

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

**HOTLINE ALLEGATIONS RELATING TO
THE OVERHAUL OF THE USS ENTERPRISE**

Report Number 93-054

February 19, 1993

Department of Defense



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

REPORT
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MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION
AND LOGISTICS)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT)

SUBJECT: Report on the Audit of Hotline Allegations Relating to the Overhaul
of the USS ENTERPRISE (Project No. 2LB-8007)

Introduction

We are providing this final report for your information and use. The audit was performed in response to allegations received through the Inspector General, DoD, hotline relating to the adequacy of planning, justifying, and executing the ongoing overhaul of the aircraft carrier USS ENTERPRISE (CVN 65). We also evaluated the effectiveness of applicable internal controls. Additional allegations received on November 2, 1992, will be addressed in a separate report.

The USS ENTERPRISE is undergoing its fourth overhaul, including the third refueling, at the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia. The overhaul started in 1991 and is scheduled to be completed in 1994 at an estimated cost of \$2.2 billion. The USS ENTERPRISE is 31 years old and this overhaul is expected to extend its useful life an additional 20 years.

Audit Results

One incident cited in the allegations, that shipyard workers were exposed to radiation without their knowledge, did occur. However, upon discovering the exposure, the Navy notified the workers and instituted adequate procedures to minimize the likelihood of reoccurrence. The amount of radioactive exposure to these workers was well below safety limits. Other allegations related to the management and the cost of the overhaul were not substantiated.

Objectives

The primary objective of the audit was to determine the validity of allegations relating to planning, justifying, and executing the refueling and overhaul of the USS ENTERPRISE. The allegations related to funding, schedule, requirements, radiological exposure and hazardous waste produced during refueling and overhaul. The audit also evaluated internal controls.

Scope of Audit

The audit was performed at the activities listed in Enclosure 1. We evaluated programmatic records covering the period from FY 1985 through FY 1992 relating to the

refueling and overhaul of the USS ENTERPRISE. We held discussions with representatives from the Defense Contract Audit Agency (DCAA) and reviewed and relied on the audit reports it had completed from 1985 through 1992 that were related to the overhaul of the USS ENTERPRISE. We also discussed with staff members of the House Armed Services Committee information about the overhaul that the Navy provided to the Committee.

This economy and efficiency audit was made from May through November 1992 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 considered necessary.

Internal Controls

We evaluated the effectiveness of the Navy's internal controls applicable to the refueling and overhaul of the USS ENTERPRISE. This evaluation consisted of reviews of programmatic controls and included interviews, analyses of data, and reviews of records. The internal controls applicable to the audit objectives were deemed to be effective in that no material deficiencies were disclosed by the audit.

Background

The nuclear-powered aircraft carrier, USS ENTERPRISE, is one of 15 commissioned aircraft carriers. Seven of the carriers are nuclear-powered, and eight are conventionally powered. The Navy plans to retire three of its conventionally powered carriers by FY 1995.

The USS ENTERPRISE was commissioned in 1961. It was overhauled in 1965, 1970, and 1979. It was refueled in 1965 and 1970. The currently scheduled 40-month overhaul, including refueling, started in January 1991 and is expected to be completed by May 1994. The overhaul is expected to extend the life of the USS ENTERPRISE by 20 years. The Aircraft Carrier Program Office in the Naval Sea Systems Command estimated that the costs of the refueling and overhaul will be \$2.163 billion. The estimate includes \$1.698 billion from the shipbuilding and conversion appropriation for refueling and overhaul work, and an estimated \$465 million from the operations and maintenance and other procurement appropriations for planning and preparing for the overhaul and purchase of Government-furnished equipment (including nuclear fuel).

Before FY 1990, the operation and maintenance and other procurement appropriations were used to fund the refueling and overhaul. In FY 1990, Congress directed the Navy to use the shipbuilding and conversion appropriation to enhance visibility and management of the refueling and overhaul.

