T-AGOS 19 Class ship before exercising the contract

option for the second SWATH A Class ship. The Acting Assistant Secretary's response indicated that OPTEVFOR would be invited to participate in extensive technical trials on the T-AGOS 19 lead ship and would monitor T-AGOS 19 Board of Inspection and Survey trials. As a result, we have revised Recommendation A.1.b. to require the Assistant Secretary of the Navy (Shipbuilding and Logistics) to request a preliminary assessment from OPTEVFOR on the ability of the T-AGOS 19 Class to perform its operational mission prior to exercising the option for the second SWATH A ship. This preliminary assessment would be based on OPTEVFOR's voluntary involvement in the T-AGOS 19 technical trials and Board of Inspection and Survey trials, and its formal participation in the integrated operational test of the Block Upgrade on a T-AGOS 19 Class platform. We request that the Navy provide comments on the revised Recommendation A.1.b. in response to the final report.

The Acting Assistant Secretary nonconcurred with Recommendation A.1.c., which recommended that Test and Evaluation Master Plans be prepared for the T-AGOS 19 Class and SWATH A Class ships. The Acting Assistant Secretary also nonconcurred with Recommendation A.1.d., which addressed Navy's policy of not requiring a Test and Evaluation Master Plan for ship programs that do not require operational testing. We believe that both recommendations are still valid for the reasons given in Part II of the report. Also, recent legislation, United States Code, title 10, section 2400(c), effective November 29, 1989, emphasizes the requirement for a Test and Evaluation Master Plan for naval vessel programs. We do not believe that the Navy's position on these recommendations is supported by DoD regulations and public law. Therefore, we request that the Navy reconsider its position on these recommendations and provide comments to the final report.

The Acting Assistant Secretary concurred with Recommendation A.1.e., which addressed the need for the Navy to resolve the conflict between two Navy instructions concerning which official determines whether a new ship class will receive operational test and evaluation. He indicated that the instructions would be brought into conformance with each other. However, no completion date was given and we ask the Navy, in responding to the final report, to provide an anticipated completion date for this planned action.

The Acting Assistant Secretary nonconcurred with Recommendation A.1.f., which recommended reporting and tracking deficiencies cited in the above recommendations as material internal control weaknesses. With the exception of the recommendation addressing conflicting guidance, the Navy did not believe that the other internal control weaknesses were applicable. We believe that the lack of realistic operational

testing by the Navy's independent test agency, the lack of a cohesive test management plan addressing all phases of testing, and inadequacies in the Navy's guidance concerning testing are material internal control weaknesses. Therefore, we believe our recommendation is valid, and we request that the Navy reconsider its opinion on this recommendation and provide comments to the final report.

The Acting Director, Operational Test and Evaluation, partially concurred with Recommendation A.2.a. (Recommendation A.2. in the draft report), which recommended Director, Operational Test and Evaluation oversight for the T-AGOS 19 Class and SWATH A Class programs. The Acting Director indicated that after reviewing the SWATH T-AGOS ships and "SURTASS sensor systems," the Director, Operational Test and Evaluation, decided to exercise oversight on the "SURTASS sensor systems." The September 29, 1989, OSD memorandum that designated the "SURTASS sensor system" for OSD testing oversight stated that the "SURTASS ship and sensor was added because it is a new hull type supporting the sensor package." Therefore, the Director, Operational Test and Evaluation, will exercise oversight on the SWATH T-AGOS ships, which meets the intent of our recommendation.

The Acting Assistant Secretary of the Navy conditionally concurred with Recommendation B.1., which addressed performing independent logistical reviews of the T-AGOS 19 before fleet introduction. The Acting Assistant Secretary stated that, if warranted, a logistics review will be conducted at least 6 months prior to the initial operating capability date. We considered the Navy's planned actions to meet the intent of the recommendation. The Acting Assistant Secretary concurred with Recommendations B.2., B.3., and B.4., and stated that the Chief of Naval Operations will develop guidelines and procedures for conducting logistical reviews of Military Sealift Command acquisitions. These reviews will be scheduled and conducted selectively, when deemed appropriate by the Program Sponsor, Program Manager, and the Military Sealift Command. We ask that the Navy, in responding to the final report, provide clarification on what "selective logistic reviews" means in the Acting Assistant Secretary's response. Also, we ask that the Navy provide estimated completion dates for the actions identified in response to Recommendations B.2. and B.3.

The Acting Assistant Secretary concurred with Recommendations C.1., C.2., C.3., and C.4., on strengthening the implementation of the Management Control Program within the Auxiliary and Special Mission Ship Acquisition Program Office. We considered these actions to be fully responsive to the recommendations.

DoD Directive 7650.3 requires that all recommendations be resolved within 6 months of the date of the final report. Accordingly, the Navy is requested to provide final comments on the unresolved issues in this report within 60 days of the date of this memorandum. Also, the Director, Operational Test and Evaluation, is requested to provide comments on Recommendation A.2.b. within 60 days of the date of this memorandum.

The courtesies extended to the audit staff are appreciated. Audit team members are listed in Appendix F. If you have any questions on this audit, please contact Mr. John Dillinger at (202) 693-0186 (AUTOVON 223-0186) or Mr. Keith West at (202) 694-1415 (AUTOVON 224-1415). Copies of this report are being provided to the activities listed in Appendix G.

Stephen A. Trodden
Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Navy

REPORT ON THE AUDIT OF THE ACQUISITION MANAGEMENT OF THE SMALL WATERPLANE AREA TWIN HULL OCEAN SURVEILLANCE SHIPS

TABLE OF CONTENTS

	Page
TRANSMITTAL MEMORANDUM/EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	1
Background	1
Objective and Scope	2
Internal Controls	4
Prior and Ongoing Audit Coverage	4
Other Matters of Interest	5
PART II - FINDINGS AND RECOMMENDATIONS	11
A. Operational Testing	11
B. Logistical Reviews of Military Sealift Command Ships	27
C. Management Controls	35
APPENDIX A - Picture of SWATH A Class Ship	39
APPENDIX B - Office of the Assistant Secretary of the Navy (Shipbuilding and Logistics) Comments	41
APPENDIX C - Office of the Director, Operational Test and Evaluation Comments	51
APPENDIX D - Summary of Potential Monetary and Other Benefits Resulting from the Audit	57
APPENDIX E - Activities Visited or Contacted	59
APPENDIX F - Audit Team Members	61
APPENDIX G - Final Report Distribution	63

Prepared by:
Acquisition Management
Directorate
Project No. 9MC-0004

REPORT ON THE AUDIT OF THE ACQUISITION MANAGEMENT OF THE SMALL WATERPLANE AREA TWIN HULL OCEAN SURVEILLANCE SHIPS

PART I - INTRODUCTION

Background

The Navy has two ongoing Small Waterplane Area Twin Hull (SWATH) Ocean Surveillance Ship (T-AGOS) acquisition efforts, the T-AGOS 19 Class and the T-AGOS 23 Class. The T-AGOS 23 Class is commonly referred to as the SWATH A Class. The mission of both classes of ships is to provide an operational platform for deploying the Surveillance Towed Array Sensor System (SURTASS) in the higher sea states, normally the northern latitudes, where the monohull T-AGOS ships cannot operate effectively. SURTASS is a surveillance system that is designed to detect, classify, and track threat submarines. The SWATH A Class will also provide a platform for a Second Acoustic System to combat the increased Soviet threat.

The SWATH configuration has twin hulls, below the waterline, that are connected to a wide cross structure by thin vertical struts. This configuration provides better buoyancy and a smaller waterplane area for waves to act on than do conventional ship designs, which results in reduced motion and better stability in high sea states.

The Auxiliary and Special Mission Ship Acquisition Program Office of the Naval Sea Systems Command (NAVSEA) is responsible for the acquisition of both programs. The Assistant Chief of Naval Operations (Undersea Warfare) is the program sponsor for both programs. Both classes of ships are being acquired for the Military Sealift Command fleet.

At the time of audit, the T-AGOS 19 Class was in the detail design and construction phase of the Naval ship acquisition process. In October 1986, the contract for the lead ship was awarded to McDermott Shipyard, Inc., a division of McDermott International. Construction of the lead ship began in September 1987 and as of June 2, 1989, the lead ship was about 70 percent completed. The lead ship was scheduled for delivery in February 1990; however, on August 14, 1989, the program office informed us that the delivery of the T-AGOS 19 would be delayed 10 months, until December 1990. The program office indicated that the responsibility for and the cost of the delay had not been determined at the time of audit. The T-AGOS 19 Milestone III was approved in September 1988, and the contract option for three follow-on ships was exercised in October 1988. Only four T-AGOS 19 Class ships are planned. As of January 1989, the total projected procurement funding (Shipbuilding and Conversion, Navy)

for the four T-AGOS 19 Class ships was $249.6 million and the total research and development funding was about $7.8 million.

In May 1989, the SWATH A Class received Milestone II approval, which allowed the program to proceed from the contract design phase into the detail design and construction phase of the ship acquisition process. In April 1990, the Navy plans to award the contract for the detail design and construction of the lead SWATH A Class ship. The delivery of the lead ship is planned for fiscal year 1993. The fiscal year 1989 Five-Year Defense Program reflects six SWATH A ships through fiscal year 1994 at a total estimated procurement cost of $825 million. The projected research and development funding for the SWATH A Class program is about $17.2 million. On May 15, 1989, a senior Navy review panel approved a force level structure of 17 SWATH A Class ships. The total procurement funding for these ships is estimated at about $2.5 billion.

Objective and Scope

The overall objective of the audit was to evaluate the acquisition management of the two classes of SWATH T-AGOS ships, the T-AGOS 19 Class and the SWATH A Class. We made the audit following our critical program management element approach. Under this approach, at the time of the audit the objectives and scope of the audit coincided with the status of these two classes of ships in the acquisition process. During the survey, we evaluated the following nine elements of program management that were critical to the detail design and construction phase of the T-AGOS 19 Class: threat versus system requirements, adherence to the acquisition plan, contract procedures, cost estimating and analysis, testing, technical reviews and configuration audits, prime contractor's second sourcing efforts, component breakout actions, and design maturity. We also reviewed the following nine elements of program management that were critical to the contract design phase of the SWATH A Class program: specifications, systems engineering planning, supportability, scheduling, cost estimating and analysis, contracting, budgeting, testing, and test data analysis and impact on the program. At the conclusion of our survey, we determined that additional audit work was not warranted for the T-AGOS 19 Class areas of threat versus system requirements, adherence to the acquisition plan, cost estimating and analysis, prime contractor's second sourcing efforts, component breakout, and design maturity. The results of our review of these areas are summarized in the "Other Matters of Interest" section of the report. We determined that additional audit work was not necessary for the SWATH A Class areas of specifications, systems engineering planning, scheduling, cost estimating and analysis, and budgeting. The results of our review of these areas are also summarized in the "Other Matters of Interest" section of the report.

Based on the results of our survey, we reviewed testing, logistics support, configuration management, and contract management during the audit verification phase of our audit. We evaluated these areas as they related to both programs. Our specific audit objectives were to:

- evaluate the need for operational testing and evaluation for the T-AGOS 19 Class and the SWATH A Class programs,

- evaluate T-AGOS 19 Class and SWATH A Class test planning,

- determine whether the Navy is appropriately interpreting DoD guidance relating to Test and Evaluation Master Plans for shipbuilding programs,

- assess the Foreign SWATH Evaluation Program test results and the contractual arrangements or agreements relating to this program,

- evaluate the need for independent logistical reviews for ships acquired for the Military Sealift Command,

- evaluate the status of provisioning technical documentation for the T-AGOS 19 Class and any potential impact this area could have on the T-AGOS 19 delivery,

- evaluate the status of technical manuals for the T-AGOS 19 Class and any potential effect this area could have on the T-AGOS 19 delivery,

- evaluate the adequacy of configuration management for the T-AGOS 19 Class and the SWATH A Class programs, and

- evaluate contracting actions relating to the T-AGOS 19 Class and the SWATH A Class programs.

Our evaluation of the audit objectives relating to the Foreign SWATH Evaluation Program, provisioning technical documentation, technical manuals, configuration management, and contract management did not result in significant reportable conditions. The results of our review of these areas are summarized in the "Other Matters of Interest" section of the report. Findings relating to operational testing and independent logistical reviews are presented in Part II of this report.

We reviewed the acquisition period covering October 1984 through June 1989. We reviewed selected documentation, such as program documentation, schedules, contracting actions, specifications, cost estimates, and data and information relating to testing, logistics support, and configuration management. We also reviewed criteria established in pertinent DoD and Navy

guidance. We interviewed cognizant DoD; Navy; Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP); and contractor officials involved in the acquisition and administration of the T-AGOS 19 and SWATH A Class programs. A list of activities visited or contacted is in Appendix E. This performance audit was made from October 1988 through June 1989 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included tests of internal controls as deemed necessary.

Internal Controls

We assessed internal controls relating to the effective management of the T-AGOS 19 Class and the SWATH A Class acquisition programs, concentrating on internal controls relating to our survey and audit objectives. We also reviewed the Auxiliary and Special Mission Ship Acquisition Program Office's implementation of the Management Control Program. In assessing internal controls, we evaluated internal control techniques such as management plans, written policies and procedures, design reviews, and various mechanisms for independent review of the programs. We identified material internal control weaknesses relating to testing, logistics, and implementation of the Management Control Program. We noted the following three material internal control weaknesses in the testing area:

- lack of operational testing with the Navy's independent test agency's oversight,

- lack of a cohesive test management plan, and

- inadequacies and inconsistencies in the Navy's guidance concerning operational testing and test plans for shipbuilding programs (page 11).

