

Audit

Report



OFFICE OF THE INSPECTOR GENERAL

**USE OF CONTRACTOR COST AND SCHEDULE SYSTEM
DATA**

Report No. 93-067

March 11, 1993

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Department of Defense

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The following acronyms are used in this report.

ACO.....Administrative Contracting Officer
AAWS-M.....Advanced Antitank Weapon System-Medium
CAO.....Contract Administration Office
CPR.....Cost Performance Report
C/SC.....Cost and Schedule Control
DCAA.....Defense Contract Audit Agency
DCMC.....Defense Contract Management Command
DLA.....Defense Logistics Agency
DPRO.....Defense Plant Representative Office
EAC.....Estimate-at-Completion
FAADS.....Forward Area Air Defense System
FAR.....Federal Acquisition Regulation
GAO.....General Accounting Office
JIG. Cost/Schedule Control Systems Criteria Joint
.....Implementation Guide
NSIA.....National Security Industrial Association
OSD.....Office of the Secretary of Defense
PMJEG.....Performance Measurement Joint Executive Group
SAR.....Subsequent Application Review
SRAM.....Short Range Attack Missile
SUPSHIP.....Supervisor of Shipbuilding, Conversion, and Repair
USD(A).....Under Secretary of Defense for Acquisition
WBS.....Work Breakdown Structure



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March 11, 1993

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION
COMPTROLLER OF THE DEPARTMENT OF DEFENSE
DIRECTOR, DEFENSE CONTRACT AUDIT AGENCY
COMMANDER, DEFENSE CONTRACT MANAGEMENT COMMAND

SUBJECT: Audit Report on the Use of Contractor Cost and Schedule
Control System Data (Report No. 93-067)

We are providing this report for your information and use. We initiated the audit because of DoD concerns about management oversight of cost and schedule performance on major DoD acquisition programs. We considered comments to a draft of this report in preparing the final report.

As required under DoD Directive 7650.3, recommendations are subject to resolution in the event of nonconcurrence or failure to comment. Therefore, the Under Secretary of Defense for Acquisition; the Director, Defense Contract Audit Agency; and the Commander, Defense Contractor Management Command must provide comments by May 11, 1993. See the "Status of Recommendations" section at the end of each finding for the recommendations you must comment on and the specific requirements for your comments.

We appreciate the courtesies extended to the audit staff. If you have any questions on this report, please contact Mr. Russell A. Rau, Program Director, at (703) 693-0186 (DSN 223-0186). Appendix F lists the distribution of this report.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosure

cc:

Secretary of the Army
Secretary of the Navy
Secretary of the Air Force
Director, Defense Acquisition Regulatory Council

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Office of the Inspector General, DoD

AUDIT REPORT NO. 93-067
(Project No. 1AE-5006)

March 11, 1993

USE OF CONTRACTOR COST AND SCHEDULE CONTROL SYSTEM DATA

EXECUTIVE SUMMARY

Introduction. Cost and schedule control (C/SC) systems that meet the criteria under DoD Instruction 5000.2, "Defense Acquisition Policies and Procedures," February 23, 1991, provide DoD contractors effective management control mechanisms that integrate cost, schedule, and technical performance. Also, the C/SC systems ensure that DoD managers have accurate, valid, timely, and auditable contract performance information on which to make responsible management decisions. Unless waived by the milestone decision authority, DoD acquisition contracts valued at \$60 million or more for research, development, test, and evaluation or \$250 million or more for procurement require C/SC systems that meet the criteria specified under DoD Instruction 5000.2.

Objective. The audit objective was to evaluate the implementation and oversight of C/SC systems and the use of data reported by contractors complying with C/SC system criteria.

Audit Results. We found that DoD had made significant efforts to improve the implementation and use of C/SC systems. However, improvements were still needed. Specifically:

- o Subsequent Application Reviews were not timely or consistently accomplished. Surveillance of contractor and subcontractor C/SC systems were not adequately planned, the accuracy of the data was not verified, and resources were not effectively used (Finding A).

- o The sufficiency of the performance measurement baselines was not adequately determined either before contract award or during the C/SC system review process after contract award. Unrealistic baselines result in the inability to measure effectively contract performance, time-consuming contract restructures, and acquisition baseline breaches (Finding B).

- o The C/SC system data was not consistently considered in progress payment reviews (Finding C).

- o The interrelationship between a contractor's C/SC system and other systems, such as the billing, estimating, and purchasing systems, was not adequately considered during contractor surveillance activities (Finding D).

- o Incentives to implement and maintain an effective C/SC system and criteria for withdrawal of a contractor's validated C/SC system did not exist (Finding E).

- o Adequate consideration for C/SC system implementation was not given before the award of contracts (Finding F).

Internal Controls. The Findings C and Finding E identified material internal control weaknesses in that existing policies and procedures were not adequate or effectively implemented. These internal control weaknesses are summarized in Part I and fully discussed in Part II of the report.

Potential Benefits of Audit. The benefits (Appendix D) to be realized from implementing the recommendations in this report are nonmonetary. Implementation of the recommendations will improve the internal management controls related to application of C/SC systems and the use of C/SC system data.

Summary of Recommendations. We recommended that:

The Under Secretary of Defense for Acquisition:

- o Consolidate the responsibility for validating contractor C/SC systems within Defense Contract Management Command;

- o Revise DoD Instruction 5000.2 and Manual 5000.2-M, "Defense Acquisition Management Documentation and Reports," February 23, 1991, to require that the separation of costs for different types of work, such as development and production, and the sufficiency of the baselines be reviewed as part of C/SC system implementation reviews;

- o Establish incentives for implementing and maintaining C/SC systems, including criteria for withdrawal of system approvals and a contract clause for withholding up to 10 percent from contractor payments for failure to adequately implement and maintain a validated C/SC system;

- o Implement actions to assess C/SC systems and preliminary baseline information during the pre-contract award process; and

- o Direct distribution of Defense Acquisition Executive Summary Reports on major Defense acquisition programs to the Defense Contract Management Command.

The Director, Defense Contract Audit Agency:

- o Provide additional training in C/SC responsibilities and issue guidance and audit programs for C/SC system reviews, including assessment and reporting of C/SC system implications of findings from other contractor system reviews and recommendations for withdrawing a C/SC system validation; and

- o Establish a C/SC system point of contact within selected field offices.

The Commander, Defense Contract Management Command:

- o Require a comparison of progress payment estimates-at-completion with an estimate calculated using the cumulative cost-performance index;

- o Establish effective coordination with program offices and DCAA to ensure that all requirements for surveillance of a contractor's C/SC system are accomplished;

- o Establish a data base to track corrective actions for C/SC system deficiencies;

- o Supplement existing policy and procedures for subcontractor oversight and issue guidance to include the impact on C/SC system and data from deficiencies noted in other contractor system reviews; and

- o Require specific plans for Subsequent Application Reviews that reflect the contract being reviewed and the contractor's past performance in maintaining a valid C/SC system on other contracts.