Prior Audits and Other Reviews

There was no audit coverage of this specific topic in the last 5 years.

Discussion

We did not substantiate the eight allegations received through the Inspector General, DoD, hotline, which contended that the Navy's management of the ongoing overhaul of the

aircraft carrier USS ENTERPRISE was not adequate. Specific details for each allegation are provided below.

Allegation 1: The overhaul, including refueling, is a year behind schedule.

Our analysis did not support the allegation. At the time of the audit, the Aircraft Carrier Program Office, Naval Sea Systems Command, estimated that Newport News Shipbuilding and Dry Dock Company would complete the refueling and overhaul schedule in May 1994, as specified in the contract. We evaluated the accuracy of this estimate and determined that the Navy's estimate appears reasonable. As of October 1992, the carrier was in the 22nd month of a scheduled 40-month overhaul period, and the overhaul was approximately 60 percent complete. One major key event, the ship undocking, is scheduled to occur 2 months later than previously scheduled. However, at the time of the audit the program office indicated that the shipyard would be able to make up some of the delay in other areas. We evaluated the Navy's schedule and determined that the method for accomplishing the schedule appeared reasonable.

On October 17, 1992, a small amount of radioactivity was released into four compartments in the engineering spaces of the ship. The incident and resultant decontamination caused a 1-month delay in undocking the ship. The Navy also estimated that the incident might cause a 1-month delay in delivery of the ship back to the fleet.

The Deputy Secretary of Defense Program Budget Decision No. 704, December 1991, to consolidate selected restricted availability maintenance work (originally scheduled for FY 1995) with the ongoing overhaul, was expected to cause an estimated 2-month delay in the return of the USS ENTERPRISE to the active fleet. If the maintenance work was performed separately, it would require that the USS ENTERPRISE be taken out of service for approximately 6 months. The decision to consolidate this maintenance effort with the overhaul appeared to be prudent and reasonable.

In summary, the nuclear incident and consolidated maintenance work could result in a delay in delivery of the ship to the Navy until August 1994. However, at the time of the audit, the Navy and contractor believed that time could be made up in other areas. As a result, the projected date of delivery of the ship to the Navy was still scheduled for May 1994.

Allegation 2: The Navy's Nuclear Propulsion Directorate improperly directed the Supervisor of Shipbuilding, Conversion, and Repair, Newport News, to use operations and maintenance funding instead of shipbuilding and conversion funding for the overhaul of the USS ENTERPRISE to hide the increasing cost of the overhaul from DoD and Congress.

Our analysis did not support the allegation. There was no evidence that the Naval Sea Systems Command's Nuclear Propulsion Directorate improperly directed the Supervisor of Shipbuilding, Conversion and Repair, Newport News, to use operations and maintenance funding to fund the overhaul of the USS ENTERPRISE. Additionally, there was no evidence that the Comptroller of the Naval Sea Systems Command, which had primary responsibility for financial management of the overhaul, improperly directed the use of operations and maintenance funding.

A change in congressional direction caused what may have appeared to be an improper use of operations and maintenance funding. Following the then current appropriation guidance, the funding for refueling and overhaul was originally budgeted in the Navy's operations and maintenance, other procurement, and weapons procurement appropriations. Approximately \$465 million of funding from those appropriations were expended from FY 1985 through FY 1989 to plan and complete initial work (including the purchase of nuclear fuel) on the refueling and overhaul. In May 1989, the Senate Armed Services Committee directed that starting in FY 1990 shipbuilding and conversion funding was to be used to complete the refueling and overhaul.

The committee staff members told us that this change in direction was made because the complexity, duration, and ultimate benefits of the modernization (overhaul) would be equivalent in most respects to a service life extension given a conventionally powered aircraft carrier. Service life extensions are normally funded through the shipbuilding and conversion appropriation. The committee members also believed that management of the program would be improved if it were funded in a similar manner to a service life extension program.

Our review of all applicable accounting documents disclosed that the Navy had made all charges before and after FY 1990 to the appropriate fund accounts. Effective internal controls were also in place to minimize the risk of mischarging.