In the logistics area, we found internal control weaknesses in the Navy's practice of not performing independent logistics reviews for Acquisition Category I and II ships acquired for the Military Sealift Command (page 27). We also considered deficiencies in implementation of the Management Control Program within the program office as an internal control weakness (page 35).

Prior and Ongoing Audit Coverage

On January 16, 1985, the Naval Audit Service issued an audit report, "Special Audit of the T-AGOS Ocean Surveillance Ship Program" (S30034). This was a special audit requested by the Secretary of Defense on the overall management of the T-AGOS Ocean Surveillance Ship Program. The audit focused on the Tacoma

Boatbuilding Company contract for T-AGOS monohull ships 1 through 12. The audit findings related to preaward contract actions, contract modifications, progress payments, special bank account transactions, advance payments, and performance bond authorizations. The Navy has taken corrective actions on the report's recommendations.

On November 8, 1988, we issued Report No. 89-030, "Acquisition of the Surveillance Towed Array Sensor System." The audit focused on the SURTASS mission system. The audit addressed the expanding SURTASS mission, increasing SURTASS procurement quantities, and program oversight. We recommended that a review be made to determine if the SURTASS program should be redesignated to a major acquisition status with the Defense Acquisition Board providing the primary oversight. On February 23, 1989, the Under Secretary of Defense designated SURTASS a Major Defense Acquisition Component Program. The audit found that the contractor operating the T-AGOS monohull ships was not complying with contractual requirements relating to security clearances and training. We recommended that the contracting officer strictly enforce the terms of the contract, that a review be made of internal controls over the screening of crew members, and that a review be made of other Military Sealift Command contracts. The Military Sealift Command concurred with the recommendations and indicated that corrective actions to address the recommendations were in place.

In February 1988, the Naval Audit Service began a project management audit of the Enhanced Modular Signal Processor, EMSP-AN/UYS-2, Program (88-0072). The Enhanced Modular Signal Processor is a key component of the SURTASS Block Upgrade. The Block Upgrade will be installed on the T-AGOS 19 Class ships, beginning with the second ship, and on the SWATH A Class ships. The Naval Audit Service's objectives included an evaluation of program planning, program growth, funding, integrated logistics support, procurement and contractor performance measurement, proliferation of nonstandard signal processors, test and evaluation, and second source selection.

Other Matters of Interest

Survey Conclusions on T-AGOS 19 Class. During the survey phase of our audit, we determined that additional audit work was not required in the T-AGOS 19 Class survey areas relating to threat versus system requirements, adherence to the acquisition plan, cost estimating and analysis, prime contractor's second sourcing efforts, component breakout, and design maturity. A discussion of these areas follows.

Threat Versus System Requirements. We reviewed the threat statement contained in the T-AGOS 19 Operational

Requirement, the mission system requirements set forth in the T-AGOS 19 Top Level Requirements, and the most recent Antisubmarine Warfare (ASW) Surveillance Systems Threat Assessment. We did not identify any problems relating to the T-AGOS 19 mission need or the ability of the system requirements to respond to the need. The top level requirements responded to the need addressed in the current threat assessment for ASW platforms to operate in high sea states.

Adherence to the Acquisition Plan. The program office was adhering to the T-AGOS 19 Class Acquisition Plan. There had not been any major changes in the acquisition strategy since inception of the program. We took exception to the plan's waiver of operational testing and a Test and Evaluation Master Plan. The plan's waiver is further addressed in Part II, Finding A.

Cost Estimating and Analysis. We reviewed cost estimates that were used to evaluate contract award in October 1986 and the latest estimates that were based on contract prices as of October 1988. We found that all estimates were developed using reasonable assumptions and established procedures and were complete and adequate.

Prime Contractor's Second Sourcing Efforts. Our objective was to evaluate the contractor's make or buy program. The applicability of this area was limited because the award of the T-AGOS 19 contract was based on a full and open price competition. The Federal Acquisition Regulation does not require contractors to submit make or buy programs when a procurement is based on adequate price competition.

Component Breakout. This area had limited applicability to the T-AGOS 19 Class because of the small number of ships being procured. The program office made little effort to determine the applicability of breakout. We made a limited review and did not identify any components that met the $1 million annual buy threshold established by Defense Federal Acquisition Regulation Supplement 17.7202-4 for component breakout evaluation. However, we encourage the program office to ensure that breakout receives adequate consideration in the SWATH A Class procurement.

Design Maturity. We did not identify any problems with the maturity of the T-AGOS 19 design. During audit verification, we became aware of a problem with the T-AGOS 19 rudder design. A discrepancy in the specifications relating to the maximum rudder torque resulted in an undersizing of the rudder activators. On July 31, 1989, the NAVSEA administrative contracting officer issued a contract modification to correct the deficiency. NAVSEA and McDermott agreed that the revised rudder design is viable.

Survey Conclusions on SWATH A Class. During the survey, we also determined that additional audit effort was not necessary in

the SWATH A Class areas pertaining to specifications, systems engineering planning, scheduling, cost estimating and analysis, and budgeting. A discussion of these areas follows.

Specifications. We reviewed the SWATH A draft specifications. The specifications appeared to promote maximum competition and included other requirements established by the SWATH A Class Acquisition Plan. Our review disclosed no indications that the system requirements were overstated. On May 8, 1989, the Chief Engineer of the Navy and the NAVSEA Deputy Commander for Ship Design and Engineering approved the specifications for the SWATH A.

Systems Engineering Planning. We reviewed the implementation and control of the SWATH A systems engineering effort and the status of the specialty plans supporting the systems engineering effort. During the contract design phase from August 1988 to April 1989, there was communication and coordination among key players in the systems engineering process through various meetings and reviews. The program office did not appear to be adhering strictly to guidelines set forth in the regulations relating to supporting specialty plans in the test planning and configuration management areas. The Test and Evaluation Master Plan is addressed in Finding A and the Configuration Management Plan is addressed in the configuration management discussion under "Audit Conclusions."

Scheduling. We found that the schedules for the SWATH A and the mission systems, SURTASS and the Second Acoustic System, were being closely monitored and coordinated. During the audit, we monitored the events leading to the Milestone II decision that was formally approved on May 24, 1989. We believe that the Assistant Secretary of the Navy (Shipbuilding and Logistics) and the SWATH A Program Manager should assess any effect the 10-month delay in the delivery of the lead T-AGOS 19 ship may have on the SWATH A Class schedule and, more specifically, on the SWATH A Class lead ship award planned for April 1990. We further address the SWATH A Class schedule in Part II, Finding A.

Cost Estimating and Analysis. We reviewed the NAVSEA procedures used to analyze and estimate the cost of the SWATH A Class. We also reviewed estimating techniques at the Naval Center for Cost Analysis, which prepared independent cost estimates. On March 23, 1988, the Cost Analysis Improvement Group reviewed and compared the NAVSEA estimates against the independent cost estimates. Based on our review, we concluded that the procurement cost estimates for the SWATH A were reasonably complete and accurate. The competitiveness of the bids received from shipbuilders will be the key element in determining the actual cost of the SWATH A.

Budgeting. We reviewed the budget estimates for the SWATH A contained in the fiscal year 1990 and 1991 President's Biennial Submission. We compared the budget estimates with the cost estimates that NAVSEA and the Naval Center for Cost Analysis prepared in June 1988. We concluded that the Navy had budgeted adequate funds to cover the estimated procurement cost of the SWATH A vessels.

Audit Conclusions. We did not identify any significant reportable conditions in evaluating the audit objectives relating to the Foreign SWATH Evaluation Program, provisioning technical documentation, technical manuals, configuration management, and contract management. In these areas, either the Navy had taken action to address concerns that we noted during the survey or additional audit work did not disclose any major problems. A discussion of these areas follows.

Foreign SWATH Evaluation Program. The Foreign SWATH Evaluation Program was the outcome of the Navy's perception of risk in the SWATH T-AGOS programs. Because the Navy did not have any SWATH vessel over 200 tons, it arranged to get performance data on a larger SWATH vessel. The purpose of the Foreign SWATH Evaluation Program was to determine if the Navy's SWATH design tools could reliably predict the performance of a SWATH vessel. The Navy's design tools, consisting of computer simulations and model tank tests, are formulated and tested at the David W. Taylor Naval Ship Research and Development Center (DTNSRDC).

The Navy's primary concern was seakeeping because the SWATH T-AGOS vessels were designed to provide greater seakeeping ability in high sea states. NAVSEA had compared some seakeeping data from full-scale foreign SWATH trials with results from the DTNSRDC model tests. The full-scale data were collected at sea state 5 and below, while the DTNSRDC model test results were from simulated sea state 4 and above. The data showed a relationship between wave height and performance of the ship. A comparison of the two sets of data showed great similarity between the experienced and predicted relationship. As of August 15, 1989, NAVSEA was comparing model test data with full-scale seakeeping performance data from the higher sea states. NAVSEA planned to complete this analysis in September 1989.

We learned that NAVSEA was having difficulty obtaining information from the Foreign SWATH Evaluation Program to support the SWATH A Milestone II decision. As a result, we reviewed the contractual arrangements for the program and discussed these arrangements with the DoD Office of General Counsel. We found no improper aspects of the program and determined that the difficulties in gaining information on a timely basis were beyond the control of the Navy.

Provisioning Technical Documentation. During our survey, the Resident SUPSHIP, Morgan City, Project Officer for the T-AGOS 19 raised concerns about the Navy Ships Parts Control Center's (SPCC) timely processing of provisioning technical documentation. During audit verification, we reviewed provisioning technical documentation statistics and met with SPCC, program office, SUPSHIP, and McDermott representatives. We also contacted a sample of vendors and verified that most of the provisionable items had short procurement lead times. We concluded that the provisioning technical documentation situation had improved and that there were no longer serious concerns over the potential effect to the T-AGOS 19 Class delivery schedule resulting from this issue.

Technical Manuals. During our survey, the Resident SUPSHIP Project Officer for the T-AGOS 19 Class expressed concerns about the quality and timeliness of technical manual submissions. During audit verification, we pursued the issue with the program office, SUPSHIP, and McDermott. We learned that McDermott did not meet the contractual due date, March 9, 1989, for preliminary submission of technical manuals. As of June 30, 1989, 24 of 144 manuals were delinquent. According to the program office, the absolute need date for the manuals was the date of the acceptance trials, which was scheduled for December 1989. This date was expected to slip because of the anticipated 10-month delay in the delivery of the T-AGOS 19. McDermott is under a weighted progress payment system for the technical manuals and is only being paid for approved technical manuals. The program office and SUPSHIP personnel were closely monitoring the technical manuals' situation. Based on our evaluation, we concluded that the technical manuals' situation was receiving appropriate attention, and did not pose a serious threat to the T-AGOS 19 delivery date at the time of the audit. However, the program office and SUPSHIP should continue to closely monitor the situation.

Configuration Management. During the survey phase, we found that NAVSEA did not have a configuration management plan for the T-AGOS 19 Class or the SWATH A Class programs. We regarded the lack of a configuration management plan as an internal control weakness that required us to make substantive tests of configuration management procedures. We reviewed procedures at McDermott and the Resident SUPSHIP to determine if the configuration of the ship was being controlled. We found that procedures were in place to ensure that the ship was being built to specifications, that drawings matched specifications and actual construction, and that configuration changes were controlled. We also tested baseline documentation in the Resident SUPSHIP office and found that it was current. During our audit verification phase, the program office prepared

configuration plans for both programs. In May 1989, we reviewed these plans and were satisfied that all essential elements of a configuration management plan were addressed.

Contract Management. We reviewed contracting actions relating to the T-AGOS 19 Class detail design and construction contract, which was awarded in October 1986. Overall, the contracting officer generally complied with established preaward procedures and guidelines. However, our review of the T-AGOS 19 Class contract files disclosed an unanswered 1986 legal opinion from the Navy Office of the General Counsel. The main issue raised was whether a contract clause in which NAVSEA was indemnifying the contractor against liability to third parties violated the Anti-Deficiency Act. In response to our questions on this issue, the NAVSEA contracting officer contended that the indemnification clause did not violate the Anti-Deficiency Act, but he said that NAVSEA would modify the contract to expressly limit the Navy's liability. In April 1989, McDermott would not agree to the modification without significant additional compensation. As a result, NAVSEA decided to leave the contract clause as written. The DoD Office of General Counsel reviewed the indemnification contract clause and a pamphlet incorporated in the clause by reference entitled, "Standard Forms of Marine Builders Risk (Navy Form-Syndicate) and War Damage Insurance Policies Referred to in Vessel Contracts of the Bureau of Ships." Based on the advice of the DoD Office of General Counsel, we concluded that the observation did not merit a recommendation to modify the T-AGOS 19 Class contract because of the following reasons: the existing clause has been in use since 1942; the NAVSEA Counsel advised that, under rules of Admiralty, the Government's liability is generally limited to the value of the vessel; and all future Navy contracts will include a clause specifically providing that funds for indemnification are subject to availability of appropriations.

We reviewed the acquisition plan and preparations for the source selection of the contractor for the lead SWATH A Class ship. The acquisition strategy and request for proposal will closely parallel the strategy and contract for the T-AGOS 19 Class. Some problems with the T-AGOS 19 contract have been corrected for the SWATH A Class request for proposal. For example, the SWATH A Class indemnification clause limits the Government's liability to the availability of appropriated funds at the time a contingency occurs. We did not find any problems relating to the preparations for the award of the lead SWATH A Class ship contract.

PART II - FINDINGS AND RECOMMENDATIONS

A. Operational Testing

FINDING

The Navy did not plan to conduct operational testing and evaluation with its independent test agency on the two classes of Small Waterplane Area Twin Hull (SWATH) Ocean Surveillance Ships (T-AGOS). This situation existed because the Assistant Secretary of the Navy (Shipbuilding and Logistics) did not follow the intent of DoD guidance with the decision to waive operational testing and a Test and Evaluation Master Plan. As a result, the Navy will make major commitments to the SWATH T-AGOS shipbuilding programs and later could determine that the ships are not operationally effective or suitable without retrofitting.

