Audit Report

OFFICE OF THE INSPECTOR GENERAL

ACQUISITION OF MINE COUNTERMEASURES SHIPS

Report No. 92-102 June 15, 1992

This version of Audit Report Number 92-102 excludes proprietary and For Official Use Only information.

Department of Defense

The following acronyms are used in this report.

CSSR.....Cost Schedule Status Reports
IF.....Italian Isotta Francinii
MCM.....Mine Countermeasures
MNS.....Mine Neutralization System
PINS.....Precise Integrated Navigation System
SUPSHIP.....Supervisor of Shipbuilding, Conversion and Repair
SWBS.....Ship Work Breakdown Structure
TAR.....Technical Advisory Report

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

June 15, 1992

MEMORANDUM FOR ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)

SUBJECT: Audit Report on the Acquisition of Mine Countermeasures Ships (Report No. 92-102)

We are providing this final report for your information and use. Comments on a draft of this report were considered in preparing the final report. The comments indicate that Navy's corrective actions were commendable and fully responsive. Therefore, no additional comments are required.

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact Mr. Rayburn H. Stricklin at (703) 693-0573 (DSN 223-0573) or Mr. Verne Petz at (703) 614-6262 (DSN 224-6262). Appendix D lists the planned distribution of this report.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosure

cc:
Secretary of the Navy
Under Secretary of Defense for Acquisition
Assistant Secretary of the Navy (Research, Development and Acquisition)
Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin

Office of the Inspector General

AUDIT REPORT NO. 92-102 **June 15, 1992**
(Project No. 0AL-0084)

ACQUISITION OF MINE COUNTERMEASURES SHIPS

EXECUTIVE SUMMARY

Introduction. In March 1980, the Chief of Naval Operations issued a decision to build a wooden-hulled Mine Countermeasures (MCM) ship based on the existing Minesweeper, Ocean 523 design. The MCM class ships will clear bottom and moored mines in coastal and offshore areas.

In FY 1983, the MCM ship program was approved for 14 ships at an estimated cost of $1.3 billion. By FY 1991, as a result of contract modifications and inflation, the program had grown to $1.7 billion. The MCM ship program is managed by the Program Manager Ship 303 at the Naval Sea Systems Command.

Objectives. The audit's overall objective was to evaluate the acquisition management of the MCM ship program to determine whether the MCM ships were effective, properly supported, and economically procured. The audit also included a review of applicable internal controls.

Audit Results. The Navy and OSD have initiated actions to facilitate the management of the MCM ship program. However, our audit identified the following conditions that required management's attention.

o The Navy prematurely paid one MCM ship contractor $6.8 million in progress payments. These premature payments resulted in unnecessary interest costs of $564,000 to the U.S. Treasury (Finding A).

o Contract administrators frequently did not fully evaluate one contractor's proposed prices for engineering changes to MCM ship contracts and seldom prepared Memorandums of Negotiations on proposed changes that they negotiated. As a result, there was no assurance that the Navy negotiated fair and reasonable prices for changes to MCM ship contracts (Finding B).

Internal Controls. Internal controls were not in place to prevent premature progress payments. Also, internal controls relating to evaluating one contractor's proposals on changes to MCM ship contracts and to documenting the results of negotiations of prices for the changes were not followed. However, during and after our audit, the Navy took actions to correct the internal control weaknesses. Our review of internal controls is discussed in Part I.

Potential Benefits of Audit. The principal benefits that will be realized from the audit are reduced possibilities of premature progress payments to contractors and improved prenegotiation and postnegotiation practices (Appendix B).

Summary of Recommendations. We recommended the development and implementation of procedures to prevent premature progress payments and compliance with procedures for evaluating contractor proposals and for documenting the results of negotiations.

Management Comments. The Navy was fully responsive to Recommendations A.1.a., A.2.a., A.2.b., and B. The Navy nonconcurred with Recommendation A.1.b. in our draft report. However, based on the Navy's comments, we revised the recommendation in this report. Furthermore, the Navy has provided us evidence that it already has taken action to satisfy the revised recommendation. Since the Navy has taken responsive actions on all recommendations in this report, no further comments are required.

TABLE OF CONTENTS

	Page
TRANSMITTAL MEMORANDUM	
EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	
Background	1
Objective	1
Scope	2
Internal Controls	2
Prior Audits and Other Reviews	2
PART II - FINDINGS AND RECOMMENDATIONS	
Finding A - Progress Payments	3
Finding B - Contract Modifications	11
PART III - ADDITIONAL INFORMATION	
Appendix A - Areas Not Requiring Further Review	17
Appendix B - Summary of Potential Benefits Resulting from Audit	19
Appendix C - Activities Visited or Contacted	21
Appendix D - Report Distribution	23
PART IV - MANAGEMENT COMMENTS	
Department of the Navy Management Comments	27
Implementing Memorandum from the Assistant Secretary of the Navy (Research, Development and Acquisition)	31

This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the Information Officer, Audit Planning and Technical Support Directorate, 703-614-6303 (DSN 224-6303).

,

PART I - INTRODUCTION

Background

The Mine Countermeasures (MCM) ship is a 224-foot fiberglass-sheathed, wooden-hulled ship. The ship is diesel-powered, has twin propellers, and should be capable of traveling at 13.5 knots. The ship has slow speed electric motors and a bow thruster for mine neutralization and hunting operations. The ship also contains many sophisticated systems, including a Mine Neutralization System (MNS) vehicle, a sonar system, and a Precise Integrated Navigation System (PINS). The Navy plans to use the remotely controlled MNS vehicle to neutralize moored and bottom mines. The Navy plans to use the sonar system to detect, classify, locate, and avoid mines and to guide the MNS vehicle to mines that need to be neutralized. The Navy plans to use the PINS to obtain accurate navigational positioning for mine countermeasure operations and for ship navigation.