Management Comments. The Office of Under Secretary of Defense for Acquisition concurred with or offered acceptable alternatives to four recommendations. Unresolved issues remain regarding our recommendations to the Under Secretary to consolidate the responsibility for validating contractor C/SC systems; require that the separation of costs for different types of work, such as development and production, and the sufficiency of the baselines be reviewed as part of C/SC system implementation reviews; and establish incentives for implementing and maintaining adequate C/SC systems.

The Director, Defense Contract Audit Agency, concurred with or offered acceptable alternatives to all recommendations addressed to him. The Commander, Defense Contract Management Command, concurred with or offered acceptable alternatives to four of the five recommendations addressed to him. The Under Secretary of Defense for Acquisition and the Commander, Defense Contract Management Command, are requested to respond to the unresolved recommendations by May 11, 1993. Likewise, for followup purposes, the Director, Defense Contract Audit Agency, is requested to provide copies of guidance issued pursuant to this report.

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TABLE OF CONTENTS

	<u>Page</u>
TRANSMITTAL MEMORANDUM	
EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	1
Background	1
Objective	2
Scope	3
Internal Controls	4
Prior Audits and Other Reviews	5
PART II - FINDINGS AND RECOMMENDATIONS	
A. Cost and Schedule Control System Reviews and Surveillance	7
B. Performance Measurement Baseline	29
C. Progress Payments	39
D. Surveillance of Contractor Management Systems	45
E. Incentives for Contractor Implementation and Maintenance of Cost and Schedule Control Systems	49
F. Preaward Assessment of Cost and Schedule Control Systems	55
PART III - ADDITIONAL INFORMATION	
Appendix A - Description of Defense Acquisition Programs Reviewed	61
Appendix B - Other Inspector General, DoD, Reports Issued as a Result of This Audit	73
Appendix C - Definition of Terms Used in This Report	75
Appendix D - Summary of Potential Benefits Resulting From Audit	77
Appendix E - Activities Visited or Contacted	79
Appendix F - Report Distribution	83

PART IV - MANAGEMENT COMMENTS

Office of Under Secretary of Defense for Acquisition	87
Defense Contract Audit Agency	103
Defense Logistics Agency	109

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

PART I - INTRODUCTION

Background

In 1991, DoD management attention was focused on cost and schedule control (C/SC) systems used by contractors and the use of the data from the systems by DoD management. This emphasis resulted in part from concerns about the failure to use cost and schedule information to support oversight of programs, such as the Navy's A-12, and those issues identified in the Navy's "A-12 Administrative Inquiry," November 28, 1990. Because of the increased attention, DoD components have taken actions to improve contractors' C/SC system performance and the use of data from the C/SC systems.

In January 1991, the Defense Contract Management Command (DCMC) issued a memorandum addressing responsibilities for evaluating contractor systems, conducting program surveillance and evaluations, verifying contractor reports, and independently assessing cost and schedule status.

DoD Manual 5000.2-M, "Defense Acquisition Management Documentation and Reports," February 23, 1991, incorporated the recommendation in the "A-12 Administrative Inquiry" that the Defense Acquisition Executive Summary report include estimates-at-completion (EACs) based on the cumulative cost-performance index.¹ An estimate for a program that is below this estimate must be explained in the Defense Acquisition Executive Summary Report. Historically, an EAC based on the cumulative cost-performance index has accurately predicted the lower limit of a range of potential EACs when the contract is between 15 percent and 85 percent complete.

Also, the Defense Contract Audit Agency (DCAA) initiated actions that included:

- o Identifying high-risk contracts for progress payment reviews and providing regional office emphasis and oversight on sensitive high-risk programs;
- o Emphasizing the requirement to include appropriate C/SC system audits in the planning process;
- o Issuing revised guidance for performing progress payment audits; and

¹ The cost-performance index is the ratio of the budget cost of work performed to the actual cost of work performed. The cost-performance index measures how well the contractor is progressing relative to its allocated budget. A ratio of 1 indicates that the contractor is progressing according to plan. A ratio of less than 1 indicates an overrun. A ratio of more than 1 indicates an underrun.

o Providing training related to C/SC system criteria and surveillance and basic C/SC information to DCAA auditors.

The Comptroller, DoD, Office for Contract Audit and Analysis, set up a practice to assemble available major acquisition program data to provide current financial information for the budget process and major program reviews by the Defense Acquisition Executive.

In addition to these DoD actions, a joint DoD and National Security Industrial Association (NSIA) team issued its report, "Program Management on the Cost/Schedule Management Process" (DoD/NSIA Report), May 1991. Although the DoD/NSIA Report was an information document, it made recommendations to improve the implementation and use of C/SC data. As a result of the report, the "Cost/Schedule Control Systems Criteria Joint Implementation Guide" (JIG), October 1, 1987, was supplemented in May 1991 to address concerns about work breakdown structures (WBS), baseline management, and reporting.

During our audit, improvements resulting from the "A-12 Administrative Inquiry" and the DoD/NSIA Report were being developed and implemented. If the new guidance and procedures had been in place, some deficiencies that we found probably would not have occurred or would have been corrected. However, additional improvements should be made in reviewing contractor C/SC systems and surveilling the C/SC system. In addition, action should be taken to establish meaningful performance baselines, use C/SC system data in progress payment reviews, recognize the interrelation with other contractor management systems, provide incentives for implementation and maintenance of C/SC systems and criteria for C/SC system validation withdrawal, and consider implementation and maintenance of the contractor's C/SC system during the contract preaward process.

Objective

The audit was initiated because of DoD concerns about the adequacy of management oversight of cost and schedule performance on major DoD acquisition programs. The audit objective was to evaluate the implementation and oversight of contractor C/SC systems and DoD's use of data reported by contractors complying with C/SC system criteria. The Under Secretary of Defense for Acquisition [USD(A)] provided comments on our objectives and scope and provided input on systems selected for the audit. The audit also evaluated internal management controls applicable to the implementation, oversight, and use of cost and schedule performance data.

Scope

We performed the audit from November 1990 to July 1992. To meet the objective, we reviewed implementation and evaluation of contractors' C/SC systems. We also assessed the accuracy and reasonableness of information submitted from the contractors' C/SC systems. We reviewed data dated from 1962 through 1991 and held discussions with Government and contractor personnel who knew about C/SC systems and the programs selected for audit. This economy and efficiency audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included tests of internal management controls as deemed necessary. Appendix E lists activities visited or contacted.