DISCUSSION OF DETAILS

Background. DoD Directive 5000.3, "Test and Evaluation," March 12, 1986, states that the primary purpose of all test and evaluation is to contribute directly to the timely development, production, and fielding of systems that meet the user's requirements and that are operationally effective and suitable. The demonstration of a system's technical capabilities and its operational effectiveness and suitability by conducting appropriate test and evaluation will be a key requirement for decisions to commit significant additional resources to a program, to advance it from one acquisition phase to another, and to field a system. The two types of testing and their distinct purposes are described below.

- Development test and evaluation assists in the engineering design and development process and verifies the attainment of technical performance specifications, objectives, and supportability. The developing or procuring agency, which is the Naval Sea Systems Command (NAVSEA) in the case of the SWATH T-AGOS ships, plans or conducts development test and evaluation.

- Operational test and evaluation is the field test, under realistic conditions, to determine the effectiveness and suitability of the weapon system for use in its intended environment by typical users and the evaluation of the results of such tests.

DoD Directive 5000.3 also states that the primary purpose of operational test and evaluation is to ensure that only operationally effective and suitable systems are delivered to the operating forces. Each DoD Component is to have an operational test agency, which is separate and independent from the developing agency and the using agency. This operational test

agency is responsible for planning and conducting all operational test and evaluation, reporting test results, and providing an evaluation of the tested system's operational effectiveness and suitability. The Navy's independent test agency is the Operational Test and Evaluation Force (OPTEVFOR).

DoD Directive 5000.3 also specifically addresses test and evaluation for special acquisition programs such as ships that involve procurement of a few items over an extended period. It states that:

> For these special systems, the component OTA (operational test agency) shall monitor and participate in relevant laboratory and controlled testing, and use these results, as appropriate, to provide an assessment of system effectiveness and suitability . . . . After production of the system, the component OTA (or user, with the concurrence of the OTA) shall conduct a rigorous operational test and provide an evaluation, as appropriate, to provide an assessment of system effectiveness and suitability in the same manner as for more typical systems.

OPNAV Instruction 3960.10C, "Test and Evaluation," September 14, 1987, sets forth policy and procedures for Navy test and evaluation. This instruction states that operational test and evaluation is required for all Acquisition Category I, II, III, and IVT programs. The T-AGOS 19 Class and the SWATH A Class acquisitions are both Acquisition Category II programs.

SWATH T-AGOS Testing Programs. The Navy was not planning to conduct operational testing and evaluation with the Navy's independent operational test agency, OPTEVFOR, for either the T-AGOS 19 Class or the SWATH A Class ship acquisition programs. The Navy's position was made clear in the acquisition plans for both programs that the Assistant Secretary of the Navy (Shipbuilding and Logistics) approved. Both acquisition plans stated that operational test and evaluation was not planned and a Test and Evaluation Master Plan (TEMP) was not required because the design of the ships is based on proven existing systems and conventional commercial design, and because the ships will be built to commercial shipbuilding standards using current state-of-the-art technology. The Assistant Secretary of the Navy (Shipbuilding and Logistics) approved the T-AGOS 19 Class Acquisition Plan on April 16, 1986, and approved the SWATH A Class Acquisition Plan on October 4, 1988.

The Navy's justifications for not requiring operational testing and for not preparing a TEMP do not recognize the uniqueness of the T-AGOS 19 Class and SWATH A Class ships. The SWATH hull is an unconventional hull form. The Navy has been involved in SWATH

ship development since 1970. At 3,400 tons, the T-AGOS 19 will be the Navy's first SWATH ship of this size and configuration. Also, the T-AGOS 19 will be the Navy's first open ocean capable SWATH ship. The only other Navy SWATH ship has been the 200 ton SSP Kaimalino, which was built in 1973. The SSP Kaimalino is a range support vessel that the Naval Ocean Systems Center operates. The T-AGOS 19 Class and SWATH A Class ships are not "off the shelf" ships, but are Navy in-house designed ships. The Navy went with an in-house design because very few SWATH ships had been built. Also, the Navy did not believe that the shipbuilding industry possessed the requisite SWATH design expertise. The SWATH A's Acquisition Plan states that the Navy had the "only knowledge base necessary to conduct this unique and complex design effort." In a May 9, 1986, meeting with the General Accounting Office, the Program Sponsor conveyed the uniqueness of the SWATH design stating that ". . . naval architects are truly working in a new technology field . . . ."

The extent of development test and evaluation in the SWATH T-AGOS testing programs indicated risks and unknowns with the SWATH design. In January 1989, a representative from the program office stated that the SWATH T-AGOS ships have received more extensive model testing than any other ship. The David W. Taylor Naval Ship Research and Development Center (DTNSRDC) conducts these model tests, which aid in the design maturation process. These model tests are conducted to verify the performance characteristics of the hull, to validate the required sustained speed and maneuverability, and to provide input to the contract design. As discussed in Part I, the Navy funded a $5.1 million Foreign SWATH Evaluation Program to validate its SWATH design tools and to reduce the perceived risk of the SWATH T-AGOS programs. NAVSEA, with support from DTNSRDC, is planning to conduct a comprehensive program of technical trials on the T-AGOS 19 Class ship, which will measure acoustics, powering, maneuvering, seakeeping, and structural integrity. Some of these tests will be short-term and occur before the first operational mission, while other tests will be long-term and will be conducted for a minimum of 3 years.

The T-AGOS 19 Class contractor, McDermott Shipyard, Inc., discovered a discrepancy relating to the specifications for the T-AGOS 19 Class steering gear mechanism. This discrepancy was an indication of unknowns and risks with the SWATH design. The NAVSEA designers had undersized the rudder activators in the T-AGOS 19 Class rudder design. In July 1988, McDermott initially reported the discrepancy to NAVSEA, but NAVSEA assured McDermott that the specifications were correct. In March 1989, while working on the SWATH A design, the NAVSEA designers finally concluded that the original design was inadequate. The NAVSEA designers discovered that they made assumptions relating to wave slap that seemed logical at the time they were applied, but these

assumptions turned out to be erroneous. As a result, the T-AGOS 19 Class rudder steering mechanism will have to be reworked at an additional cost and a slippage in production schedule. On July 31, 1989, the NAVSEA administrative contracting officer approved a maximum price modification of about $2.3 million to the T-AGOS 19 contract for accomplishing the steering gear change for the T-AGOS 19 Class ships. The modification extended the lead T-AGOS 19 delivery schedule by a maximum of 10 months and extended the delivery schedules of the three follow-on ships by a maximum of 4 months each.

Need for Operational Testing. Operational testing and evaluation is designed to assess a system's operational effectiveness and operational suitability in its intended environment. This realistic testing with an independent test agency's oversight was lacking in the T-AGOS 19 Class and SWATH A Class testing programs. Operational testing and evaluation for the SWATH T-AGOS ships would provide greater assurance that this unique hull form will perform as expected when employed under typical operating conditions. Typical operating conditions for the SWATH T-AGOS ships would include towing a Surveillance Towed Array Sensor System (SURTASS) array in high sea states because the primary reason for developing these ships was to obtain better seakeeping in high sea states. A Military Sealift Command civilian or contracted crew would be the typical users.

Because key commitment milestones are still ahead for the SWATH A Class and because of the planned growth in the SWATH A Class program, operational test and evaluation results will be critical to the Navy in making fundamental program decisions before it becomes significantly invested in the program. DoD policy states that demonstration of a system's operational effectiveness and suitability through appropriate test and evaluation is a key requirement in making decisions to commit significant additional resources to a program.

Operational testing and evaluation of the SWATH T-AGOS classes of ships would involve OPTEVFOR's planning and oversight. As of May 1989, OPTEVFOR was not formally involved in either the T-AGOS 19 Class or the SWATH A Class testing program. OPTEVFOR would participate in test planning and provide a separate and independent evaluation of test results. Under the existing testing programs, the T-AGOS 19 Class and the SWATH A Class ships have extensive developmental testing by the program advocates. OPTEVFOR involvement would add a check and balance to these testing programs.

Some Navy officials expressed doubt as to whether OPTEVFOR would have the expertise to operationally test a ship hull or would test a civilian manned ship. OPNAV Instruction 5440.47F, "Mission and Functions of Operational Test and Evaluation Force,"

May 21, 1984, states that OPTEVFOR's mission is to test and evaluate weapon systems, ships, aircraft, and equipment in the anticipated operational environment. On May 9, 1989, OPTEVFOR representatives advised us that they would have the capability to conduct a scenario-driven operational test on the SWATH T-AGOS ships. The OPTEVFOR representatives also stated that they would test ships with either civilian or contractor crews as well as military crews. OPTEVFOR was formally involved in operational testing of the SURTASS system. The typical SURTASS crew, which is a civilian contracted crew, was used in the operational testing.

Representatives within the Office of the Chief of Naval Operations and the Navy's Board of Inspection and Survey (INSURV) stressed that INSURV had the expertise to test ships. INSURV conducts acceptance trials and final contract trials for each new ship. These trials, however, would not satisfy the requirement for operational testing. The INSURV acceptance and final contract trials for the T-AGOS 19 Class will not seek out high sea states. As a result, the INSURV trials will not approximate a realistic operating scenario as set forth by the requirements document.

On March 18, 1988, the Assistant Secretary of the Navy (Shipbuilding and Logistics) approved the SWATH A Milestone I with the contingency that the program sponsor would fund full scale tests of an existing foreign SWATH ship to aid in validating SWATH type ship design tools and performance predictions. The Assistant Secretary's decision memorandum stated that these tests would reduce the risks in introducing the larger SWATH A vessels before the smaller T-AGOS 19 Class ships were in service.

The Foreign SWATH Evaluation Program, which was discussed in Part I, provided detailed information on seakeeping, maneuvering, and acoustics. The program's purpose was technical, and it was used to validate the Navy's design tools. As of August 15, 1989, NAVSEA was still evaluating the foreign SWATH results. However, despite the benefits gained and to be gained from the Foreign SWATH Evaluation Program, this will not be a substitute for operational testing and evaluation. The tests did not simulate a realistic SWATH T-AGOS operating environment because they were not made pulling a SURTASS array and did not involve a typical SWATH T-AGOS crew. Furthermore, the Navy's SWATH design is significantly different from the foreign SWATH ship. The foreign ship's actual seakeeping performance was only useful in validating the Navy's design tools. OPTEVFOR was not involved in the testing.

SWATH A Schedule. In April 1990, the program office planned to award the detail design and construction contract for the lead

SWATH A with construction beginning in April 1991. The program office planned to exercise the option for the first SWATH A follow-on ship between October 1, 1991, and February 28, 1992. The lead T-AGOS 19 Class ship was scheduled to be delivered in February 1990. However, on August 14, 1989, the program office informed us that the planned delivery date had slipped 10 months, to December 1990. As of November 30, 1989, the program office was planning for the first T-AGOS 19 operational exercise to take place between October 1991 and March 1992. Therefore, under the existing T-AGOS 19 Class and SWATH A Class schedules, the T-AGOS 19 will not be deployed in an operational exercise before the start of construction on the lead SWATH A.

We are not taking exception to the Navy's exercise of the options for the three follow-on T-AGOS 19 Class ships in October 1988, without having operationally tested the lead T-AGOS 19 Class ship, because this may have been impractical for a low volume and long schedule program such as the T-AGOS 19 Class. Also, the T-AGOS 19 Class did not fall within the criteria of United States Code, title 10, section 2366 (as amended by Public Law 101-189, section 802; see United States Code, title 10, section 2399), which states that a major acquisition program may not proceed beyond low-rate initial production until initial operational testing and evaluation of the program is completed. In this statute, a "major defense acquisition program" is defined as a conventional weapon system in which total expenditures for research, development, test, and evaluation are estimated to be more than $75 million (fiscal year 1980 constant dollars) or total expenditures for procurement are more than $300 million (fiscal year 1980 constant dollars). The estimated T-AGOS 19 Class procurement funding of $249.6 million (then-year dollars) [1/] did not exceed this threshold. However, the estimated SWATH A Class procurement funding of $825 million (then-year dollars) [2/] exceeded this threshold. The acquisition plans for the T-AGOS 19 and the SWATH A Class ships state that the approval for the full production process is not typically applicable to shipbuilding, but that the intent will be met by a Milestone III for follow-on ship approval.

The two classes of SWATH ships provided a natural break in the SWATH T-AGOS programs. The Navy should seize the opportunity to demonstrate the operational effectiveness and suitability of this unique hull form to support the SURTASS mission before making

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1/ The $249.6 million (then-year dollars) equates to about $139.2 million in fiscal year 1980 constant dollars.

2/ As of January 1989, the Five-Year Defense Program showed $825 million (then-year dollars), which equates to about $421.1 million in fiscal year 1980 constant dollars.

major investments in the second class of SWATH ships, the SWATH A Class. This could be achieved by operationally testing a T-AGOS 19 Class ship before exercising the option for the first SWATH A follow-on ship. The SWATH A Class has closely paralleled the T-AGOS 19 Class, and both classes will support the SURTASS system. Also, the design of the SWATH A Class was following the basic principles of the T-AGOS 19 Class. We reviewed documentation that indicated that the Navy considered the T-AGOS 19 Class as an incremental step to the larger SWATH A Class ships. For example, in May 1986, the Navy Program Sponsor for the T-AGOS 19 and SWATH A Class ships indicated in a meeting with the General Accounting Office that the Navy chose to approach the SWATH programs incrementally, rather than in one leap, by authorizing the small SWATH (T-AGOS 19 Class) followed by a larger SWATH (SWATH A Class).