The MCM ship program provides for the Navy to use dual source contracts to buy 14 MCM ships. The Navy contracted for 11 ships with Peterson Builders, Incorporated, Sturgeon Bay, Wisconsin, and for the other 3 ships with Marinette Marine Corporation, Marinette, Wisconsin. As of July 1991, Peterson Builders, Incorporated, had delivered five ships and Marinette Marine Corporation had delivered three ships. As of June 30, 1991, the programmed cost for the 14 ships was $1.7 billion.

Objective

The overall audit objective was to evaluate the program management of the MCM ship program to determine whether the weapon system was effective, properly supported, and economically procured. We performed the audit in accordance with our critical program management elements approach, which required that we review nine program management elements that were critical to a program in the late production and deployment phases.

The results of our reviews of contracting and cost estimating and analysis are presented in Part II. The results of our review of product improvements, Future Years Defense Plan quantities versus budget cost differences, Operating and Maintenance budget and spending trends, logistics, and turnover to organic support did not disclose any major weaknesses, as discussed in Appendix A. Also, in Appendix A, we explain why we did not evaluate two other areas, mission effectiveness and production indicators.

Scope

This performance audit was conducted from August 1990 to July 1991 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. We obtained and reviewed data and information, dating from June 1984 through July 1991. We also interviewed personnel involved in the acquisition of the MCM ships and other cognizant personnel. Appendix C lists the activities visited or contacted during the audit.

Internal Controls

We reviewed internal controls applicable to the critical program management elements of the MCM ship program. In assessing internal controls, we evaluated management plans, written policies and procedures, and management-initiated reviews. The audit identified material internal control weaknesses, as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Internal controls were not in place to prevent premature progress payments (Finding A). Also, internal controls were not in place to ensure that the Navy evaluated one contractor's proposals and documented negotiations of contract modifications in accordance with existing procedures (Finding B).

During and after our audit, the Navy took actions that satisfied all recommendations in this report and in turn, corrected the material internal control weaknesses that we discuss in Findings A and B.

Prior Audits and Other Reviews

There have been no other audits performed on the MCM ship program within the last 5 years.

PART II - FINDINGS AND RECOMMENDATIONS

A. PROGRESS PAYMENTS

The Navy prematurely paid one MCM ship contractor $6.8 million in progress payments. The premature payments occurred because of a lack of adequate progress payment guidance. The premature payments resulted in the U.S. Treasury incurring unnecessary interest costs of approximately $564,000.

DISCUSSION OF DETAILS

Background

The contracts for the MCM ships provided for the Navy to make progress payments to the contractors based on the percent of work completed on ships under construction. The contracts required that the contractors submit to the Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), U.S. Navy, Sturgeon Bay, Wisconsin, estimates of the amounts of labor and material necessary to complete work required within each major Ship Work Breakdown Structure (SWBS) group and within sub-SWBSs in each of the major SWBS groups. There were nine major SWBS groups for each MCM ship. The estimates showed, in terms of percentages, how much of the total labor and material planned for each ship was related to each major SWBS group, as well as the percentages of labor and material estimated for the sub-SWBSs within each major SWBS group. For example, if labor in major SWBS group 100, Hull Structure, was estimated to amount to 15 percent of the total labor estimated for the ship and group 100 had 10 sub-SWBSs, the sum of the estimates for labor in the 10 sub-SWBSs would equal 15 percent of the total labor for the ship.

Brief descriptions of how SUPSHIP officials and the contractors used the estimates, which the contractors developed for SWBSs and sub-SWBSs, to determine the percentages of completion for ships under construction are provided in the following subparagraphs. The subparagraphs also describe how the two parties used the percentages of completion to determine the amounts of progress payments that the contractors were entitled to receive.

Percentage of completion--labor. For each progress payment period, the industrial specialist at the SUPSHIP developed a percentage of completion for the labor portion of each major SWBS group. The industrial specialists determined the percentage of completion for each major SWBS group by physically inspecting each ship under construction and estimating the completion of

each sub-SWBS contained in the group. They repeated this procedure for each of the other eight major SWBS groups. The results of their inspections were then added together to determine the total percentage of labor completed on each ship.

Percentage of completion--material. SUPSHIP officials calculated material progress by dividing the total costs incurred for material in each major SWBS group by the total material cost estimate for that major SWBS group. The contractors submitted to the SUPSHIP actual incurred material costs for each major SWBS group. The officials repeated this procedure for each of the other eight major SWBS groups. Then, they added the totals to determine the total percentage of material completion for each ship.

Percentage of completion--ship. After developing labor and material completion percentages, SUPSHIP officials applied the percentages against material and labor conversion factors to determine the total percent of ship completion. For example, if the material and labor conversion factors were 60 percent and 40 percent, respectively, and material was 40-percent complete and labor was 10-percent complete, the officials made the following calculation to estimate the extent that the total ship was complete.