Allegation 3: The Navy's Nuclear Propulsion Directorate requested the contractor (Newport News Shipbuilding and Dry Dock Company) to shift the cost of refueling and overhauling the USS ENTERPRISE to other Navy projects to hide the increasing cost of the refueling and overhaul from DoD and the Congress. A related allegation stated that materials charged to the USS ENTERPRISE project were used on the USS LONG BEACH.

Our analysis did not support the allegation. We found no evidence that the Navy directed the contractor to shift costs to other projects to hide the cost of the refueling and overhaul of the USS ENTERPRISE. Our review disclosed that adequate internal control procedures were in place to minimize the risk of mischarging.

Internal control procedures were evaluated during DCAA audits at Newport News Shipbuilding and Dry Dock Company. DCAA performed annual audits of the direct costs incurred under all DoD cost reimbursement contracts awarded to the contractor. DCAA also performed audits of the contractor's accounting and billing systems to ensure that the systems were adequate to support cost reimbursement type contract requirements. The audits included steps to provide reasonable assurance that no significant costs were improperly shifted between contracts.

DCAA has completed several audits of the contractor's incurred costs, including costs associated with refueling and overhaul contract No. N00024-86-C-2078 for the USS ENTERPRISE. The audits were performed during the period of the USS ENTERPRISE contract and covered all direct costs incurred through the third quarter of FY 1992. DCAA's most recent audit of the contractor's billing system was completed in June 1992. None of the audits disclosed improper cost shifting to or from the USS ENTERPRISE overhaul contract and other Navy contracts.

In addition to the audits performed by the DCAA, we reviewed six judgmentally selected cost reimbursement contracts involving Navy nuclear work awarded to the contractor. Our review of the billings on the contracts disclosed no improper cost shifting.

We also reviewed a separate, but related, allegation that materials were transferred from the USS ENTERPRISE to the USS LONG BEACH, but costs of the materials were charged to the USS ENTERPRISE. The complainant alleged that this information resulted from a discussion with an individual employed by the Supervisor of Shipbuilding, Conversion, and Repair at Newport News, Virginia. However, we found no evidence that materials were shifted from the USS ENTERPRISE to the USS LONG BEACH.

Allegation 4: The Navy's Nuclear Propulsion Directorate improperly directed \$70 million of operations and maintenance funds to be used to paint the USS ENTERPRISE.

Our analysis did not substantiate the allegation. Funding for painting required during the overhaul was being properly allocated from shipbuilding and conversion appropriations. Painting does not appear as a discreet separately priced element of the overhaul contract. We estimated that the costs at completion for major painting jobs (including the ship's bottom, freeboard, tank/void, and machinery spaces) will be approximately \$48.4 million. These costs are being properly charged to the Navy's shipbuilding and conversion appropriation.

The \$70 million appears to be related to the Navy's original estimate of ship preservation effort, which included all of the ship's tanks and voids. A detailed inspection of the ship's tanks and voids disclosed that only a portion of them needed to be preserved. The estimated costs to paint the USS ENTERPRISE were reviewed during DCAA audits. Navy engineering personnel reviewed the requirements to ensure the reasonableness of the costs and the need for the work.

Allegation 5: The Navy Nuclear Propulsion Directorate is hiding actual work requirements and costs of the refueling and overhaul of the USS ENTERPRISE from DoD and the Congress. Costs are projected to be over \$4 billion.

Our analysis did not substantiate the allegation. All known and projected costs of the refueling and overhaul were presented to Congress and the Office of the Secretary of Defense in the Navy's budget for the overhaul and in point papers. The estimated cost of the overhaul (\$2.028 billion) and selected restricted availability maintenance cost (\$135 million) are identified in the Navy's budget.