Test and Evaluation Master Plan. The Assistant Secretary of the Navy (Shipbuilding and Logistics) waived the requirement for a Test and Evaluation Master Plan (TEMP) for both the T-AGOS 19 Class and the SWATH A Class ships in approving their acquisition plans. As a result, neither acquisition program had a cohesive test plan addressing all phases of testing. A TEMP defines and integrates test objectives, critical issues, systems characteristics, responsibilities, resources, and schedules for test and evaluation. DoD Directive 5000.3 requires that all major defense acquisition programs have a TEMP. While DoD Directive 5000.3 applies to major defense acquisition programs, it also requires that programs not designated as major defense acquisition programs be guided by the principles set forth in the Directive. According to DoD Directive 5000.3, a TEMP should address all phases of testing including development and operational test and evaluation. OPNAV 3960.10C states that for each Acquisition Category I, II, III, and IV program, the TEMP is the controlling test and evaluation management document.

A TEMP for the T-AGOS 19 Class and the SWATH A Class would provide the framework for the different Navy activities to be involved in these testing programs. Because a TEMP is essentially a contract between the program manager, program sponsor, and OPTEVFOR, it would ensure the involvement of OPTEVFOR in test planning and oversight. The TEMP would integrate the various aspects of these testing programs, such as model testing, INSURV's test and evaluation, foreign SWATH testing, and operational testing, into one master plan.

The SURTASS program and the SURTASS Block Upgrade have TEMP's. The SURTASS Block Upgrade is a major modification to the SURTASS program that will provide improved detection, classification, tracking, and reporting of threat submarines. The focus of the SURTASS TEMP and the existing Block Upgrade TEMP was on the mission system without regard to its interoperability with

specific hull-type ships. The SURTASS TEMP did not contain a stipulation about testing SURTASS in the case of a new hull. Under the Block Upgrade TEMP, OPTEVFOR's testing would have little or no involvement with the SWATH T-AGOS Military Sealift Command ship crew. OPTEVFOR would look at the ability of the Space and Naval Warfare Systems Command contracted crew to operate SURTASS.

A draft Block Upgrade TEMP revision, dated November 1989, indicated that operational testing for the Block Upgrade during the second quarter of fiscal year 1992 would be conducted using the T-AGOS 20 ship. The draft TEMP identified, as an operational testing and evaluation objective, assessing whether the SWATH T-AGOS design characteristics and seakeeping capability support the SURTASS mission requirements. The T-AGOS 20 will be the first T-AGOS 19 Class ship to receive the Block Upgrade. Based on the dates established in the draft Block Upgrade TEMP for operationally testing the Block Upgrade using the T-AGOS 20 platform, it is feasible that the T-AGOS 20 could be operationally tested prior to February 28, 1992, the final date for exercising the option for the first follow-on SWATH A Class ship.

On November 7, 1989, the Navy issued a TEMP for the Second Acoustic System, which the SWATH A will support. The TEMP indicated that the Second Acoustic System would be tested when installed in a SWATH A Class ship, but it did not identify any operational testing and evaluation objectives that specifically addressed the SWATH A platform.

Navy Guidance on Testing. SECNAV Instruction 5000.2, "Major and Non-major Acquisition Programs," November 1, 1988, states that "A TEMP is required for ship programs only when COMOPTEVFOR [Commander, Operational Test and Evaluation Force] requires formal OT&E [operational test and evaluation] for the ship or overall combat system." We believe that the Navy misinterpreted DoD guidance to mean that a TEMP was not required for ship programs if there was no formal operational test and evaluation. DoD Directive 5000.3 states that a TEMP addresses test planning for all test phases, which includes both development and operational testing.

We also noted a contradiction between SECNAV Instruction 5000.2 and OPNAV Instruction 3960.10C relating to which official determines whether a ship class will receive operational testing. OPNAV Instruction 3960.10C states that "CNO [Chief of Naval Operations] (OP-98) will determine when a new ship class requires full-ship operational evaluation." CNO (OP-98) refers to the Director of Research and Development Requirements, Test and Evaluation, within the Office of the Chief of Naval Operations. SECNAV Instruction 5000.2 states that "A TEMP is required for

ship programs only when COMOPTEVFOR requires formal OT&E for the ship or overall combat system." The OPNAV instruction indicates that CNO (OP-98) will make the determination on whether a ship program receives operational testing, but the SECNAV instruction indicated that COMOPTEVFOR will make the determination.

Director, Operational Test and Evaluation (DOT&E), Oversight. Neither the T-AGOS 19 Class nor the SWATH A Class program received DOT&E oversight. United States Code, title 10, section 138 (as amended by Public Law 101-189, section 802; see United States Code, title 10, section 2399) requires mandatory DOT&E oversight for programs that meet the criteria set forth in United States Code, title 10, section 2430 for a major defense acquisition program. Section 2430 defines a major acquisition program as a program that is not highly classified and:

> (1) that is designated by the Secretary of Defense as a major defense acquisition program; or
>
> (2) that is estimated by the Secretary of Defense to require an eventual total expenditure for research, development, test, and evaluation of more than $200 million (based on fiscal year 1980 constant dollars) or an eventual total expenditure for procurement of more than $1 billion (based on fiscal year 1980 constant dollars).

Section 138 also states that DOT&E may designate selected systems that do not meet the criteria set forth in section 2430 for its oversight.

On May 15, 1989, a senior Navy review panel increased the planned SWATH A Class force level structure from 6 to 17 ships. The estimated procurement cost for 17 SWATH A Class ships was about $2.5 billion (then-year dollars) [3/]. Based on the planned procurement funding, the SWATH A Class ships exceeded the dollar threshold for DOT&E oversight. Also, we believe that the T-AGOS 19 Class should receive DOT&E oversight because the T-AGOS 19 Class will be the Navy's first experience with a SWATH ship of its size and configuration.

Conclusion. A void existed in the T-AGOS 19 Class and SWATH A Class testing programs because of a lack of operational testing and evaluation to demonstrate the operational effectiveness and suitability of these programs. Because the Navy's independent test agency, OPTEVFOR, was not formally involved in these two programs, an essential check and balance

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3/ The $2.5 billion (then-year dollars) equates to about $1.2 billion in fiscal year 1980 constant dollars.

was not in place. OPTEVFOR and DOT&E should be involved in providing input to the test plan and oversight over operational testing. Furthermore, the Navy needed realistic operational testing and evaluation of these SWATH T-AGOS ships in making future fundamental program decisions to commit significant resources for the SWATH A Class program. Also, realistic operational testing and evaluation could determine that the ships are not operationally effective or suitable without retrofitting.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Assistant Secretary of the Navy (Shipbuilding and Logistics):

a. Require operational testing and evaluation with oversight by the Commander, Operational Test and Evaluation Force, for the Navy's two classes of Small Waterplane Area Twin Hull ship acquisition programs, the T-AGOS 19 Class and the SWATH A Class.

b. Prior to exercising the first option on the SWATH A Class contract, request a preliminary assessment from the Commander, Operational Test and Evaluation Force on the ability of the T-AGOS 19 Class to perform its operational mission. The Commander, Operational Test and Evaluation Force's preliminary assessment would be based on its voluntary involvement in the T-AGOS 19 technical trials and Board of Inspection and Survey trials, and its formal participation in the integrated operational test of the Block Upgrade on a T-AGOS 19 Class platform. If the preliminary assessment identifies significant operational issues relating to the ability of the T-AGOS 19 Class to perform its mission, the Assistant Secretary should delay the exercise of the option until the significant deficiencies are resolved.

c. Require the Auxiliary and Special Mission Ship Acquisition Program Manager to prepare a Test and Evaluation Master Plan for the T-AGOS 19 Class and the SWATH A Class ship acquisition programs and to staff the plans through appropriate organizations.

d. Revise SECNAV Instruction 5000.2 to delete the statement "A TEMP is required for ship programs only when COMOPTEVFOR requires formal OT&E for the ship or overall combat system."

e. Resolve the conflict between SECNAV Instruction 5000.2 and OPNAV Instruction 3960.10C on whether the Chief of Naval Operations (OP-98) or the Commander, Operational Test and Evaluation Force determines whether a new ship class will receive operational test and evaluation and revise the instructions accordingly.

f. Report in the annual Management Control Certification Statement and track the status of the deficiencies addressed in Recommendations 1.a., 1.c., 1.d., and 1.e., as material internal control weaknesses using the procedures established in SECNAV Instruction 5200.35B, "Department of the Navy Management Control Program," May 25, 1988.

2. We recommend that the Director, Operational Test and Evaluation:

a. Exercise operational test and evaluation oversight on the T-AGOS 19 Class and the SWATH A Class acquisition programs.

b. Require the SURTASS Block Upgrade and Second Acoustic System Test and Evaluation Master Plans to include testing of critical T-AGOS 19 Class and SWATH A Class operational requirements, such as demonstrating the ability of the ship to operate in high sea states.

MANAGEMENT COMMENTS

The Acting Assistant Secretary of the Navy (Shipbuilding and Logistics) nonconcurred with Recommendation A.1.a., and stated that the Navy does not believe that operational test and evaluation of the T-AGOS 19 Class and the SWATH A Class is appropriate. The Acting Assistant Secretary stated that the Navy plans to conduct an extensive 3-year program of technical trials aboard the T-AGOS 19 lead ship which will measure acoustics, powering, maneuvering, seakeeping, and structural integrity. OPTEVFOR has been informally invited to participate in these trials. The Acting Assistant Secretary stated that there is no plan to operationally test the T-AGOS 19 and the T-AGOS 23 hulls apart from the mission systems, but the Navy plans to evaluate the ability of the hull and propulsion system to support the integrated system mission. The Acting Assistant Secretary further stated that operational issues regarding the capability of the SWATH T-AGOS platforms to support the mission payloads will be adequately addressed in the TEMP's for the SURTASS Block Upgrade and the Second Acoustic System; and that OPTEVFOR will evaluate the system and platform interoperability during operational test and evaluation events for these systems. The Acting Assistant Secretary also stated that the TEMP's for the mission systems will include OPTEVFOR monitoring of NAVSEA and INSURV testing of the T-AGOS 19 with an objective of assessing its capacity to support the ship's mission.

The Acting Assistant Secretary nonconcurred with Recommendation A.1.b. and stated that the Navy's plan is sound, because the requirement for the SWATH T-AGOS ships is urgent and the risk of discovering significant design problems is small in the T-AGOS 19.

The Acting Assistant Secretary nonconcurred with Recommendations A.1.c. and A.1.d. and stated that TEMP's are not required for ship programs that do not have operational testing and evaluation. Furthermore, the Acting Assistant Secretary stated that the Navy did not misinterpret DoD guidance regarding TEMP's for ship programs and indicated that the Navy routinely advises OSD on which ship programs it considers to require TEMP's and which it does not. OSD has never disagreed with the Navy's advice on any program.

The Acting Assistant Secretary concurred with Recommendation A.1.e. and stated that all "lower tier instructions" will be brought into conformance with SECNAV Instruction 5000.2. The Acting Assistant Secretary nonconcurred with Recommendation A.1.f. and stated that no material internal control weaknesses were applicable except possibly the weakness relating to Recommendation A.1.e. A complete text of the Acting Assistant Secretary of the Navy's comments is in Appendix B.

The Acting Director, Operational Test and Evaluation, partially concurred with draft Recommendation A.2 (renumbered Recommendation A.2.a.) and stated that after reviewing the SWATH T-AGOS ships and SURTASS sensor programs, DOT&E decided to exert oversight on the "SURTASS sensor systems." The response stated that operational test plans for the "SURTASS sensor systems" require interoperability, compatibility, and other testing with their SWATH T-AGOS platforms, which is a standard part of the determination of system effectiveness and suitability for a ship weapons system. The Acting Director indicated that, at the time of the audit, the Navy's plans for testing the mission systems were not sufficiently defined to determine whether these ships would be the platforms for the mission systems when they were operationally tested.

The Acting Director also provided comments to the recommendations that were addressed to the Navy. The Acting Director partially concurred with Recommendation A.1.a. and stated that the recommendation had already been implemented because integrated testing is being conducted by OPTEVFOR with DOT&E oversight. The Acting Director partially concurred with Recommendation A.1.b. and stated that the recommended action was precisely the philosophy that DOT&E strives to achieve and that DOT&E will endeavor to meet the recommendation. Legislation under consideration may directly affect the appropriateness of this recommendation, specifically as it applies to when operational testing must be completed to support ship acquisition decisions. The Acting Director concurred with Recommendation A.1.c. and stated that total system TEMP's are prepared for the SURTASS Block Upgrade and the SURTASS Second Acoustic System. The Acting Director partially concurred with Recommendation A.1.d. and stated that

Navy directives must be consistent with public law and DoD directives. The Acting Director also concurred with Recommendation A.1.e. A complete text of the Acting Director's comments is in Appendix C.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The Navy and DOT&E's responses to the testing finding and recommendations indicated that there have been three events since the conclusion of our audit work. The TEMP for the SURTASS Block Upgrade is being revised to show that the Block Upgrade will be operationally tested with a T-AGOS 19 Class platform. On November 7, 1989, the Navy issued the Second Acoustic System's TEMP, which indicated that the Second Acoustic System will be tested using a SWATH A platform. Also, on September 29, 1989, OSD designated the "SURTASS sensor system" as a program to receive both OSD operational test and evaluation oversight and development test and evaluation oversight.