DETERMINING OVERALL COMPLETION OF SHIPS

Item	Conversion Factor (Percentage)		Percentage of Completion		Weighted Percentage of Completion
Material	60	x	40	=	24
Labor	40	x	10	=	4
Percentage of Completion - Ship					28

Calculation of progress payment--entitlement. After estimating the percentages of completion for ships under construction, SUPSHIP officials provided them to the contractors for their use in computing progress payment entitlements. The contractors multiplied the ship completion percentages by the total contract prices to arrive at the dollar values of work completed. The contractors deducted a reserve from the value of work completed to arrive at the total progress earned. The total progress earned was the maximum dollar amount the contractor was eligible to receive for the total progress payment period. On MCM ships, the reserve was 10 percent of the value of work

completed until the ship was 50-percent complete. After the ship was 50-percent complete, the reserve was 5 percent of the value of the total contract price. The contractors then made a separate calculation to determine progress based on incurred costs. To do so, the contractors deducted escalation costs billed to date from total costs incurred. That calculation provided progress earned based on actual costs (in contract base-year dollars). After the contract was 50-percent complete, the contractor was entitled to use 105 percent of incurred costs to compute progress earned. The MCM ship contracts provided for the Navy to make progress payments on the lesser of total progress earned based on percentages of completion or progress earned based on actual costs.

Basis for Audit Evaluation

To determine the reasonableness of progress payments on MCM ship contracts, we assessed percentages of completion supporting progress payments on the MCM ships 9 through 14, which were being built by Peterson Builders, Incorporated. We used cost and schedule data that the contractor reported to the Navy in monthly Cost Schedule Status Reports (CSSRs) to assess the percentages of completion. More specifically, we calculated percentages of completion for the ships using costs contained in the CSSRs and compared the results to the percentages of completion supporting progress payments. To develop our percentages of completion from the CSSRs, we divided the budgeted cost of work performed on each ship by the total budgeted cost for the ships. We performed that calculation for both labor and material on the MCM ships 9 through 14. In total, we reviewed costs in 24 CSSRs for the MCM ships 9, 10, and 11, covering the period August 20, 1989, through April 7, 1991, and in 39 CSSRs for the MCM ships 12, 13, and 14, covering the period April 1, 1990, through April 7, 1991. As part of our assessments of the percentages of completion, we also observed three of the physical inspections that industrial specialists at the SUPSHIP made on a continuing basis of ships under construction to estimate the percentage of work completed in each SWBS group.

Reasonableness of Progress Payments

Our assessment of the percentages of completion for six MCM ships disclosed that the Navy prematurely paid the contractor about $6.8 million in progress payments on five MCM ships. On the other MCM ship included in our assessment, we found that the estimate of completion supporting the progress payment was also overstated; however, the overstatement did not result in a

premature payment because the contractor's incurred cost was less than the estimate of completion based on CSSR data. The specific results of our assessments are shown below.

PREMATURE PROGRESS PAYMENTS

MCM Ship	Progress Payment Actual	Progress Payment Per CSSR	Amount Prematurely Paid
9	*	*	$4,323,035
10	*	*	289,065
11	*	*	990,579
12	*	*	885,123
13	*	*	0
14	*	*	307,825
TOTAL			$6,795,627

The Navy made the premature progress payments because neither Navy nor DoD guidance required that SUPSHIP officials use data in monthly CSSRs that showed the extent of construction completed on each ship when determining progress payment entitlements. If such a requirement had existed and SUPSHIP officials had satisfied the requirement, they would have determined that the percentages of completion, based on the contractor's estimates of work in SWBSs, exceeded percentages of completion based on CSSR data by 1.53 to 5.73 percent.

PERCENTAGES OF COMPLETION

MCM Ship	Progress Payment Documentation	CSSR	Percentage of Completion Overstated
9	*	*	5.73
10	*	*	1.76
11	*	*	1.53
12	*	*	3.14
13	*	*	3.96
14	*	*	4.27

Furthermore, if SUPSHIP had compared the completion data supporting progress payments with like data in CSSRs, they would have found indications that the contractor had overestimated the amount of work necessary to complete SWBSs in the early part of ship construction (frontloading). Such overstatements increase the values of progress earned to levels that enable contractors to be reimbursed for all of the costs that they incur on a ship

* Proprietary and For Official Use Only information deleted.

until the ship is 50-percent complete. (Note: The overstatements have less effect after ships are more than 50-percent complete because the progress payment clause in the contracts provide for the Navy to withhold only 5 percent of cost incurred after the ship is 50-percent complete). To determine the extent that the contractor frontloaded the SWBSs, we used CSSR data to calculate the percentages of completion at various stages of construction for the three MCM ships in our audit that were more than 50-percent complete and compared those percentages to percentages of completion supporting progress payments. Our comparisons disclosed that the percentages of completion supporting progress payments exceeded the percentages of completion reflected in CSSRs by amounts that increased in the early part of construction and decreased after the ships were about 60-percent complete, as shown in the schedule below.

INDICATIONS OF FRONTLOADING

		Percentages of Completion		
MCM	Date	Per Progress Payment	Per CSSR Data	Percentage Overstated
9	August 20, 1989	*	*	2.00
	September 16, 1990	*	*	6.66
	December 16, 1990	*	*	9.53
	March 17, 1991	*	*	6.57
	May 19, 1991	*	*	5.80
10	August 20, 1989	*	*	.49
	September 16, 1990	*	*	1.81
	December 16, 1990	*	*	3.37
	March 17, 1991	*	*	.48
	May 19, 1991	*	*	1.76
11	August 20, 1989	*	*	.35
	September 16, 1990	*	*	2.38
	December 16, 1990	*	*	4.18
	March 17, 1991	*	*	1.67
	May 19, 1991	*	*	1.53

If SUPSHIP officials had compared data supporting progress payments with CSSR data, they would have found that the conversion factor for material that the contractor established for calculating total percentages of completion was overstated by about 3 percent on MCM ships 12 through 14.