To accomplish the objective, we selected nine major DoD acquisition programs, three from each Service, for the audit. The programs were subjectively selected to provide a variety of weapon types and a cross-section of DoD procuring activities and contractors. The programs were selected from 121 programs in the Defense Acquisition Executive Summary reporting system. The nine programs were in the full-scale development or early low-rate initial production phases of the acquisition cycle. Programs in these acquisition phases were selected because we believed they would provide the most representative information about C/SC systems and system data.

The nine Defense acquisition programs selected were:

- o The Army's Advanced Antitank Weapon System-Medium (AAWS-M), Forward Area Air Defense System (FAADS)-Command, Control, and Intelligence, and M1A2 Tank;
- o The Navy's AOE-6 Fast Combat Support Ship, MK-50 Torpedo, and SSN-21 Submarine; and
- o The Air Force's C-17 Transport Aircraft, Short Range Attack Missile II (SRAM-II) System, and Titan IV Expendable Launch Vehicle.

Appendix A describes the nine programs.

To avoid duplication with other audits, we used the results in the Office of the Inspector General, DoD, Audit Reports No. 92-023, "Acquisition of the Advanced Antitank Weapon System-Medium," December 17, 1991, and No. 92-030, "Acquisition of the AOE-6 Fast Combat Support Ship," December 27, 1991.

The Office of the Assistant Inspector General for Audit Policy and Oversight provided staff to review DCAA efforts related to the objective. We also coordinated with the Office of the Inspector General, Department of Energy, on performance measurement for nuclear propulsion systems. Based on a request

by the Chairman of the House Armed Services Committee, we will provide the results of our audit to staff members of the Committee.

Internal Controls

We evaluated internal controls related to the implementation and oversight of contractor C/SC systems and the use of data from the systems, specifically those specified under the Federal Acquisition Regulation (FAR) and DoD Instruction 5000.2, "Defense Acquisition Policies and Procedures," February 23, 1991.² We identified internal management control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38.

Internal controls to implement and monitor contractor performance measurement systems existed. However, the controls were inconsistently or ineffectively applied as described in Findings A, B, D, and F. We do not consider these weaknesses material. However, in Finding C, we found that adequate controls did not exist for the review of EACs for progress payment purposes. We consider this a material internal control weakness because of the potential for overpayment of contractors. In Finding E, we found no incentives to ensure that a contractor maintains a valid C/SC system as approved. We consider this a material internal control weakness because of the potential lack of compliance with contractual terms and conditions and the potential that appropriate information is unavailable to DoD managers to make decisions concerning major acquisition programs.

Implementation of all recommendations in this report will provide enhanced internal controls for the material and non-material internal control weaknesses. Benefits associated with implementation of our recommendations are nonmonetary. Although no monetary benefits were quantifiable, improved internal controls will result in increased efficiency and effectiveness that indirectly produce monetary benefits. A copy of the final report will be provided to the senior officials for internal controls within the Office of the Secretary of Defense and the Military Departments.

² DoD Instruction 7000.2, "Performance Measurement for Selected Acquisition," June 10, 1977, was cancelled with the February 1991 revision to DoD Instruction 5000.2. The requirements included in DoD Instruction 7000.2 were incorporated into DoD Instruction 5000.2 and DoD Manual 5000.2-M.

Prior Audits and Other Reviews

No audit reports directly related to the audit objective have been issued within the last 5 years. However, in November 1990, the Office of the Secretary of the Navy issued a memorandum, "A-12 Administrative Inquiry," that included issues related to our objective and made recommendations to correct the deficiencies found. Specifically, the memorandum recommended a requirement to display a range of EACs in the Defense Acquisition Executive Summary report and to provide an explanation for an estimate lower than the estimate based on the cumulative cost-performance index. This recommendation was implemented in the February 23, 1991, revision of DoD Instruction 5000.2.

Also, the General Accounting Office (GAO) issued Report No. NSIAD-92-01 (Office of the Secretary of Defense (OSD) Case No. 8841), "Key Data Not Routinely Used in Progress Payment Reviews," January 14, 1992. The GAO recommended Administrative Contracting Officers (ACOs) be given Defense Plant Representative Office (DPRO) technical reports generated by contractor C/SC systems, DPRO independently developed EACs, and production and delivery data. Also, the GAO recommended that the ACOs use this data to identify contracts with performance problems and as a basis for detailed reviews of progress payments. The DCMC adopted the GAO recommendations and issued guidance requiring surveillance information from all contractor management control systems, including C/SC systems, be used by ACOs to assess reasonableness of progress payments.

As a result of issues identified during this audit, we issued reports on the SRAM II, C-17, SSN-21, and Titan IV programs (Appendix B).

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PART II - FINDINGS AND RECOMMENDATIONS

A. COST AND SCHEDULE CONTROL SYSTEM REVIEWS AND SURVEILLANCE

Although significant improvements had been initiated to enhance the usefulness and validity of C/SC systems and data from the C/SC systems, DoD management of the implementation and oversight of contractor C/SC systems could be more effective. The C/SC system reviews were not timely or consistently conducted. Also, surveillance and oversight of validated contractor systems were not accomplished in the most effective or efficient manner. The primary cause of the deficiencies is the lack of consistent, centrally-directed, and coordinated management of the contract administration activities for contractor C/SC systems. As a result, DoD acquisition program management cannot completely rely on the contractors' C/SC system data in the acquisition decisionmaking process, and prudent administration of DoD contracts is impaired.

DISCUSSION OF DETAILS

Background

The objectives of a C/SC system are to ensure that:

- o The DoD contractors use effective management control systems and procedures that indicate work in progress and properly relate cost, schedule, and technical performance; and
- o The DoD managers are provided valid, timely, and auditable contract performance information on which to base responsible management decisions.

A C/SC system must provide that actual work progress be measured by "earned value," an objective measure of how much work was accomplished on the contract compared to the planned work.

A C/SC system that meets the criteria specified under DoD Instruction 5000.2 applies to significant contracts and subcontracts within all acquisition programs unless waived by the milestone decision authority or designated representative. Significant contracts are those contracts with an estimated research, development, test, and evaluation cost of \$60 million or more and an estimated procurement cost of \$250 million or more in 1990 constant dollars. The C/SC system requirements may also be applied to major subcontracts by mutual agreement between the Government and the prime contractor, according to the subcontracts' criticality to the program. The contractors' existing management control systems are to be used rather than imposing another system on the contractors. The only requirement is that the existing management control systems must meet the criteria specified under DoD Instruction 5000.2.