We disagree with the Navy's statements on Recommendation A.1.a. that operational test and evaluation of the T-AGOS 19 Class and the SWATH A Class is not appropriate. In view of the unique nature of the SWATH hull form, we believe that realistic operational testing of these classes of ships with the Navy's independent test agency, OPTEVFOR, is essential. The requirement for operational testing is firmly established in law and DoD regulations. As discussed in our finding, DoD Directive 5000.3 specifically addresses operational testing for special acquisition programs, such as ships that involve procurement of a few items over an extended period. The Navy's response, "There is no plan to operationally test the T-AGOS 19 and the T-AGOS 23 hulls apart from the mission suites. . . ." indicates a misunderstanding of our position. We are not recommending hull testing without the mission system equipment. As the finding indicates, we are recommending realistic operational testing of these ships under typical operating conditions, which would include towing a SURTASS array in high sea states.

The Navy's response to Recommendation A.1.a. indicates that operational issues regarding the capability of the SWATH T-AGOS platforms to support the missions' systems will be adequately addressed in the TEMP's for the SURTASS Block Upgrade and the Second Acoustic System. We reviewed a draft copy of the SURTASS Block Upgrade TEMP. The draft TEMP specifically referenced the T-AGOS 19 Class platforms and indicated that the Block Upgrade will be operationally tested with the T-AGOS 20 ship (a T-AGOS 19 Class platform). Under the operational test objectives for the Block Upgrade, the draft TEMP indicated that an assessment would be made to determine whether the SWATH design characteristics and seakeeping capability support the SURTASS mission requirements. The TEMP did not address specific SWATH T-AGOS operational

requirements, such as demonstrating the ability of the ship to operate in high sea states. The Second Acoustic System TEMP, issued November 7, 1989, did not identify any operational testing and evaluation objectives that specifically addressed the SWATH A platform.

We consider the Navy's planned actions to be responsive to Recommendation A.1.a. because the Navy plans to perform integrated operational testing of the mission systems with the SWATH T-AGOS ship platforms. Also, DOT&E and OPTEVFOR will oversee the operational testing. Based on the September 29, 1989, OSD memorandum, the expansion of the SURTASS Block Upgrade TEMP, and the issuance of the Second Acoustic System TEMP, we have added Recommendation A.2.b., which addresses the need for DOT&E to require the SURTASS Block Upgrade and the Second Acoustic System TEMP's to include testing of critical T-AGOS 19 Class and SWATH A Class operational requirements. We believe that the TEMP's should address specific SWATH T-AGOS operational requirements, such as demonstrating the ability of the ship to perform its mission in high sea states. We request that DOT&E provide comments to Recommendation A.2.b. in response to the final report.

We have revised Recommendation A.1.b. to require the Assistant Secretary of the Navy (Shipbuilding and Logistics) to request a preliminary assessment from OPTEVFOR on the ability of a T-AGOS 19 Class ship to perform its operational mission prior to exercising the first option on the SWATH A Class contract. OPTEVFOR's preliminary assessment would be based on its voluntary involvement in the T-AGOS 19 technical trials and INSURV trials, and its formal participation in the integrated operational test of the Block Upgrade on a T-AGOS 19 Class platform. Draft Recommendation A.1.b. required the Assistant Secretary to demonstrate the operational effectiveness and suitability of the small waterplane area twin hull ships through operational testing of the T-AGOS 19 before exercising the contract option for the second SWATH A Class ship. We still believe that the Navy should demonstrate the operational effectiveness and suitability of this unique hull form to supporting the SURTASS mission before making major investments in the SWATH A Class ships. We believe that our position is logical and meets the intent of DoD guidance relating to operational testing and evaluation. Furthermore, the Acting Director, Operational Test and Evaluation, agreed with us that from a testing perspective, this is precisely the philosophy DOT&E strives to achieve and it will endeavor to meet the recommendation if it can be done. However, we realize that draft Recommendation A.1.b. may not have been feasible without impacting the SWATH A Class schedule. According to the Block Upgrade TEMP, the Navy plans to operationally test the Block Upgrade with the T-AGOS 20 (the first T-AGOS 19 Class ship to receive the Block Upgrade) during the second quarter of fiscal

year 1992. The Navy plans to exercise the option for the first follow-on SWATH A ship between October 1, 1991, and February 28, 1992. Therefore, it is not feasible to expect OPTEVFOR's formal report to be issued prior to the scheduled exercise of the first option on the SWATH A contract. The intent of the recommendation was for the Navy not to exercise the first SWATH A option if there were significant issues or "show stoppers" concerning the ability of the T-AGOS 19 Class to perform its operational mission. We believe the revised Recommendation A.1.b. accomplishes this purpose. We request that the Navy provide comments to the revised Recommendation A.1.b. in response to the final report.

We disagree with the Navy's position on Recommendations A.1.c. and A.1.d. on TEMP's for shipbuilding programs. The Navy's position is not supported by DoD regulations or public law. DoD Directive 5000.3 does not exclude ships from the requirement to have a TEMP. Also, United States Code, title 10, section 2400(c), effective November 29, 1989, requires a TEMP for each naval vessel program and military satellite program. We believe that the T-AGOS 19 Class and the SWATH A Class programs should have a TEMP and that these plans should be staffed through the appropriate organizations. If the operational testing aspects of the mission system TEMP's can be expanded to cover the relevant SWATH T-AGOS operational issues, then the TEMP's for the T-AGOS 19 Class and the SWATH A Class could reference the mission system TEMP's in the operational testing area. We ask that the Navy reconsider its position on Recommendations A.1.c. and A.1.d. and provide comments to the final report.

The Navy concurred with Recommendation A.1.e. However, for its comments to be fully responsive, we ask that the Navy provide an anticipated completion date for resolving the conflict between SECNAV Instruction 5000.2 and OPNAV Instruction 3960.10C.

We disagree with the Navy's position on Recommendation A.1.f. We believe that the lack of realistic operational testing by the Navy's independent test agency, the lack of a cohesive test management plan addressing all phases of testing, and inadequacies in the Navy's guidance concerning testing are material internal control weaknesses. According to DoD Directive 5010.38, Internal Management Control Program, April 14, 1987, a material internal control weakness must be a condition in which management controls, or compliance with them, do not provide reasonable assurance that the objectives of the internal management control program are being met. We believe that each weakness cited is the result of either a lack of compliance with established DoD criteria relating to operational testing and evaluation or TEMP's, or conflicting Navy guidance relating to operational testing. Therefore, we ask that the Navy reconsider its opinion on Recommendation A.1.f. and provide comments to the final report.

We consider that DOT&E's actions relating to draft Recommendation A.2. (renumbered Recommendation A.2.a.) meet the intent of the recommendation. The September 29, 1989, OSD memorandum designating the "SURTASS sensor system" to receive OSD operational and development test and evaluation oversight contained an attachment that explained the oversight additions and deletions. The attachment stated that the "SURTASS ship and sensor was added because it is a new hull-type supporting the sensor package." Therefore, DOT&E will exercise oversight over the SWATH T-AGOS ships, which would fulfill the intent of the recommendation.

B. Logistical Reviews of Military Sealift Command Ships

FINDING

The Navy did not consistently perform logistical reviews of ship acquisitions for the Military Sealift Command. This situation existed because the Navy's logistics policy group was following a long established policy interpretation of excluding Military Sealift Command acquisitions from independent logistical reviews. As a result, these ships may reach the fleet with significant logistical problems, which could affect the ships' capability to fulfill their mission and could require additional resources to correct.

DISCUSSION OF DETAILS

Background. OPNAV Instruction 5000.49A, "Integrated Logistic Support in the Acquisition Process," January 30, 1987, establishes policy and procedures for integrated logistics support. This instruction applies to all phases of all Navy acquisitions that will introduce systems or equipment that Naval forces operate, maintain, or support. The instruction specifically includes acquisitions undertaken on behalf of the Military Sealift Command or the U.S. Coast Guard. The instruction also outlines the following requirements for logistics support of systems. Before fleet introduction, the Chief of Naval Operations (CNO), Logistics Review Group or the systems command level review board will certify that logistics support is adequate or withhold certification until deficiencies are corrected. When support is certified, an Operational Support Summary will be issued detailing the approved support, and the acquisition will be presented to the cognizant commander for acceptance. These procedures ensure that positive control and responsibility for integrated logistics support products pass clearly from the developing program manager to the fleet user. From program initiation, CNO and system command review will serve as the primary means of integrated logistics support evaluation and certification. The instruction states that the CNO Logistics Review Group will review all Acquisition Category I and II systems, and the systems' commands will review Acquisition Category III and IV programs under their cognizance. These reviews are the primary means of integrated logistics support evaluation and certification and are the only reviews independent of the program manager's office. OPNAV Instruction 5000.49A emphasizes that resource requirements for logistics support should be funded at a level sufficient to meet stated operational requirements and should include resources necessary to evaluate the support.

OPNAV Instruction 4105.3, "Integrated Logistics Support (ILS) Review and Appraisal," July 16, 1986, established the Logistics

Review Group and set forth policy and procedures for the review and certification of the adequacy of integrated logistics support. This instruction states that it applies to all phases of all acquisitions that will introduce systems to be operated, maintained, and supported by Navy or Marine Corps forces with the exception of systems under the responsibility of the Director, Strategic Systems Programs or the Nuclear Power Directorate of the Naval Sea Systems Command. Acquisitions for the Military Sealift Command are not mentioned. In discussing the Logistics Review Group principles of assessment, OPNAV Instruction 4105.3 states that the purpose of the Logistics Review Group is to perform an unbiased assessment of planning, management, and execution of integrated logistics support for each acquisition reviewed. The role of the Logistics Review Group is similar to that of the Commander, Operational Test and Evaluation Force, in that they share the same concern for operational suitability of Naval systems.

Navy's Policy on Logistical Reviews. The Deputy Chief of Naval Operations (Logistics) is responsible for establishing and maintaining policies and procedures for review and certification of integrated logistics support. Within this organization, the Integrated Logistics Support Plans, Policy, and Assessment Division has overall responsibility for integrated logistics support, and the Logistics Assessment Branch has specific responsibility for performing reviews for the Logistics Review Group. We will refer to these offices collectively as OPNAV.

OPNAV did not perform logistical reviews on Acquisition Category I and II ships acquired for the Military Sealift Command. OPNAV maintained that the Navy's practice over the past 10 years has been to exclude Military Sealift Command ships from logistical review because civilians would operate these ships. According to OPNAV, the reference in OPNAV Instruction 4105.3 to "systems to be operated, maintained, and supported by Navy or Marine Corps forces" was intended to exclude Military Sealift Command acquisitions. When OPNAV Instruction 4105.3 was published in July 1986, the requirement for review and certification of integrated logistics support was set forth in OPNAV Instruction 5000.49. OPNAV Instruction 5000.49A canceled and completely revised OPNAV Instruction 5000.49 in January 1987. This revision specifically requires acquisitions for the Military Sealift Command to meet integrated logistics support requirements, which include review and certification. OPNAV Instruction 4105.3 had not been revised to recognize the increased scope of the integrated logistics support requirements as set forth in OPNAV Instruction 5000.49A.

In May 1989, OPNAV agreed that OPNAV Instruction 5000.49A required that Military Sealift Command acquisitions follow the integrated logistics support guidelines and be certified for

logistics readiness. However, OPNAV maintained that OPNAV Instruction 4105.3, which does not mention acquisitions for the Military Sealift Command, governs the requirement to perform logistical reviews. OPNAV contended that it had limited resources with which to perform Logistics Review Group reviews and that Military Sealift Command ships have not warranted review in the past because Military Sealift Command ships were logistically simple.

NAVSEA's Logistics Appraisal Division performed systems command level logistical reviews of two Acquisition Category III ship acquisitions for the Military Sealift Command during fiscal year 1986 and fiscal year 1988. NAVSEA cited OPNAV Instruction 5000.49A as its requirement to review the logistics support for these ships.

SWATH T-AGOS Ships. The SWATH A Top Level Requirements document, dated April 20, 1988, shows that operating logistic support management for Military Sealift Command ships will be achieved through the Command structure of the Military Sealift Command and OPNAV Instruction 5000.49A. Also, the requirements document states that the SWATH A ships will be fully supported within the Navy supply system, including the use of a standard Navy Coordinated Shipboard Allowance Listing. The SWATH A is the first Military Sealift Command ship to enter the acquisition process since OPNAV Instruction 5000.49A was issued in January 1987.

On January 13, 1989, the SWATH A Assistant Project Manager requested the OPNAV Logistics Assessment Branch's opinion on whether a logistical review was required and could be scheduled before the Milestone II decision in April 1989. On March 8, 1989, OPNAV responded that a logistical review was not required because OPNAV Instruction 4105.3 applied only to systems that will be "operated, maintained, and supported by Navy or Marine Corps forces." We discussed this decision with OPNAV personnel who stated that they had a full schedule for logistical reviews and did not have the resources to review the SWATH A Class before Milestone II. On March 16, 1989, we met with OPNAV and presented our position that a logistical review was required for the SWATH A Class program before Milestone II and that OPNAV was responsible for performing the review because the SWATH A Class was an Acquisition Category II program. OPNAV agreed to have NAVSEA review the program before Milestone II, but NAVSEA later declined. During the same time frame, we informed the Office of the Assistant Secretary of the Navy (Shipbuilding and Logistics) of our position. The Director for Shipbuilding directed that an independent logistics review be conducted on the SWATH A Class program. OPNAV reviewed the program on April 18 and 19, 1989, and provided an interim report at the Navy Program Decision Meeting for the Milestone II review on May 8, 1989.