In October 1992, the Navy's program office estimated that the cost of refueling and overhauling the USS ENTERPRISE would be \$2.028 billion (\$2.163 billion if the cost of performing the additional selected restricted availability maintenance work is included). The \$2.028 billion includes all funds expended since the planning effort for the overhaul started in FY 1985. This estimate was based on detailed cost and progress reports from the contractor as well as regular Navy meetings and discussions with contractor personnel.

In August 1990, the Naval Center for Cost Analysis performed an independent cost assessment of the USS ENTERPRISE's refueling and overhaul costs. The assessment concluded that the refueling and overhaul could be accomplished within the budget cap (\$1.869 billion at that time), provided that cost growth was kept below average for recent

carrier overhauls at Newport News Shipyard and Dry Dock Company. Subsequent to this cost assessment, additional cost growth occurred, increasing the cost estimate to \$2.028 billion. To provide for this cost growth, the Navy obtained \$100 million of additional ship cost adjustment funds in FY 1991 and an additional \$59 million in FY 1992. The need for these additional funds was fully disclosed to and approved by Congress.

Allegation 6: The Navy's Nuclear Propulsion Directorate (Code 08) is using the overhaul and refueling of the USS ENTERPRISE as a make-work project to justify a work force of 16 Senior Executive Service personnel and 359 other, mostly high grade, personnel.

Our analysis did not substantiate the allegation. The decision to refuel and overhaul the USS ENTERPRISE was evaluated and approved by the Deputy Secretary of Defense, the Secretary of the Navy, and the Chief of Naval Operations; and it was reexamined several times, including during a congressional hearing in May 1989. The most recent review was conducted in December 1991 in which the Deputy Secretary of Defense; Chairman, Joint Chiefs of Staff; Secretary of the Navy; and Chief of Naval Operations reaffirmed the decision to overhaul and refuel the carrier. The decision to refuel the carrier was based on requirements and had no relationship to the Navy's Nuclear Propulsion Directorate's employment level.

Our review disclosed seven military officers within the Navy's Nuclear Propulsion Directorate (one commander, one lieutenant commander, two lieutenants, and three lieutenants junior grade) who worked more than 50 percent of their time on the USS ENTERPRISE overhaul and refueling. As would be expected on a project of this size, a limited number of personnel (one GM-15, one GM-14, two GM-13s, a GS-12, a GS-09, and one lieutenant commander) in the Aircraft Carrier Program Office of the Naval Sea Systems Command also devote their efforts largely to the direction and oversight of overhauling and refueling.

Allegation 7: Radioactive and hazardous waste generated by the USS ENTERPRISE refueling and overhaul are at the highest level ever at Newport News Shipbuilding and Dry Dock Company.

Our analysis did not substantiate the allegation. Navy records indicate that the level of radioactive waste at the shipyard was higher in FY 1970 than in FY 1992. In FY 1970 the shipyard contained 28,000 cubic feet of radioactive waste. In FY 1992 the level peaked at 19,226 cubic feet.

There were legitimate reasons for the high levels of radioactive and hazardous waste. The amount of radioactive and other hazardous waste being generated at the shipyard is high because of the magnitude of the refueling and overhaul of the USS ENTERPRISE and the overhaul and construction of other nuclear powered ships.

The USS ENTERPRISE has eight nuclear reactors being refueled and overhauled. Combining this work with work on other ships in the shipyard, the contractor is generating more radioactive waste than normal. Additionally, many of the reactor parts and some ancillary parts must be replaced. These parts are radioactive and must be safeguarded and disposed of at radioactive waste sites.

The contractor and the Navy have procedures and requirements for handling, collecting, storing, and shipping radioactive and hazardous waste off-site. We verified that procedures were being implemented by physically inspecting the handling and storing of radioactive and hazardous waste. Procedures were followed for waste materials in each location we audited.

Allegation 8: Many of the workers on the USS ENTERPRISE have been exposed to radiation without their knowledge. The Navy's Nuclear Propulsion Directorate and the Navy's Supervisor of Shipbuilding, Conversion, and Repair are hiding this information from Newport News workers.