* Proprietary and For Official Use Only information deleted.

CONVERSION FACTORS FOR MATERIAL

MCM Hull	Contractor's Conversion Percentage	Percentage Based on CSSR	Difference
12	*	*	3.24
13	*	*	3.31
14	*	*	3.04

Effects of Premature Progress Payments

Premature progress payments resulted in the U.S. Treasury incurring unnecessary interest costs because the contractor continually possesses Government funds to which it is not entitled. Since the U.S. Treasury was paying about 8.3 percent to borrow money, the $6.8 million of premature progress payments could amount to as much as $564,000 in unnecessary annual interest costs.

Action Taken by Management

We discussed the premature progress payments with SUPSHIP officials before the end of the audit, and they agreed with our concerns. The Supervisor instructed the Administrative Contracting Officer to send a letter to the contractor stating that differences existed between the percentages of completion shown in support of progress payments and the same data shown in the CSSRs and asking the contractor to review its records and resolve the differences.

The Supervisor's prompt action was commendable and demonstrated responsive management. His action, if completed, should result in adjustments to the SWBSs that SUPSHIP officials used for developing estimates of completion and in recoupments of premature progress payments.

RECOMMENDATIONS FOR CORRECTIVE ACTION

1. We recommend that the Assistant Secretary of the Navy (Research, Development and Acquisition) develop and implement progress payments procedures that, as a minimum, require administrative contracting officers to:

a. Make periodic comparisons of Ship Work Breakdown Structure values and conversion factors used for progress payment

---

* Proprietary and For Official Use Only information deleted.

purposes with like values shown in the Cost Schedule Status Reports.

b. Use the results of their periodic comparisons in administering progress payment procedures.

2. We recommend that the Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin:

a. Require, in writing, that the contractor adjust the Ship Work Breakdown Structure values to agree with like values in the Cost Schedule Status Reports or provide documentation for any justified differences.

b. Make monthly comparisons of Ship Work Breakdown Structure values and conversion factors used for progress payment purposes with corresponding data in Cost Schedule Status Report, and require adjustments when the values vary.

MANAGEMENT COMMENTS

The Navy concurred with Recommendations A.1.a. and A.2.a. and partially concurred with Recommendation A.2.b. On Recommendation A.1.a., the Assistant Secretary of the Navy (Research, Development and Acquisition) issued a memorandum for the Commander, Naval Sea Systems Command on April 20, 1992, reemphasizing the importance of the administrative contracting officers considering all relevant and available information, including CSSRs, in administering progress payment provisions. On Recommendation A.2.a., the Navy stated that the Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin, in August 1991, requested the contractor to submit new progress weighting factors due to differences between the weighting factors and CSSR data. As for Recommendation A.2.b., the Navy stated that the Supervisor has established practices that provided for monthly reviews, including comparisons, of weighting factors and CSSR data and for the resolution of questionable variances identified by the comparisons.

The Navy nonconcurred with Recommendation A.1.b. that was in the draft report. The Navy stated that data in CSSRs do not control progressing. It added that the progress payment clause in the contracts controlled progressing and that the clause provided for revision of progress weighting values and conversion factors when they are no longer representative of progress.

The Navy also nonconcurred with Finding A. It stated that Finding A mistakenly assumes that CSSRs are the standard to which progress payments should be measured. Further, it maintained that the progress payment internal control weakness that we addressed in the draft of this report was no longer a material internal weakness because the Navy has initiated corrective actions.

Part IV contains the complete text of the Navy's comments. Also, a copy of the Assistant Secretary's April 20, 1992, memorandum to the Commander, Naval Sea Systems Command, is contained in Part IV.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The actions taken by the Navy on Recommendations A.1.a., A.2.a., and A.2.b. were responsive. Therefore, no further comments are required on these three recommendations.

Based on management's comments, we revised Recommendation A.1.b. that was in the draft report. The recommendation provided for the Assistant Secretary of the Navy (Research, Development and Acquisition) to establish procedures requiring adjustments to SWBS values and conversion factors that do not agree with corresponding CSSR data. After considering the Navy's comments and reviewing the wording of the recommendation in the draft report, we revised the recommendation. As shown in this report, Recommendation A.1.b. now provides for the Assistant Secretary to establish procedures that require administrative contracting officers to use the results of periodic comparison of progress weighting values and conversion factors with CSSR data in administering progress payment procedures. Since the Assistant Secretary issued a memorandum to the Commander, Naval Sea Systems Command, requiring such action (Part IV), our revised recommendation has been satisfied. Therefore, no further comments are required on Recommendation A.1.b.

As for the Navy's comments on Finding A, we realize that CSSR data should not be the standard for determining progress payments. However, we believe that CSSR data are good measures for evaluating the values and factors used in determining progress payments.

Finally, we agree with the Navy that the material internal control weakness on progress payments has been corrected.

B. CONTRACT MODIFICATIONS

Contract administrators frequently did not fully evaluate one contractor's proposed prices for engineering changes to contracts for MCM ships. Furthermore, the administrators seldom prepared Memorandums of Negotiations on changes that they negotiated. These conditions occurred because the administrators did not comply with regulations governing proposed changes. As a result, there was no assurance that the Navy negotiated fair and reasonable prices for changes to MCM ship contracts.