The logistics review report for the SWATH A Class contained seven findings. Three of the seven findings needed to be corrected before NAVSEA could certify the integrated logistics support program for the SWATH A. The three certification-dependent findings concerned management of technical data from the contractor on contractor-furnished equipment, the distribution of technical data to be received under the terms of the Request for Proposal, and the revision and approval of the Logistics Requirements and Funding Plan. Three of the remaining findings concerned deficiencies in various planning and control mechanisms, such as program documentation, Integrated Logistics Support Plan, and computer-aided acquisition and support planning. The seventh finding addressed an oversight in the ships' specification about fire retardant paint for machinery spaces. As of July 21, 1989, all certification-dependent findings were resolved and NAVSEA certified the integrated logistics support program for the SWATH A as adequate for detailed design and lead ship construction.

As of June 1989, OPNAV would not commit to performing a logistical review on the T-AGOS 19 Class before its introduction to the Military Sealift Command fleet, which was scheduled for FY 1990. The T-AGOS 19 Class is the first class of Military Sealift Command ships to use the Navy supply system for provisioning from program initiation and has gone through Milestones I, II, and III without an independent logistics assessment. On May 25, 1989, OPNAV stated that OPNAV Instruction 4105.3 did not require a review and that a possible review on the T-AGOS 19 Class would be determined by the availability of resources and the results of the final report on the SWATH A Class review.

Need for Logistical Reviews of Military Sealift Command Ships. We took exception to the OPNAV position concerning logistical reviews for Military Sealift Command ships. Both the Military Sealift Command and NAVSEA are committed to future Military Sealift Command ships being provisioned through the Navy supply system, which will mean that these ships will receive supply support from the same Navy Ships Parts Control Center, in Mechanicsburg, Pennsylvania, as regular Navy ships. This change in provisioning concept flaws OPNAV's current interpretation of OPNAV Instruction 4105.3 because the Navy supply system will support these ships. In March 1989, OPNAV conceded that this change added a new dimension to the situation. Military Sealift Command ships have had significant problems in changing over from contractor recommended spares to standard Navy provisioning. A logistical review would evaluate the contract clauses concerning delivery of provisioning technical documentation for the Navy supply system's use and may avoid potential problems in this area. Timely delivery of technical manuals is also a recurring

problem on Military Sealift Command and Navy ships. A logistical review would evaluate the adequacy of contract provisions enforcing delivery requirements for the manuals.

On June 2, 1989, we discussed our position with representatives from the Military Sealift Command supply office and they agreed that logistical reviews for their ships were needed. These representatives stated that the move to full Navy provisioning and the problems they experienced with obtaining provisioning technical documentation from contractors were the same as those encountered in other Navy ship acquisitions. The representatives also provided background on the TAO-191 class oilers, a ship class that transitioned from contractor-recommended spares to modified Navy provisioning. During this transition, problems arose in obtaining technical documentation from the contractor. These problems could have been prevented with a timely review of the contract from a logistical viewpoint. Also, the shipbuilder was required to develop an Integrated Allowance Document, but the Navy failed to make the allowance document a deliverable to the Navy. A contract modification corrected this by adding the allowance document as a deliverable.

In our discussions with Military Sealift Command personnel, we informed them that OPNAV has not been performing independent logistical reviews on Military Sealift Command ships because neither sailors nor marines operated these ships. The Military Sealift Command personnel disagreed with this rationale and pointed out that active duty military detachments are aboard many Military Sealift Command ships, and perform the supply, support, or surveillance mission while civilians operate the ship. The Military Sealift Command personnel stated that a logistical review for a Military Sealift Command ship would include the specifications and request for proposal to evaluate the adequacy of supply support and technical manual planning. This review would ensure that integrated logistics support elements were properly funded and that safety issues and human factors received adequate consideration. As a result, these logistical reviews would prevent logistical problems later in the ship's operating life.

Excluding Military Sealift Command ships from logistical review ignores the importance of Military Sealift Command operated ships in the Navy fleet. Although not combatants, Military Sealift Command ships perform real missions for the Atlantic and Pacific fleet commanders. Both civilian and military personnel operate variants of oilers and re-supply ships that perform the same ship functions.

A Commander, Military Sealift Command, Atlantic's May 1989 message stressed the importance of logistics support to a Military Sealift Command ship. This message discussed logistical issues relating to the TAO-191 Class fleet oilers:

> Providing adequate logistics support to new construction fleet oilers is as important to readiness as any other aspect of the new construction process. As the keel is the foundation on which the ship is physically constructed, the IAD/COSAL (Integrated Allowance Document/Coordinated Shipboard Allowance List) is the foundation on which all shipboard/system logistics support is built.

Conclusion. We believe that there was a definite policy requirement for logistical reviews of ships acquired for the Military Sealift Command. It is not logical to separate the requirements of OPNAV Instruction 5000.49A, which requires logistical certification for ships acquired for the Military Sealift Command, from the scope of OPNAV Instruction 4105.3, which governs the conduct of logistical reviews done for the Logistics Review Group. If integrated logistics support certification is required, then a logistical review for certification is required. OPNAV did not perform logistical reviews for Military Sealift Command ships because civilians staffed them. However, many of these ships have military personnel aboard for mission operations, and the ships are always part of the Navy fleet, regardless of who operates the ship. Military Sealift Command ships are supported through the Navy supply system and experience the same problems as other Navy ships. We believe that the most compelling reason for performing logistical reviews of Military Sealift Command ships is not because policy requires them but because they are needed. Because Acquisition Category I and II ship acquisitions for the Military Sealift Command were not reviewed, logistical problems could remain unidentified and uncorrected. This could affect the ship's capability to perform its mission and could require more resources to correct these problems later.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Deputy Chief of Naval Operations (Logistics):

1. Perform an independent logistical review of the T-AGOS 19 before fleet introduction.

2. Establish logistical reviews required for Military Sealift Command acquisitions and implement appropriate procedures.

3. Revise OPNAV Instruction 4105.3 to specifically include logistical reviews for Military Sealift Command acquisitions.

4. Report in the annual Management Control Certification Statement and track the status of independent logistics reviews for Acquisition Category I and II ships acquired for the Military Sealift Command as a material internal control weakness using the procedures established by OPNAV Instruction 5200.25B, "CNO Management Control Program," dated July 12, 1988.

MANAGEMENT COMMENTS

The Acting Assistant Secretary of the Navy (Shipbuilding and Logistics) conditionally concurred with Recommendation B.1. The Acting Assistant Secretary stated that the T-AGOS 19 program is a mature program and that OPNAV will coordinate with the Program Sponsor, Program Manager, and Military Sealift Command to determine the status of logistics planning and execution. The Acting Assistant Secretary also stated that, if warranted, a logistics review will be conducted at least 6 months prior to the initial operating capability date.

The Acting Assistant Secretary of the Navy concurred with Recommendations B.2., B.3., and B.4 and stated that OPNAV will develop guidelines and procedures for conducting logistics reviews of Military Sealift Command acquisitions. These reviews will be scheduled and conducted selectively, when deemed appropriate by the Program Sponsor, Program Manager, and the Military Sealift Command. The Acting Assistant Secretary stated that OPNAV Instruction 4105.3 will be revised to include provisions for selective logistics reviews of Military Sealift Command ship acquisition programs. The Acting Assistant Secretary also stated that a report will be provided as part of the annual Management Control Certification Statement reflecting the status of independent logistics reviews of Acquisition Category I and II ships acquired for the Military Sealift Command. The complete text of management's comments is in Appendix B.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

We believe that the Navy's planned actions for Recommendation B.1. meet the intent of the recommendation. The Navy's response to Recommendations B.2. and B.3. also appear to be responsive. However, we ask that the Navy, in responding to the final report, provide clarification on what is meant by "selective logistic reviews." Also, to make its comments fully responsive, we ask that the Navy provide estimated completion dates for the actions identified in its response to Recommendations B.2. and B.3. The Navy's actions for Recommendation B.4. are fully responsive.

C. Management Controls

FINDING

The Auxiliary and Special Mission Ship Acquisition Program Office was not fully implementing the management control program. The managers, who have direct responsibility for the projects, were not involved in the assessments of risk and adequacy of management controls over their projects. This situation existed because the program office personnel lacked an understanding of the purpose and intent of the Management Control Program. As a result, assessments of risk and controls may not be adequate to correct potential significant control weaknesses or to prevent unnecessary expenditures of resources to counteract an overestimated risk.

DISCUSSION OF DETAILS

Background. Agencies of the U.S. Government have been required to establish and maintain adequate systems of internal control since the Budget and Accounting Procedures Act of 1950. This act was amended by the Federal Managers' Financial Integrity Act of 1982 (United States Code, title 31, section 3512) to require ongoing evaluations and reports on the adequacy of the systems of internal controls for administrative and functional areas of responsibility. The Office of Management and Budget (OMB) issued Circular A-123, "Internal Control Systems," (revised August 4, 1986) to establish Government policy on internal control and assign management the responsibility for establishing, maintaining, reviewing, and improving internal control systems in each agency. DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, provides guidance for implementing the Federal Managers' Financial Integrity Act and OMB Circular A-123 and assigns responsibilities for internal management control within the Department of Defense. This DoD directive shows that responsible managers are all managers, from top level managers down through operational managers, of all programs and activities, in which funds, property, and other assets must be safeguarded against fraud, waste, and mismanagement; and in which resources must be managed efficiently and effectively.

SECNAV Instruction 5200.35B, "Department of the Navy Management Control Program," May 25, 1988, implements the DoD guidance on the Management Control Program and emphasizes that management is responsible and accountable for adequate controls. OPNAV Instruction 5200.25B, "CNO Management Control Program," July 12, 1988, states that Echelon Two commanders, such as the Commander, Naval Sea Systems Command (COMNAVSEA), shall ensure that management officials at all levels are aware of their management control responsibilities and are accountable for the success or

failure of management control practices. This instruction defines management controls as the plan of organization and all of the methods and measures adopted by management to safeguard its resources, to ensure the accuracy and reliability of its information, to ensure adherence to applicable laws, regulations, and policies, and to promote economy and efficiency. Also, this instruction states that accountability should be reflected in the performance appraisals of military and civilian managers. NAVSEA Instruction 5200.13, "Internal Controls in the Naval Sea Systems Command," June 5, 1986, implements the internal management control program within the Naval Sea Systems Command. This instruction also emphasizes that it is the responsibility of program managers to assess and review controls.

Essential Concepts. OPNAV Instruction 5200.25B defines the essential concepts of the Management Control Program. To implement the Management Control Program, an activity is broken down into assessable units. An assessable unit is a program, function, system, or other entity that can be assessed for inherent risk and adequacy of control procedures. A risk assessment is a documented review by management of an assessable unit's susceptibility to fraud, waste, or mismanagement; loss or unauthorized use; errors in reports and information; illegal or unethical acts; or the perception that such situations may exist. From this review, the manager rates the vulnerability of an assessable unit as high, medium, or low. A management control review is a detailed examination of an assessable unit by the responsible manager to determine the adequacy of controls and to identify and correct deficiencies and weaknesses, using methodology specified by OMB or DoD. An alternative management control review uses the results of audits, computer security reviews, financial systems reviews, inspections, investigations, internal review studies, and management or consulting reviews to determine overall compliance with the General Accounting Office (GAO) internal control standards. In addition to the review, the manager must perform and document tests of controls present in the program.

Assignment of Responsibility. The Program Manager for the Auxiliary and Special Mission Ship Acquisition Program Office is responsible for 29 acquisition projects. The assistant project managers in the program office are responsible for the daily monitoring of specific acquisitions, such as the T-AGOS 19 Class ship acquisition. They report to either the Project Manager for Special Mission Ships or the Project Manager for Auxiliary Ships. These assistant project managers, who are closest to the risk involved in their program, were not specifically held responsible, in performance standards, for assessing the risk of their programs or the controls over them.

Within the program office, the Financial Manager performed the assessments of risk and controls. The Financial Manager's duties included budget execution and financial management. The Financial Manager had no responsibility for project execution or the specific detailed knowledge of the risks and controls present in specific projects, such as the T-AGOS 19 Class and SWATH A Class. The Financial Manager performed the only assessments of risk for the projects without input from the project managers or assistant project managers. At the close of our audit, in June 1989, the Financial Manager planned to perform the first management control evaluations on the T-AGOS 19 Class and SWATH A Class projects.

In October and November 1988, we discussed this issue with OPNAV and SECNAV personnel who are responsible for the implementation of the Management Control Program. According to these officials, the preparation of risk assessments and management control reviews by a financial manager is not an acceptable substitute for the involvement of a responsible manager.

Understanding of the Management Control Program. Because the managers who have direct responsibility for the projects in the Auxiliary and Special Mission Ship Acquisition Program Office did not participate in implementing the Management Control Program, we concluded that they lacked an understanding of the intent and purpose of the program. Also, the managers were unaware of the OPNAV requirement for a critical element on controls in the manager's performance plans until we pointed it out to them at the beginning of the audit in October 1988.

We believe that the program office's lack of controlling management plans for some areas reflected an unawareness of internal and management controls. For example, in the case of the T-AGOS 19 Class and the SWATH A Class, the program office did not prepare overall test and evaluation management plans and configuration management plans. The program office prepared the configuration management plans after our audit started, based on our discussions with them.

A lack of understanding about the Management Control Program is not unusual within the Navy. In submitting the FY 1988 annual management control certification statement to the Secretary of the Navy, the Chief of Naval Operations reported deficiencies in the implementation of the Management Control Program as a major control weakness.

Conclusion. The assessments of risks and adequacy of controls may be inadequate or inaccurate for Special Mission and Auxiliary Ship Acquisition Program Office projects. These inaccurate assessments may allow significant control weaknesses to remain uncorrected, or require unnecessary expenditures of

resources to counteract an overestimated risk. The assessments of risks and controls for projects within the program office should not be delegated to the Financial Manager, but should be performed by the managers who are responsible for the projects.

RECOMMENDATIONS FOR CORRECTIVE ACTION

We recommend that the Program Manager for the Auxiliary and Special Mission Ship Acquisition Program Office:

1. Require the responsible managers for each project to redo the existing risk assessments for their specific acquisition projects.