Our review disclosed that one incident did occur that resulted in personnel being exposed to radiation without their knowledge. However, there was no attempt to cover-up the incident and all evidence indicated that personnel were being properly monitored and informed about the amount of radiation they received.

From January through July 1992, 55 shipyard workers were exposed to radiation without their knowledge. The workers were exposed to radiation upon entering an unmarked area that was adjacent to an area containing radioactive material. These workers were not wearing dosimeters (devices that measure radiation exposure). The Navy attributed the problem to failure by radiological control personnel to perform a proper survey and mark and restrict the area.

Upon discovering the improperly marked area, the Navy and the contractor took immediate corrective actions. This included conducting radiation measurement surveys of the area, posting dosimetry devices, verifying and establishing safety boundaries, identifying personnel who entered the area without dosimetry equipment, and determining the amount of radiation the workers received. The amount of radiation exposure was well below established safety limits. Management also took permanent action to correct the internal control deficiency that led to the exposure of the workers. Improvements were made to the tracking system used to monitor radiological areas of the ship.

This was an isolated instance that, while undetected longer than it should have been, when discovered received prompt management attention. Neither the Navy nor the contractor attempted to hide the information from the workers. Our review of radiological procedures and requirements disclosed that the procedures and requirements were adequate to minimize the risk of unsafe radiological operations or conditions in or around the USS ENTERPRISE. Additionally, contractor records showed that the contractor was in full compliance with applicable Federal standards regarding radioactive releases to the environment.

With the exception of the incident discussed above, the contractor prevented releases of radiological material by isolating work areas. All employees and visitors are indoctrinated on radiological controls. To detect the degree of exposure people receive while working in potentially contaminated areas, the contractor and the Navy require all workers who are in the areas where exposure may occur to wear dosimeters. Using a judgment sample of 30 radiological workers, we verified that the workers' dosimeters were read at least once a month and that the results were recorded in the employees' permanent exposure record. The Navy's established exposure control level was 2 rem per year for its personnel and for contractors, compared with the Code of Federal Regulations, title 10, standard of 5 rem per

year. Our review of personnel exposure records, incident reports, audit reports, and other exposure information dating back to 1980 disclosed no evidence that anyone involved in the USS ENTERPRISE refueling and overhaul, or on other Navy nuclear projects at the shipyard, has exceeded the 2 rem per year standard.

Management Comments

We provided a draft of this report to the addressees on December 16, 1992. Because there were no recommendations, no formal comments were required and none were received. However, if you wish to provide comments on this final report, they should be provided by March 19, 1993.

We appreciate the courtesies extended to the audit staff. Audit team members are listed in Enclosure 2. If you have any questions on this audit, please contact Mr. Christian Hendricks at (703) 692-3414 (DSN 222-3414) or Mr. James Kornides at (703) 692-3420 (DSN 222-3420). The planned distribution of this report is listed in Enclosure 3.



Edward R. Jones
Deputy Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Navy

ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics),
Washington, DC
Assistant Secretary of Defense (Program Analysis and Evaluation),
Washington, DC

Department of the Navy

Chief of Naval Operations, Washington, DC
Headquarters, Naval Sea Systems Command, Washington, DC
Supervisor of Shipbuilding, Conversion, and Repair,
Newport News, VA
USS ENTERPRISE
Navy Regional Finance Center, Washington, DC

Defense Agencies

Defense Contract Audit Agency, Resident Auditor at Newport
News Shipbuilding and Dry Dock Company, Newport News, VA

Congressional Committees

House Armed Services Committee, Washington, DC

Non-Government Activities

Newport News Shipbuilding and Dry Dock Company, Newport News, VA

AUDIT TEAM MEMBERS

Shelton R. Young	Director, Logistics Support Directorate
Christian Hendricks	Program Director
James L. Kornides	Project Manager
Hassan A. Soliman	Team Leader
Gerald P. Montoya	Team Leader
Tammie D. Valentini	Auditor

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