In general, each Service is responsible for ensuring that the appropriate contracts require C/SC systems and for determining that its contractors have and implement C/SC systems that meet the criteria. The Services are responsible for conducting Subsequent Application Reviews (SARs) and other C/SC system reviews of the contracts awarded by the Services. The procuring activity establishes a team to conduct the SAR or other C/SC system review. The SAR team directors are from the Service C/SC system focal points. The SAR team chiefs are from the procuring activity, such as Air Force Space Division, Army Missile Command, or Naval Sea Systems Command.

The DCMC, through the contract administration offices (CAO) or DPROs, is generally responsible for monitoring contractor implementation of the C/SC system and application of the C/SC system to contracts, that is, conducting C/SC system surveillance. The same function is provided by the Supervisors of Shipbuilding, Conversion, and Repair (SUPSHIPS) for Navy shipbuilding contracts.

The DCAA is responsible for conducting audits of contractor systems and functions and assisting the DPROs and procuring activities to accomplish the contract administrative and oversight functions.

The Performance Measurement Joint Executive Group (PMJEG) provides uniform policy guidance and acts as arbitrator of issues about C/SC system criteria reviews and other C/SC system matters that cannot be resolved through established focal points. The PMJEG includes the focal points from each Military Service, the Office of USD(A) (an ex-officio member), and, as appropriate, DCAA and DCMC. We believe that the PMJEG should be chaired by the staff of the USD(A) with full-time representation by DCAA and DCMC because of recommended consolidation of the validation process.

Cost and Schedule Control System Reviews

Postaward contract reviews of the contractors' C/SC systems were untimely and lacked specific criteria or direction. Under DoD Instruction 5000.2, the DoD should review a contractor's C/SC system to ensure compliance with C/SC criteria. Detailed reviews of the contractor's C/SC system should occur after the contract is awarded, when an in-plant demonstration review is conducted to ensure that the contractor is operating a system that meets the criteria.

DoD Instruction 5000.2 further states that the Service will validate that the contractor's C/SC system meets the criteria and operates in accordance with the criteria. Once a successful review has been completed and the C/SC system has been validated, a contractor should not need another demonstration and validation review. Rather, subsequent contracts will have a shorter and

less detailed review, called a SAR, to ensure proper and effective application of the accepted system to the new contract. (Appendix C defines a SAR and other C/SC system terms used throughout this report.) An extended SAR allows a previously validated system to cover another program phase or to cover another contractor facility. An extended SAR can also be done in lieu of a full demonstration and validation review for a revised system description of a previously validated C/SC system. A SAR or extended SAR was applicable to the contracts we reviewed because the contractors had validated C/SC systems on prior contracts.

The SAR Planning and Execution. We found little information on how SARs were to be done, what data was to be reviewed, and how much detail was needed. We were unable to determine why certain C/SC system areas (criteria) were selected for review or the basis for the depth of the review. In addition, we found indications that Government personnel were not always used effectively.

The SAR plans. The JIG defines a SAR as a review performed in lieu of a C/SC system demonstration review and is limited in length and scope. The JIG also states that direct use of the JIG review checklist "is not appropriate unless used on an exception basis and in an abbreviated form." Other than this statement, the JIG provides little guidance on what and how a SAR should be performed. The assigned review director and the team chief were responsible for determining how the review was to be done.

For example, when we asked for SAR plans for the FAADS and the M1A2, we were told there were none. For the FAADS, we were given a document which identified the team members and the criteria for which a team member would be responsible. The M1A2 team chief stated that a written plan to conduct the review was not developed. The C/SC criteria checklist, which is included in the JIG, was the guide used for examining the C/SC system. However, little documented guidance existed to show which areas to concentrate on or how much detailed testing should be done. An overall SAR plan should include such information and should be based on the contractor's past experience.

Poor planning and inconsistent application of the C/SC system criteria and requirements resulted in contractor C/SC systems that were improperly reviewed and validated. While deficiencies in the shipbuilding industry were well-known to management, we found these problems in shipbuilding and other industries. For example:

- o Inspector General, DoD Audit Report No. 92-030, "Acquisition of the AOE-6 Fast Combat Support Ship," December 27, 1991, reported that the contractor's C/SC system was improperly accepted because it did not provide for time-phasing of material.

However, the C/SC system review team had concluded that the contractor's system met the requirements for C/SC validation.

o The Navy did not validate the Newport News Shipbuilding and Drydock Company's C/SC system for SSN-21 design effort because it had validated the contractor's construction C/SC system on the SSN-688 class submarines. The JIG states that production (construction) and development C/SC systems are different and should be validated separately.

o Within a year of the SAR for the FAADS' contract, problems with the system were identified that indicated that the original SAR may have missed critical C/SC system application issues. A Baseline Review for the FAADS program that resulted from a significant reprogramming effort identified some of the same deficiencies that were identified in the SAR. The DoD/NSIA Report also identified inconsistent or arbitrary interpretation of C/SC system criteria.

Effective use of SAR team members. The lack of a definite SAR plan results in poor coordination among team members. We found that in-plant Government personnel were not used effectively. Generally, most team members were from the Service procuring activity, including the program office. Although review participation varied, we found that the average participation was 1 DCAA and 3 DPRO or SUPSHIP personnel on SAR or extended SAR teams that averaged 13 personnel.

Since the DPRO or SUPSHIP, in conjunction with DCAA, is responsible for surveillance activities on C/SC systems on all contracts at the contract facility, greater participation of these organizations would have been justified. For example, at MK-50 Westinghouse, the Navy failed to include and coordinate with the local DCAA office in three C/SC system reviews (one SAR and two Baseline Reviews) conducted between September 1989 and December 1990. The DCAA was not actively included in the three reviews, even though DCAA had issued audit reports on pertinent issues affecting the MK-50 program, one of which resulted in a delay in the SAR. However, for the June 1990 SAR, DCAA wrote a memorandum for the record detailing the limited use of DCAA during the SAR. The memorandum stated that although DCAA was asked to participate in the follow-up SAR, the team chief failed to provide details, when requested, about what audit support was needed. Later the team chief told DCAA that he only required answers to accounting questions, despite DCAA's assertion that a detailed review was needed since one had not been performed. Also, DCAA informed the team chief that the baseline had been adjusted without approval. The DCAA had issued an audit report on this subject on June 8, 1990.

In December 1990, the MK-50 Program Office conducted a technical baseline review that also did not include DCAA as a team member. The November 28, 1990, memorandum announcing the review stated that the team would concentrate on program technical problems and

their impact on cost and schedule performance, and the mechanics of the Performance Measurement System. Another Navy memorandum stated that the baseline review agenda would include discussion with in-plant Government representatives that could disclose additional concerns. Again DCAA was not contacted even though the Navy had been notified that a full-scale review of the contractor's C/SC system was necessary.