DISCUSSION OF DETAILS

Background

Federal Acquisition Regulation, subsection 15.805.1, states that on proposals for changes to contracts, contracting officers are responsible for the final pricing decision. To reach a fair and reasonable price, the subsection states that the contracting officer will, as appropriate, coordinate a team of experts and request and evaluate the advice of specialists in such fields as contracting, engineering, and contract pricing.

SUPSHIP Instruction 4330.1E, "Change Processing," March 29, 1989, provided more specific guidance on reaching final prices on proposed changes to contracts, including contracts for the MCM ships. The Instruction specified the responsibilities of SUPSHIP officials in evaluating proposed changes to contracts and negotiating fair and reasonable prices for the proposed changes.

Key responsibilities specified in SUPSHIP Instruction 4330.1E included engineers performing technical evaluations of proposals and price or cost analysts evaluating labor and overhead rates, as well as material prices. The Instruction explained that the engineers' technical evaluations would include reviews of engineering estimates so the engineers could provide the price or cost analysts with assessments of the labor hours and material quantities proposed by the contractor for contract changes. The Instruction also explained that price or cost analysts would use the results of their analyses, as well as the results of other SUPSHIP officials' reviews and evaluations, to prepare a Technical Advisory Report (TAR) addressing the allowability, allocability, and reasonableness of the labor, material, and indirect costs proposed by the contractor on each proposed contract change. Further, the contract administrator should use the TAR to prepare negotiation objectives. After negotiations are completed, the contract administrator should prepare Memorandums of Negotiations to document actions that took place

in negotiations, including explanations if the negotiated prices varied from negotiation objectives and why the negotiated prices were considered fair and reasonable.

Evaluation of Proposed Contract Changes

We reviewed 34 contract modifications, valued at $679,000, to determine if SUPSHIP officials thoroughly evaluated the proposed changes before negotiations. The modifications incorporated engineering changes on contracts for the MCM ships 6 and 8, and the MCM ships 9 through 14.

SUPSHIP officials had not fully evaluated 16 of the 34 modifications before negotiations. On the 16 modifications, the proposed changes for 9 modifications, which were valued at $467,200, lacked technical evaluations from the engineers and analyses by the price analysts. The proposed changes on the other seven modifications, valued at $35,200, lacked price analyses. Additionally, the contract administrators did not prepare Memorandums of Negotiations on the 16 modifications, as well as on 11 other modifications, valued at $87,200.

We attributed the incomplete evaluations to a lack of compliance with SUPSHIP Instruction 4330.1E and a lack of controls to ensure compliance. The Instruction was clear that both technical evaluations and price analyses were required on all proposed changes to contracts. Furthermore, the Instruction required that the contract administrator prepare Memorandums of Negotiations after the proposed changes were negotiated.

Effects of Incomplete Evaluations

To determine the effects of the incomplete evaluations, we compared the proposed prices for the 16 modifications that were not fully evaluated and the 18 modifications that were fully evaluated with the negotiated prices for the same modifications. We found that the negotiated prices for 13 of the 16 modifications that were not fully evaluated were the same as the proposed prices. However, on 16 of the 18 modifications that were evaluated, we found that the SUPSHIP officials negotiated the proposed prices downward by an average of 21 percent. For example, their evaluation of one proposed change, on which the contractor proposed a $6,000 price increase to delete a communication receiver from MCM ships 9 through 14, resulted in the contract being reduced by $7,300 rather than increased by $6,000. The increase occurred because SUPSHIP officials found that the proposal did not include credits for labor and material that were included in the original contract to install the

receiver. On another proposed change, the contractor proposed $12,000 to change the angle that piping was to be installed on MCM ships 9 through 14. SUPSHIP officials questioned $8,200 of the proposed costs because the contractor included production costs to install the pipe although such costs were included in the original contract. SUPSHIP officials negotiated the change at a price of $4,300 for a reduction of $7,700 from the proposed price. In total, SUPSHIP officials questioned $72,400 of costs on the 18 modifications that were properly evaluated and achieved $41,300 of reductions in the proposed prices for the modifications.

Other evidence of SUPSHIP officials' ability to negotiate proposed prices downward was their success in negotiating lower prices for engineering and drafting efforts on the proposed changes that were fully evaluated. On the 18 modifications that SUPSHIP officials properly evaluated proposed changes, the officials achieved a 52-percent reduction, valued at $3,400, in the number of drafting hours that the contractor proposed for the changes.

Effects of Not Preparing Memorandums of Negotiations

The absence of Memorandums of Negotiations on 27 of the 34 modifications precluded assessments of the extent that engineers' and price analysts' evaluations and analyses were considered in negotiations. For example, on a change that was proposed to ground a high frequency antenna on the MCM ships 9 through 14, the contractor proposed $18,900, and SUPSHIP officials recommended a cost of $14,700. The change was negotiated at $17,500, but the file did not contain any documentation specifying what costs were allowed over the SUPSHIP officials' recommended amount and explaining why the costs were allowed. In addition, the same change was proposed for the MCM ships 6 and 8. For that change, the contractor proposed $10,600, and SUPSHIP officials recommended $8,800. The changes were negotiated at a price of $9,100. Again, there was no documentation explaining what transpired in negotiations and whether the negotiations resulted in fair and reasonable prices to the Navy.