2. Require the responsible managers for each project to perform the management control reviews of their specific projects.

3. Revise the performance standards of civilian and military managers to reflect accountability for management controls in their projects.

4. Report in the annual Internal Control Certification Statement and track the status of deficiencies identified in the implementation of the Management Control Program, addressed in Recommendations 1., 2., and 3., as material internal control weaknesses using the procedures established by NAVSEA Instruction 5200.13, "Internal Controls in the Naval Sea Systems Command," June 5, 1986.

MANAGEMENT COMMENTS

The Acting Assistant Secretary of the Navy concurred with all recommendations and stated that responsible managers in the Auxiliary and Special Mission Ship Program Office will redo the existing risk assessments for their specific acquisition projects as part of their fiscal year 1990 annual review. The Acting Assistant Secretary indicated that the responsible manager for each project will perform the management control reviews of specific projects, when scheduled. The Acting Assistant Secretary further stated that the Fitness Report or Performance Objectives of each individual in the program office who is directly involved in determining risk assessments and performing management control reviews has been revised to reflect the requirements of OMB Circular A-123. The complete text of management's comments is in Appendix B.

SWATH A Class Ship

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(SHIPBUILDING AND LOGISTICS)
WASHINGTON, DC 20360-5000

4 DEC 1989

MEMORANDUM FOR THE DIRECTOR, ACQUISITION MANAGEMENT DIRECTORATE, OFFICE OF THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

Subj: DRAFT REPORT ON THE AUDIT OF THE ACQUISITION MANAGEMENT OF THE SMALL WATERPLANE AREA TWIN HULL OCEAN SURVEILLANCE SHIPS (PROJECT NO. 9MC-0004)

Encl: (1) DON Comments to Draft Report "Acquisition Management of the Small Waterplane Area Twin Hull Ocean Surveillance Ships" (9MC-0004)

1. We reviewed the subject draft report and do not concur with substantial portions in the area of Operational Testing. We do concur with your recommendations in the areas of Logistical Reviews of Military Sealift Command Ships and Management Controls.

2. Detailed comments are included in enclosure (1).

Frank Swofford
FRANK W. SWOFFORD
By Direction of the Secretary of the Navy

Copy to:
SECNAV
NAVINSGECN
NCB-53

DON Comments to Draft Report "Acquisition Management Of the Small Waterplane Area Twin Hull Ocean Surveillance Ships" (9MC-0004)

A. Operational Testing

FINDING

"The Navy did not plan to conduct operational testing and evaluation with the Navy's independent test agency's oversight on the two classes of Small Waterplane Area Twin Hull (SWATH) Ocean Surveillance Ships (T-AGOS). This situation existed because the Assistant Secretary of the Navy (Shipbuilding and Logistics) did not follow the intent of DOD guidance with the decision to waive operational testing and a Test and Evaluation Master Plan. As a result, the Navy will make major commitments to the SWATH shipbuilding programs and later could determine that the ships are not operationally effective or suitable without retro-fitting."

NAVY COMMENTS ON FINDING

Do not concur. The Navy plans testing of the mission suites to evaluate the capability of the integrated system in an end to end test. There is no plan to operationally test the T-AGOS 19 and T-AGOS 23 hulls apart from the mission suites, but the Navy will evaluate the ability of the hull and propulsion system to support the integrated system mission. Included in the test plan for the Surveillance Towed Array Sensor System (SURTASS) Block Upgrade system, which is the mission suite for the TAGOS-19 class, and in the test program for the SURTASS second acoustic system, which is the mission suite for the TAGOS-23 CLASS, is Commander, Operational Test and Evaluation Force (COMOPTEVFOR) monitoring of Naval Sea Systems Command (NAVSEA) and Inspection and Survey (INSURV) testing of the SWATH TAGOS-19 with an objective of assessing its capacity to support the vessels' mission. The concurrence of development of hull and mission suites with procurement and test programs is of concern, because it forces test results to be less complete than would be ideal at the time that contractual arrangements and procurement economies demand funding decisions be made. The draft Department of Defense Inspector General (DODIG) report appears to be somewhat inconsistent in that it states that no operational testing is to be performed on the ships (i.e., hulls without mission equipment, each managed under a separate program), while it uses cost figures combining hull and mission suite costs in assessing that the programs should be classified "major acquisition systems."

In fact, operational testing is planned on the mission systems when installed in the ships. This type of testing meets precisely the referenced definition for operational testing cited from DOD 5000.3, while testing of the hull and propulsion subsystem without mission systems does not, since it would not test "weapons equipment." Use of the existent independent test agency for hull design testing might be desirable, but it would not be consistent with the concept of "operational testing" as defined, and would represent a departure from their charter in this case. The DODIG concern for an independent evaluation of hulls before commitment of resources to their procurement in quantity is sensible, but is founded in the concept of concurrence between testing and procurement. Judgement must be made regarding the advantages versus the risks of concurrent procurement, but it would not be responsible to always constrain procurement to minimize risk, since this could become significantly more expensive and delay deployment of needed military systems, potentially beyond obsolescence. The DODIG draft report focuses upon the procurement management process without assessing cost impact of alternative scheduling and architectures or the military/security implications of delaying deployment. The latter, in particular, are of concern in making judgment concerning operational testing, and also are considered by acquisition executives.

RECOMMENDATIONS FOR CORRECTIVE ACTION

"We recommend that the Assistant Secretary of the Navy (Shipbuilding and Logistics):

1a. Require operational testing and evaluation with oversight by the Commander, Operational Test and Evaluation Force, for the Navy's two classes of Small Waterplane Area Twin Hull ship acquisition programs, the T-AGOS 19 Class and the SWATH A Class.

1b. Demonstrate the operational effectiveness and suitability of the small waterplane area twin hull ships through operational testing of the T-AGOS 19 before exercising the contract option for the second SWATH A Class ship.

1c. Require the Auxiliary and Special Mission Ship Acquisition Program Manager to prepare a Test and Evaluation Master Plan for the T-AGOS-19 and the SWATH A Class Ship acquisitions programs and to staff the plans through appropriate organizations.

1d. Revise SECNAV Instruction 5000.2 to delete the statement "TEMP is required for ship programs only when COMOPTEVFOR requires formal OT&E for the ship or overall combat system."

1e. Resolve the conflict between SECNAV Instruction 5000.2 and OPNAV Instruction 3960.10C on whether the Chief of Naval Operations (OP-98) or the Commander, Operational Test and Evaluation Force determines whether a new ship class will receive operational test and evaluation and revise the instructions accordingly.

1f. Report in the annual Management Control Certification Statement and track the status of the deficiencies addressed in Recommendations 1a., 1c., 1d., and 1e., as material internal control weaknesses using the procedures established in SECNAV Instruction 5200.35B, 'Department of the Navy Management Control Program,' May 25, 1988.

2. We recommend that the Director, Operational Test and Evaluation exercise operational test and evaluation oversight on the T-AGOS-19 Class and the SWATH A Class acquisition programs." Draft Rec. A.2. Renumbered A.2.a.

NAVY COMMENTS ON RECOMMENDATIONS

1a. Do not concur. We do not believe Operational Test and Evaluation (OT&E) of the T-AGOS 19 Class and SWATH A Class is appropriate. The purpose of OT&E is to verify the ability to perform the mission. The mission of the SWATH ships is to provide a stable platform for deploying SURTASS in the higher sea states. Verification of seakeeping performance must be made through specialized technical testing as opposed to OT&E. We plan to conduct an extensive three-year program of technical trials aboard the T-AGOS 19 Class lead ship which will measure acoustics, powering, maneuvering, seakeeping, and structural integrity. This is much more extensive than is normally conducted for typical new ship programs, for these particular technical areas. The seakeeping trials planned for T-AGOS 19 will involve extensive and complex instrumentation and data collection equipment. Specialized engineering personnel will be required for all aspects for the seakeeping trials, including the trial planning, instrumentation setup and installation, data analysis, data reduction, and trial reporting. OPTEVFOR has been informally invited to participate in these trials; in the event that COMOPTEVFOR identifies critical operational issues not being addressed adequately, he will recommend a change to the test program to CNO.

The technical risks associated with the seakeeping are low. From the full scale Foreign SWATH evaluation, the prediction techniques for T-AGOS 19 seakeeping have been determined to be accurate. The SWATH models and design tools, used extensively in this ship design have been validated using actual data from this evaluation. Since the model tests and full scale predictions agree, we can anticipate that no adverse effects will result from the full scale testing of T-AGOS 19. With regard to the Foreign SWATH Evaluation Program, the DODIG states on page 30, "The tests 15
did not simulate a realistic SWATH T-AGOS operating environment because they were not made pulling a SURTASS array and did not involve a typical SWATH T-AGOS crew." The SURTASS handling system is identical for T-AGOS 1, T-AGOS 19, and SWATH A Class ships. We anticipate no design problems with the SURTASS Handling system as a result of the increased sea states expected in deployment of the SWATH ships. The handling system for the Second Acoustic System will be evaluated aboard SWATH A (T-AGOS 23) in conjunction with OT&E of the Second Acoustic System.

The critical operational issues regarding the capability of the SWATH platforms to support the mission payloads will be adequately addressed in the Test and Evaluation Master Plans (TEMPS) for the SURTASS Block Upgrade and Second Acoustic System. COMOPTEVFOR will evaluate the system/platform interoperability during OT&E events for these systems.

1b. Do not concur. We do not agree that OT&E is appropriate for the T-AGOS 19 or SWATH A ship platforms, as previously stated in the response to DODIG recommendation 1a., above. Since the requirement is urgent and the risk of discovering significant design problems small in the T-AGOS 19, our current plan is considered sound.

1c. Do not concur. As explained in the response to DODIG Recommendation 1d., below, TEMPs are not required for ship programs that do not have OT&E.

1d. Do not concur. The DODIG states on page 35 of the 18
report, "We believe that the Navy misinterpreted DOD guidance to mean that a TEMP was not required for ship programs if there was no formal operational test and evaluation." The Navy did not misinterpret DOD guidance regarding TEMPs for ship programs. The Navy routinely advises OSD which ship programs it considers to require TEMPs and which do not. To date, OSD has not disagreed

with Navy's advice on any program. Most of the Navy's ship acquisition programs do not include OT&E. It has always been Navy practice not to require TEMPs for ship programs that do not have OT&E. The basic purpose of the TEMP is to combine and integrate the Developing Agency's (DA's) Developmental T&E (DT&E)and COMOPTEVFOR's OT&E into one master plan. Without OT&E, there is no need for a master plan to integrate DT&E and OT&E. A secondary purpose is to allow the Program Manager to make good projections of OT&E costs, and to allow fleet, range, simulator, and target schedulers to plan well in advance for the required services. Without OT&E, a plan is not required to project and plan for OT&E costs. A third purpose for TEMP, in some programs, is to publish top level T&E thresholds. However, in the case of ships, all programs have a Decision Coordinating Paper (DCP) and a Top Level Requirements (TLR) regardless of whether or not OT&E is included. Even without OT&E, the production acceptance T&E routinely conducted on each new ship verifies accomplishment of the T&E thresholds. Without OT&E or DT&E, there really is no useful purpose served by a TEMP.

1e. Concur. We will have all lower tier instructions brought into conformance with SECNAVINST 5000.2.

1f. Do not concur. As discussed in the individual responses to each recommendation, none are applicable except possibly Recommendation 1e.

2. Do not concur. We do not believe the T-AGOS-19 or the SWATH A programs warrants DOT&E oversight since we do not believe OT&E is appropriate as discussed in our response to DODIG Recommendation 1. The SURTASS Sensor system is identified as a Director, Operational Test & Evaluation (DOT&E) oversight program. Draft Rec. A.2. Renumbered A.2.a.

B. LOGISTICAL REVIEWS OF MILITARY SEALIFT COMMAND SHIPS

FINDING

"The Navy did not consistently perform logistical reviews of ship acquisitions for the Military Sealift Command (MSC). This situation existed because the Navy's logistics policy group was following a long established policy interpretation of excluding MSC acquisitions from independent logistical reviews. As a result, these ships may reach the fleet with significant logistical problems, which could affect the ships' capability to fulfill their mission and could require additional resources to correct these problems."

NAVY COMMENTS TO FINDING

Concur in part. The DODIG is correct in their assessment that there has not been consistent independent logistics reviews of MSC acquisitions with the exception of special interest programs, i.e. T-AH and T-AGOS 23. The portion of the finding that states, "As a result, these ships may reach the fleet with significant logistical problems, which could affect the ships' capability to fulfill their missions and could require additional resources to correct" is not borne out in fact. PMS 383 has successfully delivered more than 20 ships to MSC in the past four years. The MSC acquisitions are constructed at a much lower cost than U.S. Navy operated ships, however all indications are that readiness is on a high level. No problems identified to date have prevented these ships from performing and accomplishing their assigned missions.

Though an earlier logistics review of T-AGOS 19 may have been beneficial to this MSC acquisition, the types of problems identified in the DODIG report on the T-AO program would not have been discovered in a routine logistics review. The problems identified on the T-AO program occurred as a result of implementing new provisioning requirements and were related to the conversion from vendor recommended sparing to Navy Standard provisioning in the middle of the acquisition process.

All MSC acquisitions are planned and developed in conjunction with MSC's full involvement. MSC, an organization independent from NAVSEA, reviews and comments on all Integrated Logistics Support (ILS) requirements. They are involved from conception to ship delivery. NAVSEA develops logistics requirements to support MSC ship acquisition.

RECOMMENDATIONS FOR CORRECTIVE ACTION

"We recommend that the Deputy Chief of Naval Operations (Logistics):

1. Perform an independent logistical review of the T-AGOS 19 before fleet introduction.

2. Establish logistical reviews required for the Military Sealift Command acquisitions and implement appropriate procedures.