The JIG states that the SAR team should be briefed by DPRO and DCAA on C/SC system surveillance activities at the contractor's facility. The SAR planning should be documented to detail the areas to be reviewed and the depth of the planned reviews. The planning should reflect the contractor's past experience. For example, significant or chronic deficiencies in the contractor's implementation of its C/SC system on other contracts should be considered and those areas given more detailed review. In addition, in-plant Government staff would know of other system deficiencies and the potential impact of the deficiencies on the C/SC system as discussed in Finding D.

Transactional testing and documentation. We also found that inadequate transactional testing was done when conducting the SARs and other C/SC system-related reviews. For example, the DCAA did not verify that the accounting criteria, as specified in the JIG, had in fact been implemented on the contract for at least three of the programs (FAADS, C-17, and SRAM II) that we reviewed. Rather, DCAA used its knowledge from previous reviews of the various contractors accounting-related systems to verify that the contractors' systems met the criteria. Most SARs appeared to concentrate on the process and not the data's accuracy.

In 8 of the 14 DCAA SAR audit files that we reviewed, we found no formal documentation describing what information or deficiency findings had been provided to the SAR team chiefs. The DCAA Contract Audit Manual, chapter 11-203, "Audit Objectives and Procedures during Evaluation and Demonstration," does not directly reference when an audit report should be written to the SAR team chief instead of a memorandum. However, the audit file should be clear as to exactly what information was provided. Without this documentation, the auditor cannot substantiate disagreements between the auditor's findings and the SAR report. We believe that the Contract Audit Manual should include more specific guidance on when an audit report instead of a transmittal memorandum with attachments should be issued. Also, the guidance should specify that deficiency reports and findings or any other written documentation given to the SAR team chief should be formalized and a copy included in the audit file for future reference.

Tri-Service Validations. Tri-Service validations of contractors' C/SC systems were based on reviews that did not include tri-Service representation on the validation review teams. The JIG states that it is often mutually helpful for

representatives of other interested DoD components to participate in C/SC system reviews. Such participation is beneficial because the contractor's C/SC system could be used on other Service contracts. Tri-Service validations ensure that all Services will use a single validated C/SC system for contracts at a contractor facility.

However, other than the DPRO and the DCAA, review participants were generally from the Service procuring activity that had the contract on which a validation or extended SAR was conducted. We found only one program that included a team member from another Service. The SAR for the FAADS had team members from both Air Force and Navy Plant Representative Offices. Both organizations have since been consolidated into a DPRO.

A tri-Service validation could be obtained with non-participating Services' review of the report on the C/SC system validation or extended SAR rather than the Services' actual participation in the review. For example, on the extended SARs at Newport News Shipbuilding and at Martin Marietta Corporation, tri-Service validations were given for both contractor C/SC systems, even though only the Navy and Air Force, respectively, participated in the validation review. The other two Services were not represented on either review team. The other two Services agreed to the validation based only on a review of the extended SAR reports.

We believe that tri-Service validations should have been based on teams with tri-Service representation. Consolidation of the C/SC system review and approval process within DCMC would take the C/SC system review and approval from a single Service and provide a more DoD-wide applicability.

Timeliness. The SARs were not completed in a timely manner. The JIG and Defense FAR Supplement 234.7001 state that a contractor should be ready for a SAR within 90 days after contract award. No program we reviewed had a SAR review within 90 days of contract award. However, two programs (M1A2 and MK-50 development) had a SAR begun within 90 days of contract definitization. In fact, the SARs for these two programs were done before the contracts were definitized.

The "90-day-after-contract-award" timeframe may be insufficient to demonstrate the C/SC system for a contract because at least one Cost Performance Report (CPR) was needed and the flow of management information and data had to be established. For one of eight contracts we reviewed, the contractor could not make the 90-day requirement because the contract requirement for the CPRs would not make a CPR report available for the SAR; on at least three of the eight contracts, meeting the 90-day requirement was unlikely; only one of the contracts could have meet the 90-day requirement. Yet, no change in the 90-day requirement was included in these five contracts. We were told by at least one SAR team chief that 6 months after contract award was a more

reasonable time to conduct the SAR. However, only two programs (FAADS and MK-50 development) had a SAR conducted within 6 months of contract award.

If necessary, the contracting officer can agree to a longer time before conducting the SAR. However, we found only three of the eight contracts in which the 90-day requirement to demonstrate the C/SC system had been negotiated to another timeframe. The SSN-21 construction contract with Electric Boat Division had established that the contractor would be ready for the SAR within 180 days of contract award or otherwise as agreed to by the parties. Similarly, the SSN-21 design contract with Newport News indicated the Navy would validate the contractor's C/SC system within 6 months after contract award. The AOE-6 contract established a requirement that the contractor be ready for a C/SC system demonstration within 30 days of contract award. A SAR was never done on the SSN-21 design contract; the SAR for the AOE-6 contract was done 3-1/2 years after contract award; and an extended SAR was done for the SSN-21 construction contract more than 2 years after contract award. In the latter case, the delay was coordinated with the Navy.

According to the JIG, paragraph 7-4f, the SAR report is issued only after deficiencies identified during the SAR are corrected. Deficiencies should be corrected within a reasonable time (normally 30 days), as specified by the procuring activity performing the review. For at least two contractors in our review (SRAM II and Titan IV), the SAR report was issued a year or more after the SAR visit, indicating that deficiencies were not corrected within 30 days. The June 1989 extended SAR at Newport News Shipbuilding identified significant deficiencies. However, it was not until December 1991, after another extended SAR in February 1991, that the C/SC system at Newport News Shipbuilding was given a tri-Service validation.

Although legitimate reasons exist to delay the SAR and issue the SAR report, we believe that the trend of delays noted in our review is not reasonable, especially since the contractors presumably already had a validated system implemented on other Government contracts.

We believe that the lack of a centralized DoD data base to track deficiencies and corrective actions contributed to the lack of timeliness. We found no DoD data base that would provide useful information to the team directors for planning C/SC system reviews. A data base that includes information on prior reviews, system deficiencies found during surveillance, and corrective actions would provide source selection officials with information to assess the time needed for the contractor to demonstrate its C/SC system on a new contract. While several individual tracking systems existed, they did not provide the overall status of the C/SC systems at an individual contractor with contracts from multiple DoD Components.

Need for Consolidation. We believe that consolidating the C/SC system review process within DCMC would alleviate problems and complaints associated with the inconsistencies in the C/SC system review process. Such a consolidation would improve internal controls by providing for a separation of duties between program management and contractor C/SC system validations and reviews.