Actions Taken by Management During the Audit

During the course of the audit, we discussed with the SUPSHIP our concerns about the practices his officials used to evaluate proposed contract changes and to document the outcome of negotiations with the SUPSHIP. Based on our discussions, the SUPSHIP issued SUPSHIP Instruction 4330.1F, "Change Order

Processing," April 23, 1991. This Instruction canceled SUPSHIP Instruction 4330.1E. The new SUPSHIP Instruction establishes internal controls to ensure that all change orders are thoroughly analyzed by all the necessary specialists before proceeding into negotiations. More specifically, the internal controls require that contract administration officials use a change proposal and scope checklist sheet to ensure complete analyses of each change proposal. The change proposal and scope checklist sheet provided for the evaluation of the scope of work for engineering, manufacturing, direct and indirect labor, as well as the appropriateness of materials, drafting changes, testing procedures, and cost-effectiveness. Further, the revised Instruction requires that the Navy cost or price analyst quantify, in dollar values, the results of the technical evaluations of the contractor's proposals. In addition, SUPSHIP officials planned to develop SUPSHIP Instruction 4330.1G. That Instruction should further enhance the internal controls by ensuring that all change orders are properly processed and are negotiated at fair and reasonable prices to the Navy.

RECOMMENDATION FOR CORRECTIVE ACTION

We recommend the Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin, periodically review contract files to ensure compliance with SUPSHIP Instruction 4330.1G.

MANAGEMENT COMMENTS

The Navy concurred with Recommendation B. and stated that SUPSHIP Instruction 4330.1G, "Change Order Processing," was issued September 3, 1991. It also stated that the need to review contract files periodically has been reemphasized to the the Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin. The Navy added that, based on actions taken on the recommendation, no material internal control weaknesses exists on evaluating contractors' proposals and documenting the results of negotiations.

AUDIT RESPONSE TO MANAGEMENT COMMENTS

The actions taken by Navy on Recommendation B. were responsive. Therefore, no further comments are required on the recommendation. Also, we agree with the Navy that the material internal weaknesses on change order processing have been corrected.

PART III - ADDITIONAL INFORMATION

Appendix A - Areas Not Requiring Further Review
Appendix B - Summary of Potential Benefits Resulting from Audit
Appendix C - Activities Visited or Contacted
Appendix D - Report Distribution

APPENDIX A: AREAS NOT REQUIRING FURTHER REVIEW

Product improvements. The Navy planned only one major product improvement for the MCM ships. It involved upgrading the SQQ-30, the sonar of the earlier MCM ships, to an improved model, the SQQ-32. The SQQ-32 sonar system was installed on MCM 1 after delivery to the fleet, and funding for the backfit of SQQ-32 to MCM ships 2 through 9 was programmed into the Fleet Modernization Program. Finally, MCM ships 10 through 14, the last ships planned for the MCM series, will have the new sonar system installed during their construction.

Future Years Defense Plan quantities versus budget cost differences. We reviewed the budget for FY 1991 and found that the cost incurred by the MCM ship program had not exceeded the appropriations during the audit period.

Operating and maintenance budget and spending trends. Contractor warranty and Ship Construction, Navy, funds were used for ship repair and supply for the period covering ship delivery through warranty expiration. Also, normal maintenance, using operating and maintenance funds, was phased in at the ship acceptance date, and major ship modifications and ship alterations were funded with Fleet Modernization Program funds. The staffing plans included new positions for contractor support services to assist in transition to organic support, and the cost and position growth were due to transition and escalation. We also found that the Future Years Defense Plan budget submissions agreed with the Selected Acquisition Reports.

Logistics. The program manager's integrated logistics plan, as of August 1990, adequately addressed logistics issues such as reliability, availability, and maintainability.

During the audit, we also evaluated quality assurance in the MCM ship program. The Navy's and the contractors' quality assurance systems adequately identified and corrected quality defects. Contractor quality defects were reduced 45 percent from 242 defects (MCM ships 3 and 5) to 134 defects (MCM ships 6 and 8). The remaining 134 defects were minor deficiencies.

Finally, we identified reliability problems with the Italian Isotta Francinii (IF) engines that the contractors were installing in the MCM ships. However, the number of deficiencies identified with the engines also decreased. Further, the Navy had secured the technical data and the licensing required

to produce engine spare and replacement parts after contractual obligations with the Italian firm expire. The Navy needs to continue monitoring the reliability of the engines to ensure successful industry test results and to ensure that replacement parts meet required technical specifications.

Turnover to organic support. We evaluated planning for turnover to organic support. The program manager had adequate funding for turnover to organic support and had approved the MCM ship transition plan. The MCM mission was unchanged, and the mission goals were specific to the individual systems. In addition, we found that the combat systems development was not accelerated.

Mission effectiveness. We did not evaluate the effectiveness of the MCM ship in satisfying its mission because of the limited amount of data available at the time of our audit. The Navy had deployed only one MCM ship, the Avenger, which was deployed to the Persian Gulf in support of Operation Desert Storm. Further, during operations there, the Avenger had engine failure, precluding mission completion.

Production indicators. An audit of production indicators was not appropriate for the MCM ship program because the MCM contracts were competitive, firm-fixed-price contracts and engineered labor standards were not required on such contracts.

