

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

SUPPLY SUPPORT FOR MINE WARFARE SHIPS

Report No. 94-130

June 14, 1994

Department of Defense

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Acronyms

DLA	Defense Logistics Agency
LSA	Logistics Support Analysis
LRG	Logistics Review Group
MCM	Mine Countermeasures
MHC	Mine Hunter Coastal
NAVSEA	Naval Sea Systems Command
NAVSUP	Naval Supply Systems Command
SPCC	Ships Parts Control Center



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202

June 14, 1994

MEMORANDUM FOR ASSISTANT SECRETARY OF THE NAVY
(FINANCIAL MANAGEMENT)
DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Audit Report on Supply Support for Mine Warfare Ships
(Report No. 94-130)

We are providing this final report for your review and comments. The report discusses planning for supply support provided to mine warfare ships. Comments on the draft report were not received by the report date.

DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Commander, Naval Sea Systems Command, and the Director, Defense Logistics Agency, provide comments on the finding and recommendations by July 14, 1994. The directive also requires that your comments indicate concurrence or nonconcurrence with the finding and each recommendation addressed to you. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, state your specific reasons for each nonconcurrence. If appropriate, you may propose alternative methods to carry out the desired improvements.

Recommendations are subject to resolution in accordance with DoD Directive 7650.3 if you nonconcur or fail to comment. We also ask that your comments indicate concurrence or nonconcurrence with the internal control weakness highlighted in Part I.

We appreciate the courtesies extended to our audit staff. If you have questions on this audit, please contact Mr. James Koloshey, Program Director, at (703) 614-6225 (DSN 224-6225). We will give you a formal briefing on the audit results within 15 days of the date of this memorandum if you desire it. Appendix E lists the planned distribution of this report.

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

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 94-130
(Project No. 3AG-0059)

June 14, 1994

**SUPPLY SUPPORT FOR
MINE WARFARE SHIPS**

EXECUTIVE SUMMARY

Introduction. Supply support comprises all management actions, procedures, and techniques used to satisfy spare and repair part requirements of the Navy. Supply support is identified by DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," as one key element of integrated logistics support and, as such, requires explicit plans and adequate resources to satisfy readiness objectives.

Objective. The audit objective was to determine whether adequate supply support was being provided to mine warfare ships. To accomplish this objective, we evaluated the current effectiveness of supply support for the Mine Countermeasures Ships and documented results of Navy reviews for the Mine Countermeasures and Mine Hunter Coastal Ships.

Audit Results. Supply support was not adequate for the Mine Countermeasures and Mine Hunter Coastal Ships. The Navy took more than 30 days to repair inoperative equipment in 18 of 36 Mine Countermeasures Ships' casualty reports reviewed. The Chief of Naval Operations, Logistics Review Group, also identified several integrated logistics support weaknesses in separate reviews. Those deficiencies resulted in decreased readiness and additional costs in procuring material through other than normal channels. We noted, however, that both the Mine Warfare Ships Program Office and the Navy Ships Parts Control Center took extraordinary efforts before and during our audit to correct supply support deficiencies.

Internal Controls. The audit identified no material weaknesses in internal controls related to DoD Directive 5010.38. The internal control weakness we found is discussed in Part II. Controls assessed are discussed in Part I.

Potential Benefits of Audit. Potential monetary benefits will be realized through reduced cannibalization costs. These monetary benefits could not be quantified. The nonmonetary benefits will be enhanced operational readiness (Appendix C).

Summary of Recommendations. We recommended that the Commander, Naval Sea Systems Command, require program managers to plan adequately for supply support on future acquisitions and major ship modifications of mine warfare ships. We also recommended that the Director, Defense Logistics Agency, implement procedures in the Standard Automated Materiel Management System to notify item managers when stocking of a critical item becomes necessary.

Management Comments. The Navy and Defense Logistics Agency did not respond to the draft report. The Commander, Naval Sea Systems Command, and the Director, Defense Logistics Agency, are requested to provide comments on the final report by July 14, 1994.

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

Part I - Introduction

Background

Supply Support. Supply support comprises all management actions, procedures, and techniques used to determine requirements to acquire, catalog, receive, store, transfer, issue, and dispose of secondary items. Such actions include provisioning for both initial support and replenishment supply support as well as acquisition of logistics support for support and test equipment. DoD Instruction 5000.2, part 7, "Defense Acquisition Management Policies and Procedures," February 23, 1991, identifies supply support as a key element of integrated logistics support.