Inconsistencies are inherent in the SAR process because each Service conducts the SARs for its own programs. No real incentive exists to accomplish the review in a timely manner. Contractor C/SC system validation and the conduct of SARs should not be, in our opinion, a program management or procurement responsibility but rather should be a contract administration responsibility. Conversely, program management should be directly responsible for assessing the adequacy of the performance measurement baseline with input from the cognizant DCMC activity. The present alignment of these responsibilities within the Services does not let the CAO effectively integrate system validations and SARs, along with other system reviews, with surveillance for all contracts at the contractor facilities. It also impedes contract administrative oversight of C/SC system deficiencies in multi-division corporations where corporate action may be necessary.

Consolidation of the validation and SAR process within DCMC would provide more consistency in the application of system criteria, put the review and validation in the same organization responsible for surveillance, and result in "one face to industry," a benefit recognized by the Defense Management Review.

The consolidation would be consistent with the Defense Management Review initiatives that consolidated the Services and Defense Logistics Agency contract administration functions under the newly formed DCMC. Similar consolidations were considered for the contract administrative functions at the Navy's SUPSHIPS. The SUPSHIPS should implement DCMC policy and guidance concerning C/SC systems. We also believe that DCMC should be responsible for C/SC system reviews for the shipbuilding programs, as well as for other major acquisitions. A similar consolidation was being considered for Army ammunition plants. Although Army ammunition plants were not included in our audit, for consistency and standardization, DCMC could also be responsible for C/SC system reviews at the ammunition plants.

The consolidation of the SAR reviews within DCMC would also help the development and use of a centralized data base. A data base that details completed reviews and that gives the status of deficiencies and corrective actions would aid SAR planning.

Finding F identified the need for improvements in the preaward process. Part of the preaward process should include a sufficient assessment of the contractor's system and prior record

for implementing and maintaining an effective C/SC system to determine when a SAR or other C/SC system review should be done, as well as the depth of review needed.

Cost and Schedule Control System Surveillance

Surveillance, or monitoring, of the contractors' C/SC systems needed improvement to ensure that valid, timely management information was provided; that the C/SC system continued to comply with the DoD C/SC system criteria; and that the C/SC system was properly implemented on the contract. Surveillance plans were not developed or fully implemented. Coordination, staffing, and surveillance of critical subcontractors was inadequate. All nine systems reviewed had some deficiency related to surveillance planning, staffing, or subcontractor management.

Surveillance is a DoD management responsibility at a contractor's facility to ensure the contractor complies with the contract requirements. The DoD Instruction 5000.2 and DoD FAR Supplement 242.302 define surveillance as recurring evaluations to ensure that the contractor's system continues to meet the C/SC system criteria and provide valid data. Surveillance reviews should be based on selective tests of reported data and periodic evaluations of internal practices throughout the life of the contract. Defense FAR Supplement 242.302 requires that, in contracts with C/SC system requirements, CAOs perform surveillance to monitor if contractors continue acceptable operations. The DCMC Contract Administration Manual 8105.1, October 1990, states that the DCMC office and the resident contract auditor are primarily responsible for ensuring that the contractor continues to comply with the C/SC system contract requirements. The DCAA Contract Audit Manual, chapter 11-200, "Review of Contractor Compliance with Cost/Schedule Control Systems Criteria (C/SCSC)," also provides guidance on doing surveillance reviews. The Joint Surveillance Guide describes the surveillance responsibilities of different organizations and outlines the requirements and procedures for successful C/SC system surveillance.

Although surveillance was done at all locations, the degree of surveillance varied. Such variance can be expected because of differences in the programs and contractors and what was needed for adequate surveillance. However, the differences did not appear to be based on the needs of the specific program managers or the program conditions.

Surveillance Planning and Coordination. Surveillance plans were inconsistently developed and used, and effective coordination of the required surveillance was not accomplished. The Joint Surveillance Guide states that a memorandum of agreement between the procuring activity and the CAO should describe, in general terms, the responsibilities and relationships for C/SC surveillance. A surveillance plan should

augment the memoranda of agreement and describe how the CAO, with DCAA participation, will carry out the C/SC surveillance responsibilities, including verifying, tracing, and evaluating the information in the reports. At least four of the nine systems (M1A2, MK-50, SSN-21, and Titan IV) we reviewed did not have an approved surveillance plan that reflected the specific program requirements, although the memoranda of agreement had required surveillance plans.

The DPRO should develop the surveillance plan using input from the Program Office and DCAA. We found little indication that surveillance activities were effectively coordinated. The C/SC system surveillance requires participation and full cooperation of the Program Office, CAO, DCAA, and the contractor. For example, at six of the nine audit offices (FAADS, M1A2, MK-50, SRAM II, C-17, and Titan IV), DCAA did not properly document coordination efforts for surveillance functions.

We also found that some DPROs were providing little more than a CPR analysis based on using the CPR data in simple EAC models. While this information is useful and necessary as a way of identifying the need for more detailed surveillance and testing of the data, similar analysis can be and was done by the Program Offices and often by buying command financial organizations.

The DPROs should emphasize the detailed review of data supporting the CPR and ensure that the contractors' systems continue to meet the C/SC system requirements. This indicates the importance of and need for the DPRO, DCAA, and the program offices to work together to determine what needs to be done by each organization to provide adequate and meaningful surveillance of the contractors' systems and progress.

The surveillance monitor for the FAADS program requested that DCAA reconcile the CPRs and Contract Funds Status Reports. However, DCAA declined to reconcile the reports because "the responsibility for contractor cost reconciliations rests with the contractor." The DCAA office concluded this because the Joint Surveillance Guide states that "contractor reconciliations of appropriate financial data should be verified periodically." However, the Joint Surveillance Guide also states that the contractor reconciliations should be verified to assure that data in external reports are valid, reconcilable, and traceable to other reports and to cost and schedule data bases. The DPRO requested that the contractor provide an explanation of differences (reconcile) between the CPRs and Contract Funds Status Reports. However, we found no indication that the DCAA was subsequently requested to review the reconciliation, and DCAA never verified the reconciliation. Most of the memoranda of agreement and surveillance plans indicated that reconciliation of external reports, such as CPRs and Contract Funds Status Reports, were to be done either by the DPRO or DCAA. This indicates the importance of proper coordination and planning for surveillance functions.

We believe that the lack of effective, documented coordination and planning among the DPRO, DCAA, and the program offices resulted in misunderstandings as to what functions each was to perform.

The DCAA should establish designated focal points for C/SC system activities at locations that have significant or high-risk contracts with C/SC system requirements. Designated C/SC system focal points could facilitate coordination and planning with the DPRO and program office on C/SC system reviews and surveillance activities.