APPENDIX B: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Type of Benefit
A.1.a.	Internal Controls. Will ensure the accuracy of the values in the contractor-submitted Ship Work Breakdown Structures used for progress payment purposes.	Nonmonetary.
A.1.b.	Internal Controls. Will establish procedures requiring the use of Cost Schedule Status Reports in administering the progress payments clause.	Nonmonetary.
A.2.a.	Program Results. Will ensure accurate values of underlying data used to compute progress payments for MCM shipbuilding contractors. Will correct current amounts being used to accurate values.	Nonmonetary.
A.2.b.	Internal Controls. Will establish Navy procedures that require that the MCM shipbuilding contractors correct doubtful estimates when analysis indicates their nonconformity with other available data. May prevent further premature progress payments within the MCM program.	Nonmonetary.
B.	Internal Controls. Will ensure that Navy procedures for review and evaluation of contractor proposals meet the Federal Acquisition Regulation and Supervisor of Shipbuilding, Conversion and Repair, Navy, Sturgeon Bay, Wisconsin,	Nonmonetary.

guidance requirements to adequately analyze contractor proposals and prepare Memorandums of Negotiations.

APPENDIX C: ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

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

Department of the Navy

Office of the Assistant Secretary of the Navy (Research, Development and Acquisition), Arlington, VA
Naval Sea Systems Command, Arlington, VA
Office of the Inspector General, U.S. Atlantic Fleet, Norfolk, VA
Office of the Program Manager, Mine Countermeasures Ship Program, Arlington, VA
Fleet and Mine Warfare Training Center, U.S. Naval Base, Charleston, SC
U.S. Naval Station, Mayport, FL
Office of the Supervisor of Shipbuilding, Conversion and Repair, Sturgeon Bay, WI

Defense Agency

Defense Contract Audit Agency, Milwaukee, WI

Non-Government Activities

Marinette Marine Corporation, Marinette, WI
Peterson Builders, Incorporated, Sturgeon Bay, WI

APPENDIX D: REPORT DISTRIBUTION

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition
Assistant Secretary of Defense (Production and Logistics)
Comptroller of the Department of Defense

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Assistant Secretary of the Navy (Research, Development and Acquisition)
Comptroller of the Navy
Commander, Naval Sea Systems Command
Program Manager, Mine Countermeasures Ship Program
Commander, Fleet and Mine Warfare Training Center
Supervisor of Shipbuilding, Conversion and Repair, Sturgeon Bay, WI
Auditor General, Naval Audit Service

Defense Agency

Director, Defense Logistics Agency

Non-DoD

Office of Management and Budget

Congressional Committees:

- Senate Subcommittee on Defense, Committee on Appropriations
- Senate Committee on Armed Services
- Senate Committee on Governmental Affairs
- Ranking Minority Member, Senate Committee on Armed Services
- House Committee on Appropriations
- House Subcommittee on Defense, Committee on Appropriations
- Ranking Minority Member, House Committee on Appropriations
- House Committee on Armed Services
- House Committee on Government Operations
- House Subcommittee on Legislation and National Security, Committee on Government Operations

General Accounting Office

PART IV - MANAGEMENT COMMENTS

Department of the Navy Management Comments
Implementing Memorandum from the Assistant Secretary of the Navy
(Research, Development and Acquisition)

Department of the Navy Management Comments

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

APR 20 1992

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL
(ACQUISITION MANAGEMENT DIRECTORATE)

Subj: DRAFT AUDIT REPORT ON THE ACQUISITION OF THE MINE COUNTERMEASURES SHIP PROGRAM (PROJECT NO. OAL-0084)

Ref: (a) DODIG (AMD) memo of 14 Feb 1992

Encl: (1) Department of the Navy Response

The subject DODIG draft audit report, forwarded by reference (a), has been reviewed. The Department of the Navy response is provided as enclosure (1).

Gerald A. Cann

Copy to:
NAVSEA (SEA-OON3)

DRAFT AUDIT REPORT ON THE ACQUISITION OF THE MINE COUNTERMEASURES SHIP PROGRAM (PROJECT OAL-0084)

FINDING A. PROGRESS PAYMENTS

DODIG FINDING:

Our assessment of the percentages of completion for six MCM ships disclosed that the Navy prematurely paid the contractor about $6.8 million in progress payments on five MCM ships.

DON RESPONSE:

Nonconcur. While the report identifies a difference in the percent of completion between that used for progress payments and Cost Schedule Status Reports (CSSR), information is not included in the report to draw a conclusion regarding premature progress payments. The draft audit mistakenly assumes that CSSRs are the standard to which progress payments should be measured. They are not.

Progress payments under shipbuilding contracts are normally and, in the case of the MCM, based on sight verified physical progress. This is an objective method of determining percent complete, and, as used in the labor/material weighting formula, is the contractually agreed upon basis per the progress payment clause.

CSSRs provide cost and schedule status information for use in making and validating management decisions. They provide indications of cost and schedule problems, but are not intended to replace the Government sight verified assessment of physical progress for use in payment of the contractor. DOD Instruction 5000.2, Part 11, specifically notes that contract performance measurement systems such as CSSRs are not intended to affect the basis on which costs are reimbursed and progress payments made.

There are inherent differences between the subject MCM shipbuilder's physical progressing and the CSSR system. An example is the situation in which, in accordance with the progress payments clause, physical progress reaches 100% at delivery. CSSR progress at 100% covers some post-delivery responsibilities of the shipbuilder including guarantee items. This disparity between physical progressing and CSSR progressing is a factor which will cause the latter to appear to lag physical progressing as observed in the draft audit report.