3. Revise OPNAV Instruction 4105.3 to specifically include logistical reviews for Military Sealift Command acquisitions.

4. Report in the annual Management Control Certification Statement and track the status of independent logistics reviews for Acquisition Category I and II ships acquired for the Military Sealift Command as a material internal control weakness using the procedures established by OPNAV Instruction 5200.25B, 'CNO Management Control Program,' dated July 12, 1988."

NAVY COMMENTS ON RECOMMENDATIONS

1. Concur conditionally. The T-AGOS 19 program is a mature program (beyond Milestone III). OPNAV will coordinate with the Program Sponsor, Program Manager and Military Sealift Command to determine the status of logistic planning and execution. If warranted, a logistics review will be conducted at least six months prior to the Initial Operating Capability Date (IOC Date).

2. Concur. OPNAV will develop guidelines and procedures for conducting logistic reviews of Military Sealift Command acquisitions. These reviews will be scheduled and conducted selectively, when deemed appropriate by the Program Sponsor, Program Manager and Military Sealift Command.

3. Concur. OPNAV Instruction 4105.3 will be revised to include provisions for selective logistic reviews of Military Sealift Command ship acquisition programs.

4. Concur. A report will be provided as part of the annual Management Control Certification Statement reflecting the status of independent logistics reviews of Acquisition Category I and II ships being acquired for the Military Sealift Command. The procedures of OPNAVINST 5200.25B will be utilized.

C. MANAGEMENT CONTROLS

FINDING

"The Auxiliary and Special Mission Ship Acquisition Program Office (PMS383) was not fully implementing the management control program. The managers, who have direct responsibility for the projects, were not involved in the assessment of risk and adequacy of management controls over their projects. This situation existed because the program office personnel lacked an understanding of the purpose and intent of the Management Control Program. As a result, assessment of risks and controls may not be adequate to correct potential significant control weakness or to prevent unnecessary expenditures of resources to counteract an overestimated risk."

NAVY COMMENT ON FINDING

Partially concur. PMS383 has complied with the intent of the guidance provided in both SECNAVINST 5200.35B of 25 Mar 1988 and OPNAVINST 5200.25B of 12 Jul 1988. Responsibility for program management and execution and for the performance of management control assessments and reviews has been properly assigned to the Program Manager. Risk assessments, management control reviews, annual certification statements and follow-up systems have all been fully implemented. A viable internal control system is in place within PMS383. However, we will ensure that the Project Manager and Assistant Project Manager executes all aspects of internal controls for their cognizant programs. NAVSEA INST 5200.13 of 5 Jun 1986 is currently being revised to further reflect the guidance in the SECNAVINST and OPNAVINST. The revised instruction will reiterate the responsibilities of NAVSEA managers concerning the internal control program and re-emphasize the training aspect to make sure all NAVSEA responsible managers are aware of the program and at least have a working knowledge of the internal control program.

RECOMMENDATION FOR CORRECTIVE ACTION

"We recommend that the Program Manager for the Auxiliary and Special Mission Ship Acquisition Program Office:

1. Require the responsible managers for each project to redo the existing risk assessments for their specific acquisition projects.

2. Require the responsible managers for each project to perform the management control reviews of their specific projects.

3. Revise the performance standards of civilian and military managers to reflect accountability for management controls in their projects.

4. Report in the annual Internal Control Certification Statement and track the status of deficiencies identified in the implementation of the Management Control Program, addressed in Recommendation 1., 2., 3., as material internal control weaknesses using the procedures established by NAVSEAINST 5200.13, 'Internal Controls in the Naval Sea Systems Command,' 5 Jun 1986."

NAVY COMMENTS ON RECOMMENDATIONS

1. Concur. Each responsible manager in PMS 383 will redo the existing risk assessments for their specific acquisition projects as part of our annual review, scheduled for FY 90.

2. Concur. The responsible manager for each project will perform the management control reviews of their specific projects, when scheduled.

3. Concur. The Fitness Report/Performance Objectives of each individual within PMS 383 who is directly involved in determining risk assessments and performing management control reviews has been revised to reflect requirements of OMB Circular A123 (safeguard against waste, fraud and abuse). Action complete.

4. Concur. Recommendation 1 & 2 above will be tracked as a material internal control weakness in accordance with NAVSEAINST 5200.13.

OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, DC 20301-1700

17 November 1989

OPERATIONAL TEST AND EVALUATION

Final Report
Page Number

MEMORANDUM FOR DoD INSPECTOR GENERAL, DIRECTOR ACQUISITION MANAGEMENT

SUBJECT: Comments on Draft Audit Report, Acquisition Management of the Small Waterplane Area Twin Hull Ships (SWATH), Project 9MC-0004

Your draft audit report, forwarded by memorandum dated 29 September 1989, has been reviewed and comments are provided below as requested:

FINDING A (p. 21): 11

"The Navy did not plan to conduct operational testing and evaluation with the Navy's independent test agency's oversight on the two classes of Small Waterplane Area Twin Hull (SWATH) Ocean Surveillance Ships (T-AGOS)."

COMMENT:

Partially concur, although this statement is somewhat misleading. The Navy did not plan to operationally test the T-AGOS 19 and T-AGOS 23 hull designs apart from their mission suites. Operational testing is planned on the mission systems when installed in the ships. At the time of the audit, the Navy's plans for testing of the mission suites were not sufficiently defined to enable determination of whether these ships would be the platforms for the mission suites when they were operationally tested. Operational testing intentionally does not test the design technical performance of the hull (i.e., the engineering design concept, SWATH) and propulsion subsystems, but it does evaluate their ability to support the integrated system mission. Included in the test plans for both the SURTASS Block Upgrade system (T-AGOS 19 class) and the SURTASS LFA system (T-AGOS 23 class) is COMOPTEVFOR monitoring of NAVSEA and INSURV technical testing of the SWATH T-AGOS-19

with an objective of providing an early assessment of its capacity to support the vessels' missions. The primary thrust of these test programs, however, is to test the complete mission systems in an operationally realistic environment. Use of the existent independent operational test agency (OTA) for direction of hull design testing might provide objectivity, but it would not be consistent with the concept of "operational testing," and would inappropriately involve that organization in system development.

RECOMMENDATION 1.a (p. 38): 20

"...that the Assistant Secretary of the Navy (Shipbuilding and Logistics):

a. Require operational testing and evaluation with oversight by the Commander, Operational Test and Evaluation Force, for the Navy's two classes of Small Waterplane Area Twin Hull ship acquisition programs, the T-AGOS 19 Class and the SWATH A Class."

COMMENT:

Partially concur. This recommendation has already been implemented in the sense that integrated testing is being conducted by COMOPTEVFOR with DOT&E oversight, but hull testing without mission systems is a developmental function as defined by DoD 5000.3, and COMOPTEVFOR management would compromise that agency's intended independence from developmental functions as well as being inadequate to support operational evaluations.

RECOMMENDATION 1.b (p. 38): 20

"Demonstrate the operational effectiveness and suitability of the small waterplane area twin hull ships through operational testing of the T-AGOS 19 before exercising the contract option for the second SWATH A Class ship."

COMMENT:

Partially concur. From a testing perspective, this is precisely the philosophy DOT&E strives to achieve. However, it encompasses the subject of concurrent procurement/production and testing, which is an area at least as directly under the purview of the acquisition executive as the testing authorities, particularly for shipbuilding programs.

Final Report
Page Number

Legislation now under consideration may clarify how these potentially conflicting concerns are to be resolved, and may directly impact the appropriateness of this recommendation, specifically as it applies to when operational testing must be completed to support acquisition decisions for ships. In any case, DOT&E will endeavor to meet this recommendation if it can be done, or as nearly as it can be done.

RECOMMENDATION 1.c (p. 38): 20

"Require the Auxiliary and Special Ship Acquisition Program Manager to prepare a Test and Evaluation Master Plan for the T-AGOS 19 Class and the SWATH A Class ship acquisition programs and to staff the plans through appropriate organizations."

COMMENT:

Concur in the sense that total system TEMP's are prepared for both Surtass Block Upgrade (T-AGOS 19) and SURTASS LFA (T-AGOS 23) systems.

RECOMMENDATION 1.d. (p. 39): 20

Revise SECNAV Instruction 5000.2 to delete the statement "A TEMP is required for ship programs only when COMOPTEVFOR requires formal OT&E for the ship or overall combat system."

COMMENT:

Partially concur. Navy directives must be consistent with public law and DoD directives. Beyond that, they are the responsibility of the Navy.

RECOMMENDATION 1.e (p. 39): 20

"Resolve the conflict between SECNAV Instruction 5000.2 and OPNAV Instruction 3960.10C on whether the Chief of Naval Operations (OP-98) or the Commander, Operational Test and Evaluation Force determines whether a new ship class will receive operational test and evaluation and revise the instructions accordingly."

COMMENT: Concur.

Final Report
Page Number

RECOMMENDATION 2 (p. 39): 21

"We recommend that the Director, Operational Test and Evaluation, exercise operational test and evaluation oversight on the T-AGOS 19 Class and the SWATH A Class acquisition programs." Draft Rec. A.2. Renumbered A.2.a.

COMMENT:

Partially concur. After reviewing these ships and sensor programs, DOT&E decided to exert oversight of the SURTASS sensor systems. Operational test plans require system interoperability, compatibility and other testing with their SWATH platforms, which is a standard part of the determination of system effectiveness and suitability for a ship weapon system. This approach is consistent with the concept of operational testing.

The draft report is confusing in that it uses costs of the combined shipbuilding and mission equipments, managed as four separate programs, to suggest that designation for OSD oversight of the "ships" is appropriate.

INTERNAL CONTROL WEAKNESS (p. 7): 4

"- the lack of realistic operational testing by the Navy's independent test agency,"

COMMENT:

Do not concur. The rationale for non-concurrence is founded in the definition of operational testing and the management approach outlined above.

INTERNAL CONTROL WEAKNESS (p. 7): 4

"- the lack of a cohesive test management plan addressing all phases of testing,"

COMMENT:

Partially concur. Improvements are needed and are being implemented to the TEMPs for the SURTASS sensor systems, but this is a result of an effective test management organization working to improve the existing test management plan.

Final Report
Page Number

4

INTERNAL CONTROL WEAKNESS (p. 8):

"- inadequacies and inconsistencies in the Navy's guidance concerning operational testing and test plans for shipbuilding programs."

COMMENT:

Concur. The Congress is considering legislative clarification to the operational testing requirements for ship construction programs.

Charles E. Adolph
By Direction of the Secretary of Defense

SUMMARY OF POTENTIAL MONETARY AND OTHER BENEFITS RESULTING FROM THE AUDIT

Recommendation Reference	Description of Benefit	Amount and Type of Benefit
A.1.a. and A.1.b.	Realistic operational testing could potentially preclude retrofitting of ships.	Undeterminable *
A.1.c. and A.1.d.	Test and Evaluation Master Plan helps ensure adequacy of developmental and operational testing and provides the framework for different activities to be involved in the testing program.	Undeterminable *
A.1.e.	Consistent guidance on which official determines if a new ship class will require operational testing will help ensure that operational testing is performed when needed.	Undeterminable *
A.1.f.	Tracking internal control deficiencies will help ensure that the deficiencies are corrected for future programs.	Undeterminable *
A.2.a. and A.2.b.	Director, Operational Test and Evaluation, oversight will ensure that the testing programs and plans receive an appropriate level of oversight.	Undeterminable *
B.1	Independent logistical review of the T-AGOS 19 before fleet introduction could preclude expenditure of resources to correct potential logistical problems.	Undeterminable *

B.2. and B.3.	Specific policy and guidance concerning logistical reviews for Military Sealift Command acquisitions will help ensure that these acquisitions receive an appropriate degree of independent logistical review, which could preclude costs associated with future logistical problems.	Undeterminable *
B.4.	Tracking internal control deficiencies will help ensure that the deficiencies are corrected for future programs.	Undeterminable *
C.1. through C.3	Management involvement in the Management Control Program and management accountability for internal controls could preclude costs associated with allowing potential significant control weaknesses to remain uncorrected.	Undeterminable *
C.4	Tracking internal control deficiencies will help ensure that the deficiencies are corrected for future programs.	Undeterminable *

*The monetary benefits were not identifiable because we could not quantify the amount to be derived from realistic operational testing that could potentially preclude retrofitting of ships, the expenditure of resources to correct potential logistical problems that could remain uncorrected without independent logistical reviews, and the costs associated with allowing potential significant control weaknesses to remain uncorrected.

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Office of the Under Secretary of Defense for Acquisition, Washington, DC
Comptroller of the Department of Defense, Washington, DC
Director, Operational Test and Evaluation, Washington, DC

Department of the Navy

Assistant Secretary of the Navy (Shipbuilding and Logistics), Washington, DC
Chief of Naval Operations, Washington, DC
Commander, Operational Test and Evaluation Force, Norfolk, VA
Naval Sea Systems Command Headquarters, Washington, DC
Space and Naval Warfare Systems Command Headquarters, Washington, DC
Commander, Military Sealift Command, Washington, DC
Navy Ships Parts Control Center, Mechanicsburg, PA
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD
Supervisor of Shipbuilding, Conversion and Repair, New Orleans, LA
Resident Supervisor of Shipbuilding, Conversion and Repair, Morgan City, Amelia, LA

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Resources of Hawaii, Inc., Houma, LA
V. L. Logistics, Inc., Ocean Springs, MS

AUDIT TEAM MEMBERS

David Brinkman, Director
John Dillinger, Program Director
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- Senate Committee on Armed Services
- Senate Committee on Governmental Affairs
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