Resources. The DPRO and DCAA are generally responsible for surveillance of the contractors' C/SC systems. We found that DPRO and DCAA did not consistently apply resources to the surveillance function. For example:

- o The C-17 C/SC DPRO surveillance monitor position was vacant for about a year.

- o At the Newport New Shipbuilding SUPSHIP, one person was responsible for the surveillance activities for five contracts.

- o Because the DPRO at the FAADS contractor did not have the resources to provide a surveillance monitor for the FAADS contract, the program office provided the surveillance monitor, and technical support staff.

- o On the SRAM II and Titan IV programs, the DPRO surveillance effort was an additional task for the DPRO program managers.

The DCAA had not adequately planned staffing to accomplish the required C/SC surveillance. As we noted previously in this report, DCAA often failed to plan properly for the surveillance audits and, therefore, did not request the required staffing needed to conduct the audits. The audit offices generally had to re-prioritize audits to accommodate the increased emphasis on progress payment and C/SC system reviews that resulted from the "A-12 Administrative Inquiry." In a December 1990 memorandum, DCAA Headquarters requested that regional offices reassess their FY 1991 coverage of progress payment and C/SC system reviews to identify high risk contracts and to determine what additional audit coverage was necessary. Four of six regional offices identified the need for additional staff, totaling about 30,000 additional staff-hours annually or about 20 additional auditors to perform the required coverage.

The DCAA Headquarters also reemphasized the importance of the progress payment and C/SC system reviews in developing resource requirements for FY 1992. An additional 167,000 staff-hours were budgeted in FY 1992 for "Special Audits," which include progress payment reviews and C/SC system audits. However, the regional

staffing requests were adjusted by the Headquarters based on historical experience. These adjustments are questionable because the FY 1991 regional assessments indicated that the audit coverage for C/SC systems and progress payments was inadequate. Because of proposed staffing cutbacks, DCAA may be unable to allocate enough resources to perform adequately the C/SC system reviews required in the Contract Audit Manual. For example, DCAA staff was reduced from a high of 7,115 personnel in FY 1989 to 6,193 personnel in FY 1991 with additional cuts of about 1,000 planned from FYs 1992 through 1995.

In addition to potential staffing shortages to accomplish the C/SC system reviews, we found that most DCAA auditors did not have C/SC training. However, in 1991, DCAA initiated a 12-hour training course that was provided to some of its field auditors. This training provided basic information on C/SC system requirements and how to calculate EACs using standard formulas. Also, some DCAA offices were attempting to obtain training for their auditors in other C/SC systems training courses provided by DoD. However, we believe that training should be incorporated into other DCAA training courses to familiarize all auditors with the existence of C/SC system requirements and how the requirements may impact the DCAA audits and audit findings. We did not identify a significant lack of training with the DPRO staff.

Given the continued importance of adequate reviews and surveillance of contractor C/SC systems, it is imperative that adequate numbers of trained staff be available to accomplish the required reviews and surveillance of C/SC systems and data. However, the reality of personnel cutbacks and the unlikely event of maximum resources make it imperative that effective coordination among the DPRO, DCAA, and the program offices be established and maintained to ensure adequate coverage. Therefore, DCMC and DCAA must evaluate the contracts and contractors to prioritize the work that needs to be done by each organization to ensure total coverage of the C/SC system implementation. Also, identifying the impact of findings in other system reviews, such as estimating system reviews, on the C/SC system will help ensure more effective use of the limited resources available to perform the CAO and DCAA functions (see Finding D).

Surveillance of Critical Subcontractors. Surveillance of critical subcontractors did not ensure valid and timely management information. DoD Instruction 5000.2 states that subcontracts may be selected for C/SC application by mutual agreement between the prime contractor and the Government. If a prime contractor contractually requires a subcontractor to comply with the C/SC system requirements, then surveillance is a basic responsibility of the prime contractor as part of the total subcontract management.

The Government's CAO function normally is limited to evaluating the effectiveness of the prime contractor's management of the subcontract. However, when the CAO determines that the Government's best interest is served by providing subcontractor surveillance, agreements with the prime contractor can be made for the Government to provide the surveillance. Such assistance should generally be provided only when:

- o the prime contractor is unable to accomplish the required surveillance because the surveillance would jeopardize a competitive position,

- o a business relationship exists between the prime contractor and subcontractor that is not conducive to independence and objectivity, or

- o the subcontractor is sole source and the subcontract's costs represent a substantial part of the prime contractor's costs.

At least eight of the nine programs (AAWS-M, FAADS, M1A2, MK-50, SSN-21, C-17, SRAM II, and Titan IV) had subcontracts that had C/SC system criteria requirements. Five programs (AAWS-M, FAADS, M1A2, SSN-21, and Titan IV) had limited or inadequate surveillance of critical subcontractors. For at least two of the five programs (AAWS-M and SSN-21), the nature of the relationship between the prime contractor and subcontractors indicated that Government surveillance was warranted and should have been considered during negotiation or source selection. The other three programs experienced problems with the adequacy of the prime contractor's surveillance of the subcontractors.

We also noted that DCAA had not reviewed the adequacy of the contractor's surveillance as required by DCAA Contract Audit Manual, chapter 11-208, "Surveillance of Subcontractors." In general, we also did not find instances where DCAA requested assist audits from other DCAA offices at subcontractors for C/SC surveillance information. In July 1991, DCAA issued a standard audit program for C/SC system surveillance that included audit steps that addressed subcontractor surveillance. However, the Contract Audit Manual, chapter 6-311.4, "Audit Guidelines, Subcontracts," which addresses the administration of subcontracts, does not recognize the relationship of subcontractor surveillance with the C/SC system.

Because of the large amount of subcontracted effort in the major DoD programs, the significance of subcontract performance is critical. Thus, adequate surveillance of the subcontractors' C/SC systems must be done where applicable. Part of the preaward and negotiation process should include assessment of the prime contractor's ability to provide surveillance. In those cases where prime access to a subcontractor may be limited, the negotiations should provide consideration for the Government to provide the surveillance. The DCMC should supplement the

existing guidance for obtaining Government oversight and surveillance of critical major subcontractor's cost and schedule control systems when the prime contractor cannot or will not provide adequate subcontract surveillance. Also, guidance to provide incentives to ensure the timely implementation and maintenance of a validated system, including withdrawals of contractor validations (as recommended in Finding E) should be flowed to critical subcontractors. The DCAA should also revise audit guidance on subcontract administration to recognize the relationship of subcontract administration with C/SC system.

Data Verification. Verification of the data in the contractor's cost and schedule reports was limited. The CAO is responsible for evaluating the reasonableness of contractor-reported scheduling data and contract status. However, we found little verification or transactional testing to assess the accuracy of the information contained in cost and schedule reports. Our review found that for at least five of the nine systems (M1A2, MK-50, SSN-21, SRAM II, and Titan IV), the DPRO or SUPSHIP did limited actual physical verification of contractor progress.