Logistics Support Analysis. DoD Instruction 5000.2, part 7, section A, defines logistics support analysis (LSA) as "the selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the systems engineering process, to assist in: causing support considerations to influence design; defining support requirements that are related optimally to design and to each other; acquiring the required support; and providing the required support during the operational phase at minimum cost." Tasks for accomplishing LSA are in Military Standard 1388-1A, "Logistics Support Analysis," April 11, 1983.

Objectives

Our audit objective was to determine the adequacy of supply support for mine warfare ships. Specifically, we determined the effectiveness of Navy plans to obtain supply support. We also reviewed internal controls applicable to supply support. We eliminated fast combat support ships previously announced for the audit because the ships have not been in use long enough for adequate data to be collected.

Scope and Methodology

This performance audit was conducted from July 1993 through January 1994 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of internal controls as were deemed necessary. With the assistance of an operations research analyst from the Quantitative Methods Division, Audit Planning and Technical Support Directorate, Inspector General, DoD, we selected a judgement sample of 40 of 3,429 requisitions submitted on casualty reports from April 1988 through September 1993 for Mine Countermeasures (MCM) Ships. The Navy Ships Parts Control Center (SPCC) casualty report data base, the primary computer-generated data source for our review, was verified by comparing computer-generated data to source

documents. We assessed supply support primarily for the MCM Ships and documented the results of Navy reviews for the MCM and Mine Hunter Coastal (MHC) Ships (Appendix A). Monetary benefits are not quantifiable because the amount of future cannibalizations and procurement of spares are undeterminable. See Appendix D for a list of organizations visited or contacted.

Internal Controls

The audit identified no material internal control weaknesses as defined by DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987. The internal control weakness, which we considered non-material, is discussed in Part II. Senior officials responsible for internal controls in the Department of the Navy and Defense Logistics Agency will be provided a copy of the report.

Prior Audits and Other Reviews

The General Accounting Office, Office of the Inspector General, Department of Defense; and the Naval Audit Service have not assessed the supply support for mine warfare ships within the last 5 years.

Other Matters of Interest

We also evaluated supply support for the Landing Helicopter Dock Ships. Our analysis of sampled casualty reports showed that most problems were not attributable to inadequate supply support. Additionally, the Chief of Naval Operations, Logistics Review Group, found that supply support was 97.8 percent complete at delivery of the first ship. Therefore, we made no recommendations concerning the Landing Helicopter Dock Ships.

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Part II - Finding and Recommendations

Supply Support

Supply support was inadequate for the Mine Countermeasures (MCM) and Mine Hunter Coastal (MHC) Ships. The Navy took more than 30 days to repair inoperative or malfunctioning equipment on 18 of 36 of the MCM casualty reports reviewed. Those delays occurred because acquisition planning and controls for integrated logistics support were not comprehensive enough to preclude many supportability problems. Consequently, ships were unable to perform assigned mission responsibilities for a period exceeding the Navy average.

Background

The Naval Sea Systems Command (NAVSEA), the Navy Ships Parts Control Center (SPCC), and the Defense Logistics Agency (DLA) are responsible for providing supply support to various weapon systems throughout the acquisition cycle.

NAVSEA. NAVSEA is an acquisition and technical planning command responsible for acquiring both ships and combat systems. The ship's acquisition program manager is responsible for acquiring all hull, mechanical, and electrical components of the ship. The ship's program manager also procures all initial provisioning items. The combat systems' program managers acquire weapon systems such as sonar and gun systems that are physically placed aboard the ship. Integration of combat systems into the ship is the responsibility of program managers. In-service engineering activities assist the program managers in technical reviews and evaluations of ships and combat systems.

SPCC. A subordinate command of the Naval Supply Systems Command (NAVSUP), SPCC performs program support functions, including inventory management of spare and repair parts. SPCC participates in provisioning conferences and develops and coordinates supply support agreements with other inventory managers such as DLA.