Recommendation 1.A. Assistant Secretary of the Navy (RD&A) develop and implement progress payment procedures that, as a minimum, require periodic comparisons of Ship Work Breakdown Structure values and conversion factors used for progress payment purposes with like values shown in the Cost Schedule Status Reports.

DON Response: Concur. A requirement already exists within the Progress Payments clause itself for values and conversion factors to be revised quarterly or when factual data indicate that the weighting factors already in use are no longer representative of the actual labor and material distribution. However, ASN(RDA) will reemphasize the importance of the ACO considering all relevant and available information including CSSR data in administering the progress payment provision. Based on current requirements, the Navy believes no material internal control weaknesses exist.

Recommendation 1.B. Assistant Secretary of the Navy (RD&A) develop and implement progress payment procedures that, as a minimum, require adjustments to Ship Work Breakdown Structure values and conversion factors that do not agree with corresponding Cost Schedule Status Reports.

DON Response: Nonconcur. The CSSR does not control progressing. The contract's SECNAV approved Progress Payments clause does control progressing. A mechanism already exists within the clause for adjustment of the values and conversion factors should they no longer be representative of actual progress. The clause provides for a review of the veracity of these factors at a minimum quarterly or whenever factual data indicate that the weighting factors in use are no longer representative of the actual labor and material distribution. Based on the nonconcurrence with the recommendation, the Navy also believes no material internal control weaknesses exist.

Recommendation 2.A. Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin, require in writing that the contractor adjust the Ship Work Breakdown Structure values to agree with like values in the Cost Schedule Status Reports or provide documentation for any justified differences.

DON Response: Concur. Differences between like values will be understood and documented. SUPSHIP Sturgeon Bay has added CSSR data to the indicators already in use for evaluating the validity of progress weighting factors. The payments clause (H-9) of the MCM contract allows the Government to request revisions of the progress weighting factors at any time. The clause requires review at least quarterly. In August 1991 based on differences between the labor and material weighting factors being used and those calculated from the CSSR along with verbal discussions with the contractor, a written request was sent to the contractor under the MCM contract H-9 clause to submit new weighting factors. Additionally, SUPSHIP performs monthly reviews including comparisons between CSSR data and SWBS weighting factor values. If questionable variations exist, the contractor is then notified in writing and is requested to provide justification for the differences. Based on current requirements, the Navy believes no material internal control weaknesses exist.

Recommendation 2.B. Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin, make monthly comparisons of Ship Work Breakdown Structure values and conversion factors used for progress payment purposes with corresponding data in Cost Schedule Status Reports and require adjustments when the values vary.

DON Response: Partially concur. Consideration is given each month to CSSR values and other pertinent information to evaluate the progress weighting factors. Adjustments as appropriate will be made as set forth in DON response to recommendation 2A. Based on current requirements, the Navy believes no material internal control weaknesses exist.

FINDING B. CONTRACT MODIFICATIONS

DODIG FINDING:

Contract administrators frequently did not fully evaluate one contractor's proposed prices for engineering changes to contracts for MCM ships. Furthermore, the administrators seldom prepared Memorandums of Negotiations on proposed changes. These conditions occurred because the administrators did not comply with regulations governing proposed changes. As a result, there was no assurance that the Navy negotiated fair and reasonable proces for changes to MCM ship contracts.

DON RESPONSE:

Concur. As stated in the audit report, SUPSHIP Sturgeon Bay took immediate action to correct the findings by issuing SUPSHIPINST 4330.1F, "Change Order Processing" on 23 April 1991. SUPSHIPINST 4330.1G entitled "Change Order Processing" was later issued 3 September 1991 outlining procedures to ensure all change orders are properly processed and negotiated at fair and reasonable prices to the Navy. This instruction further enhances internal controls.

Recommendation B. Supervisor of Shipbuilding, Conversion and Repair, U.S. Navy, Sturgeon Bay, Wisconsin, periodically review contract files to ensure compliance with SUPSHIP Instruction 4330.1G.

DON Response: Concur. Though the problem cited in the audit existed three years ago, the need to periodically review contract files has been reemphasized to the Supervisor. Update of the instruction was implemented in September, 1991. Because of the above, the Navy believes no material internal control weaknesses exist.

Implementing Memorandum from the Assistant Secretary of the Navy

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

APR 20 1992

MEMORANDUM FOR THE COMMANDER, NAVAL SEA SYSTEMS COMMAND

Subj: DETERMINATION OF PROGRESS PAYMENTS FOR SHIPBUILDING CONTRACTS

We have recently responded to the DODIG draft audit report on the Mine Countermeasures (MCM) Ship Program concerning the administration of progress payment provisions.

One of the recommendations by the DODIG would require periodic comparisons of Ship Work Breakdown Structure (SWBS) values and conversion factors with like values shown in Cost Performance Report (CPR) data. We concur with their recommendation. This comparison should be used by the Administrative Contracting Officer (ACO) in conjunction with already existing progress payment procedures as a check in validating contractors progress.

Your ACO's should consider all relevant and available information including CPR data in administering progress payment procedures, not just sight verified physical progress.

Gerald A. Cann

AUDIT TEAM MEMBERS

Donald E. Reed, Director, Acquisition Management Directorate
Rayburn H. Stricklin, Program Director
Verne F. Petz, Project Manager
Bernard Baranosky, Team Leader
Ronald L. Nickens, Team Leader
John F. May, Auditor
Gregory S. Fulford, Auditor
Ursula Cleary, Auditor