SPCC also serves as the Navy focal point for tracking and reporting the status of casualty reports that are the primary means of reporting the diminished combat readiness of a vessel due to inoperative or malfunctioning equipment. NAVSUP Instruction 3040.3, "Naval Supply Systems Command Response to Fleet Casualty Reports," August 15, 1990, requires that all NAVSUP elements take prompt and aggressive action in response to fleet casualty reports; however, this Instruction does not provide specific time intervals for resolution of casualty reports.

DLA. DLA is responsible for providing supply support for nonreparable items. More than half of all secondary items utilized by the mine warfare ships are managed by DLA. This number has increased substantially through a consumable item transfer program currently underway.

Assessing Supply Support

Analysis of Casualty Reports. We reviewed 36 of 1,165 casualty reports issued from April 1988 through September 1993 by MCM Ships. We did not review casualty reports for the MHC Ships due to a lack of operational data. The casualty reports were related to the sample of 40 requisitions. The number of casualty reports differed from the number of requisitions because several requisitions were issued on the same casualty report. Table 1 shows the time frames required to close the sampled casualty reports.

Table 1. Resolution of Casualty Reports

<u>Days to Resolve Casualty</u>	<u>Number of Casualty Reports</u>
0 to 30 Days	18
31 to 60 Days	8
61 to 120 Days	7
More than 120 Days	<u>3</u>
Total Casualty Reports	<u>36</u>

The Navy took more than 30 days to resolve 18 of 36 MCM casualty reports. The 30-day timeframe is double the Navy average; therefore, we categorized each casualty report that was open more than 30 days as unresolved for an excessive period of time. Table 2 shows the reasons casualty reports were open.

Table 2. Reasons for Casualty Report Delays

<u>Reason Casualty Resolution Took More Than of 30 Days</u>	<u>Number of MCM Casualty Reports</u>
Lack of parts availability	8
Cascading failures	5
Other conditions	<u>5</u>
Total casualty reports open more than 30 days	<u>18</u>

We further analyzed the two primary categories: parts availability and cascading failures. "Other conditions" were not directly related to supply support.

Parts Availability. Parts availability problems for 8 of 18 casualty reports occurred either because parts were not available (7 casualty reports) or shipping times were excessive (1 casualty report). The contractor provided replacement factors that estimated long intervals between actual replacements did not justify stocking those items. Engineering organizations did not review the replacement factors and the application of those sampled items to their

Supply Support

operations. This topic is discussed in detail later in this report. We did not identify the circumstances that contributed to the extended shipping time; therefore, we did not evaluate the reasonableness of this time interval.

Cascading Failures. Five casualty reports were open because of cascading failures. Cascading failures are additional failures encountered during the repair process that were not originally diagnosed. Cascading failures are frequently caused by damage inflicted during the repair process. This damage is often the result of inadequate technical manuals and training.

Logistics Readiness Reviews. The Chief of Naval Operations, Logistics Review Group (LRG), also identified several supply support weaknesses in separate reviews conducted after commissioning of the first MCM and MHC Ships.

MCM Ships. The LRG stated in an August 1988 report that deficiencies were found in supply support, concluding that this problem area requires other methods to support initial operational capability. The LRG also stated that numerous problems existed with the review of provisioning technical documentation; also, inadequate ordering, processing, and positioning of spares resulted in delayed supply support for the MCM-1 Ship. The LRG concluded that numerous ship subsystems would not have supply system stock in place until the middle of the following year (1989). We note that the supply availability rate (March 1993 through February 1994) for the MCM Ships was 79 percent as compared to the overall Navy rate of 88 percent.

MHC Ships. The LRG stated in a January 1989 report that deficiencies were also found in supply support for MHC Ships.

- o The Program Office needed to analyze the supply support concept to ensure readiness thresholds are achieved at minimal life-cycle costs. Tradeoffs needed to be conducted that considered the operational scenario, reliability and maintenance characteristics, and readiness requirements.

- o Significant supply support funding shortfalls existed for FYs 1989 through 1994.

The LRG, in a February 1993 assessment, identified several supply support issues that needed to be addressed for the MHC-51 Ship. Those issues include late provisioning of technical data packages, lack of adequate interim supply support planning, improperly prioritized parts, and incorrectly assigned mission criticality codes.

Planning for Support

Logistics Support Analysis. Logistics support analysis for the MCM Ships was incomplete. The goal of logistics support analysis is to define the necessary support resources, including supply support, required to support a weapon

system over its life cycle as stated in DoD Instruction 5000.2. The integrated logistics support plan stated that the logistics support analysis for the MCM Class Ships was performed in accordance with Military Standards 1388-1A and 1388-2B as tailored by the MCM-1 LSA Plan. According to cognizant program office personnel, LSA deliverables for the MCM-1 Ship were deleted from the production contract due to funding constraints.

Provisioning. Provisioning documentation was incomplete for both the MCM and MHC Ships. Provisioning is the management process of determining and acquiring the type and quantity of support items necessary to operate and maintain a ship or combat system.

- o The Logistics Review Group found numerous problems with the processing and reviewing of provisioning documentation for the MCM Ships in the 1988 Logistics Readiness Review.

- o The Logistics Review Group identified 18 MHC provisioning documents that were previously rejected by the Navy and were still outstanding. They also identified 61 instances where MHC provisioning documentation had not been delivered to the Navy Ships Parts Control Center in time to allow for adequate provisioning.

Post Production Support. The Mine Warfare Ships Program Office did not conduct an analysis to identify parts that may go out of production during the life cycle of the ship. Such analysis is required by Military Standard 1388-1A. As a result, spare and repair parts for the hydraulic pump, which drives the minesweep crane used on the first eight MCM Ships, were not procured. When SPCC ordered the pump, the manufacturer informed SPCC that the pump was out of production. As a result, no spares are currently in the Navy inventory that can be provided to the vessels when unserviceable pumps are sent into the manufacturer for repair.

Controls

Engineering Review. The Mine Warfare Ships Program Office did not task in-service engineering activities to conduct reviews of replacement factors provided by contractors for the MCM Ships. Additionally, Failure Modes Effects and Criticality Analysis was not performed for the Isotta-Fraschini Engine; four of these engines power most MCM ships.

Replacement Factors. We compared actual to estimated mean time between replacement rates for 16 of 18 items requisitioned on casualty reports open more than 30 days. We considered the estimate to be inaccurate when the actual rate was either 100 percent more (5 items) or 50 percent less (5 items) than the estimated rate. As a result, requirements for component parts for the MCM Ships were both over- and underestimated due to inaccurate replacement factors. Stock shortages may result when actual failures exceed estimated failures. Unnecessary procurements may result when actual failures are less

Supply Support

than estimated failures. Appendix B shows the results of our review. SPCC was the technical review organization for the MCM Ship when the contractor submitted replacement factors. SPCC did review some replacement factors; however, SPCC had limited expertise to assess those failure factors adequately and to make any necessary adjustments.

Failure Modes Effects and Criticality Analysis. The main purpose of the Failure Modes Effects and Criticality Analysis is early identification of catastrophic and critical failure possibilities so that they can be eliminated through design changes. Four of the 18 MCM casualty reports were open more than 30 days due to problems with the Isotta-Fraschini Engine, including one casualty report that took 165 days to resolve due to a catastrophic failure. This engine has a history of problems involving failures of cylinder heads, bearings, crankshafts, and the engine actuator. The Failure Modes Effects and Criticality Analysis was not performed for any other major hull, mechanical, or electrical system of the ship. According to program personnel, funding and time constraints were the primary reasons for not performing this analysis.

DoD Instruction 5000.2, part 6, states that reliable and maintainable systems are achieved through a disciplined engineering approach employing the best design and manufacturing processes. Replacement factor review and Failure Modes Effects and Criticality Analysis are critical steps in the design process.

System Controls. DLA's Standard Automated Materiel Management System does not have a control to alert an item manager to review an item for potential stockage when the essentiality of a non-stocked item increases to a level that would make it a candidate for stockage. The essentiality code indicates the degree to which an item is vital to the performance of the mission of a weapon system. In review of items at DLA, we found that the essentiality of a non-stocked item had increased sufficiently to require stockage; however, the DLA item manager had not been provided a supply control study that would have notified the manager of a change in item essentiality. The item manager stated that the system does not produce notification when such changes occur. Other item managers and DLA systems personnel verified that no such control is programmed into the system.

DoD Regulation 4140.1-R, "Materiel Management Regulation," Chapter 3, January 1993, states that for secondary items that are essential to weapon system performance, DoD Components shall compute requirements with mathematical models that relate range and depth of stock to their effect on the operational availability of the weapon system. DoD Components shall use essentiality as criteria for determining the feasibility for stocking low demand parts (parts with less than three demands per year).

Impacts

Inadequate supply support planning resulted in degraded mission readiness and additional costs due to cannibalization.

Mission Readiness. We reviewed 18 of 36 casualty reports that showed primary mission degradation exceeded 30 days. Sixteen of those 18 casualty reports represented deficiencies in mission-essential equipment that resulted in minor degradation of the primary mission. One other casualty report resulted in major degradation but not loss of primary mission. The remaining casualty report was on the Isotta-Fraschini diesel engine, which was inoperative for 56 days. According to the ship's Command, the failure of this engine resulted in loss of at least one major mission area.

Cannibalization. Cannibalization is the removal of serviceable material from one piece of equipment for installation in another piece of equipment to restore the latter to a serviceable condition. Deficiencies in supply support resulted in 17 instances of cannibalization to ships under construction (MCM-9 to -14) at the contractor facility from March 22, 1991, through February 24, 1993. Excess costs were incurred by using ship construction assets to satisfy casualty report requisitions from the operational MCM fleet to support fleet readiness. The total cost of cannibalization was \$1.7 million, which is an additional cost of \$0.627 million, a cost increase of 36 percent over the cost of acquiring the parts through regular channels. The additional costs resulted from the removal of equipment already installed on new construction ships and disruptions in production schedules.

Conclusion

We recognize the necessity of cannibalizing ships to satisfy critical supply support requirements. We commend both the Mine Warfare Ships Program Office and the Navy Ships Parts Control Center for taking extraordinary steps to correct supply support deficiencies both before and during our audit. We also recognize that even the best supply support planning will not completely preclude supportability problems; however, we conclude that lessons learned from the supply support problems encountered on the MCM Ships should be applied to all future major ship acquisitions and modifications.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Commander, Naval Sea Systems Command, require that on future acquisitions and major ship modifications to mine warfare ships, program managers:

a. Conduct logistics support analyses essential for effective supply support as prescribed by DoD Instruction 5000.2 and Military Standard 1388-1A. Specifically, provisioning and post-production support tasks should be complete and timely.

Supply Support

b. Task in-service engineering activities to evaluate replacement factors provided by contractors and to conduct appropriate Failure Modes Effects and Criticality Analysis for hull, mechanical, and electrical systems.

2. We recommend that the Director, Defense Logistics Agency, implement procedures in the Standard Automated Materiel Management System to provide item managers a supply control study when the weapon system essentiality code of a nonstocked item increases to a level that may justify stockage.

Management Comments: As of June 9, 1994, the Navy and DLA had not provided comments on the draft report. The comments had been requested by May 31, 1994.

Audit Response: We request the Navy and DLA provide comments to the final report by July 14, 1994.

Part III - Additional Information

Appendix A. Description of Special Purpose Ships

Mine Countermeasures (MCM) Ship. The MCM Ship is a 224-foot mine warfare ship designed to clear bottom and moored mines in coastal and off-shore areas. The hull is constructed of douglas fir, white oak, Alaskan cedar, and glass-reinforced plastic sheathing to maintain a non-magnetic character, essential to mine-clearing operations. This non-magnetic character requires components to be manufactured from non-magnetic alloys. As a result, many components are not widely manufactured.

The MCM ship is an Acquisition Category IC program, managed by the Mine Warfare Ship Program Office, Naval Sea Systems Command. Estimated program cost is \$1.8 billion. The last of 14 planned vessels is in production and scheduled to be commissioned in July 1994.

Mine Hunter Coastal (MHC) Ship. The MHC Ship is a 188-foot mine warfare ship designed to clear harbors and coastal waters worldwide of acoustic, magnetic, and pressure or contact-type mines. The Naval Reserve will primarily operate the MHC Ship, which complements the MCM Ship. The MHC hull is constructed of glass-reinforced plastic to provide the necessary low-magnetic character. Because of the low magnetic character, the MHC Ship requires special supply support. The Mine Warfare Ship Program Office, Naval Sea Systems Command, also manages the MHC Ship.

The MHC Ship is an Acquisition Category IC program costing about \$1.5 billion. The MHC Ship is in production. The first of 12 vessels was commissioned in November 1993.

Appendix B. Comparison of Actual and Estimated Replacement Factors

<u>Item Name</u>	<u>Adjusted MTBR^{1,2} (Years)</u>	<u>Estimated MTBR¹ (Years)</u>	<u>Percent of Change³</u>
Circuit Card Assembly	7.7	3.3	130.8
Display Unit	454.5	100.0	354.6
Shaft Retainer	13.7	100.0	(86.3)
Seal	5.3	5.3	0.0
Plain Seal	9.1	25.0	(63.6)
Circuit Card Assembly	8.3	7.7	(8.3)
Pin, Straight, Headless	10.0	25.0	(60.0)
Coupling Extractor	33.3	20.0	66.7
Electric Power Cable	100.0	100.0	0.0
Sleeve Bushing	14.9	20.8	(28.4)
Potentiometer	277.8	100.0	177.8
Transformer	3333.3	250.0	1233.3
Cable Assembly, Special	2.5	10.0	(75.0)
Gasket	1.8	13.5	(86.8)
Gasket	6.7	7.1	(6.7)
Back-up Ring	62.5	25.0	150.0

¹ MTBR is the mean-time between replacements expressed in years. For example, a MTBR of 7,69231 means that the average useful life of an item is 7.7 years.

² The adjusted MTBR is a mathematical derivative of the originally estimated MTBR, adjusted for actual usage.

³ Percent of Change represents the percentage of increase or decrease of the estimated MTBR compared to the actual MTBR.

Appendix C. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.a.	Economy and Efficiency. Effective logistics support planning for supply support will result in reduced cannibalization costs.	Nonquantifiable monetary benefits because future cannibalization could not be determined.
1.b.	Economy and Efficiency. Review of replacement factors will result in fewer procurements of excess spares and reduced cannibalization costs.	Nonquantifiable monetary benefits because future procurement of spares and cannibalization could not be determined.
2.	Internal Controls. Controls to alert an item manager when the essentiality of a non-stocked item increases will reduce the risk of ships being non-mission capable due to a lack of spares.	Nonmonetary.

Appendix D. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology, Washington, DC
Assistant Secretary of Defense (Reserve Affairs), Washington, DC

Department of the Navy

Chief of Naval Operations, Washington, DC
Director, Reserve Surface Program Management Division, Washington, DC
Mine Warfare Command, Corpus Christi, TX
Naval Sea Systems Command, Washington, DC
Amphibious Warfare Program Office, Washington, DC
Mine Warfare Ship Program Office, Washington, DC
Auxiliary Special Mission Ship Program Management Office, Washington, DC
Supervisor of Shipbuilding, Conversion and Repair, Sturgeon Bay, WI
Naval Supply Systems Command, Washington, DC
Navy Ships Parts Control Center, Mechanicsburg, PA
Aviation Supply Office, Philadelphia, PA
Naval Air Warfare Center, Naval Air Systems Command, Indianapolis, IN
Naval Surface Warfare Center, Crane, IN
Naval Surface Warfare Center, Philadelphia, PA
Naval Ordnance Station, Louisville, KY
Naval Audit Service, Falls Church, VA

Defense Agencies

Headquarters, Defense Logistics Agency, Alexandria, VA
Defense Logistics Agency, Operations Research Office, Richmond, VA
Defense Construction Supply Center, Columbus, OH
Defense Electronics Supply Center, Dayton, OH
Defense General Supply Center, Richmond, VA
Defense Industrial Supply Center, Philadelphia, PA

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Secretary of the Navy
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Commander, Naval Sea Systems Command
Commander, Navy Ships Parts Control Center
Auditor General, Naval Audit Service

Department of the Air Force

Auditor General, Air Force Audit Agency

Defense Agencies

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Inspector General, Central Imagery Office
Inspector General, Defense Intelligence Agency
Inspector General, National Security Agency
Director, Defense Logistics Studies Information Exchange

Non-Defense Federal Organizations

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Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services

Appendix E. Report Distribution

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House Committee on Armed Services
House Subcommittee on Military Acquisitions, Committee on Armed Services
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