Also, the DCAA failed to provide sufficient audit coverage of contractors' performance measurement systems or perform adequate data verification in the form of transactional testing. The Defense Contract Audit Manual, chapter 11-204, specifies that reviews should be performed at least yearly. Although tests of certain aspects of the system should be performed as needed to ensure reliance on the C/SC system and its output, the Manual also states that the various procedures listed should be considered in developing an audit plan for a C/SC system review.

Surveillance audits generally included verification of contractor reconciliations of the various performance measurement reports, such as the CPRs and Contract Funds Status Reports, with the contractor's cost ledgers. At only one location (SSN-21 Electric Boat) did the audit office comply with the Defense Contract Audit Manual's guidance on surveillance audits. At three locations (C-17, SRAM II, and Titan IV) visited during the audit, DCAA surveillance audits were only done when requested by the CAO or by the program office. At five other locations (M1A2, FAADs, AOE-6, MK-50 Westinghouse, and SSN-21 Newport News Shipbuilding), DCAA surveillance audits were either not done at all or had not been done since 1983. For example, at one office (MK-50 Westinghouse), DCAA had never verified, for any contract, that the reports reconciled to the cost ledgers. Other audit work, such as verification of earned and planned values, variance analysis, implementation of contract changes, and surveillance of subcontractors, was not done. Thus, audit offices that only performed surveillance reviews on request had not planned their surveillance activities in accordance with the Contract Audit Manual.

Conclusion

Over time, many similar problems and issues related to C/SC systems have surfaced. In July 1986, the results of a review that was conducted for the Assistant Secretary of Defense (Comptroller) (now the Comptroller of the Department of Defense) revealed typical points of contention between the Government and industry concerning C/SC implementation, such as time required to implement C/SC systems, levels designated for management and reporting, variance analysis thresholds, and system discipline requirements. In May 1991, the DoD/NSIA Report noted similar areas of dissatisfaction with C/SC implementation, that is, inconsistent establishment, maintenance, and oversight of the C/SC systems led to a lack of system discipline. Our recommendations are made to strengthen the existing policies and procedures.

The biggest misconception seemed to be the perception that the C/SC system is another system that DoD is making contractors use. However, it is a contractor's own system. The DoD only requires that a contractor's system meet certain criteria. Consolidating the C/SC system validation and review functions within DCMC will provide more consistency in the Government oversight of the C/SC systems and will result in better integration of all contractor management control systems. In its role as the contract administration organization, the DCMC is already responsible for reviewing, approving, and monitoring other contractor systems, such as billing and purchasing systems, and providing surveillance for implemented C/SC systems. Also, the DCMC can take the lead in providing preaward assessments of a contractor's implementation and maintenance of a viable C/SC system and in planning SARs and other C/SC reviews. Strong coordination efforts with DCAA and the program offices will be required. Also, the PMJEG should be kept active to continue to provide policy guidance and arbitrate issues that cannot be otherwise resolved.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend the Under Secretary of Defense for Acquisition:

a. Consolidate the responsibility for validating contractor cost and schedule control systems under the Defense Contract Management Command.

b. Direct that Supervisors of Shipbuilding, Conversion, and Repair implement guidance on cost and schedule control system criteria, reviews, and surveillance that is issued by the Defense Contract Management Command.

c. Designate the Director for Performance Management, Office of the Director for Acquisition Policy and Program Integration, as chairman of the Performance Measurement Joint Executive Group.

d. Revise the Joint Implementation Guide to make representatives from Defense Contract Audit Agency and Defense Contract Management Command full-time members rather than members "as appropriate."

Management comments. The Director, Acquisition Policy and Program Integration (AP&PI), Office of the USD(A) concurred with the findings related to Recommendations A.1.a. and A.1.c. and proposed alternative recommendations to correct the problems identified in the report. The Director concurred with Recommendations A.1.b. and A.1.d. and proposed acceptable actions to implement the recommendations. Although not required to comment, DCMC provided comments to Recommendation A.1.a. The full text of the comments is at Part IV.

Recommendation A.1.a. The Director, Acquisition Policy and Program Integration did not agree that the best way to correct problems identified in the report was to consolidate the C/SC system reviews within DCMC. Instead, the Director proposed to strengthen DCMC's role in the C/SC system reviews by designating DCMC as the permanent chair of the PMJEG. The Director believed this would address problems such as scheduling, coordination and timeliness of reviews, follow-up on corrective actions required, system surveillance, and development of a central data base. The Director would remain an ex-officio PMJEG member and would maintain accountability over C/SC system policy and procedures because DCMC reports to USD(A).

The Director believed that the SAR review function is inherently a program management responsibility and that to take this responsibility away from program management would make C/SC an activity outside integrated cost, schedule, and technical management performed by program management.

The Director also stated that shipbuilding C/SC system management should not be transferred to DCMC because overall contract administration was not transferred to DCMC from the SUPSHIPS.

DCMC did not agree that there was an inherent conflict of interest between contract administration and program management. Also, DCMC stated that if Recommendation A.1.a. was implemented, the extent of the DCMC responsibilities must be clarified and resources provided. The Navy also did not agree that the C/SC system review process should be taken from the buying commands.

Recommendation A.1.b. The Director proposed to issue guidance that implements the recommendation.

Recommendation A.1.c. The Director proposed to designate DCMC, rather than the Director for Performance Measurement, as the permanent chair of the PMJEG. The Director for Performance Measurement would remain an ex-officio member of the PMJEG.

Recommendation A.1.d. The Director proposed to revise the JIG to make DCAA and DCMC full-time members of the PMJEG.

Audit Response. The actions proposed by the Director, Acquisition Policy and Program Integration for Recommendations A.1.b., A.1.c., and A.1.d. meet the intent of our recommendations. However, the Director should reconsider Recommendation A.1.a. in comments to the final report.

We do not understand how, as stated by the Director, the proposal to make DCMC the permanent chairman of the PMJEG would address problems such as scheduling and coordination, timeliness and follow-up of reviews, surveillance, and development of a central data base. According to the JIG, the PMJEG provides uniform policy guidance and a forum to arbitrate any matters concerning C/SC system reviews and other matters not resolved through the established Service focal points. Based on this description, it is not clear how the proposed action implements the intent of our recommendation because the PMJEG, as chartered, does not have management responsibilities.

The primary intent of Recommendation A.1.a. was to ensure that C/SC system reviews for Defense contractors are done consistently and without duplication, as well as to improve scheduling, coordination, and timeliness. We did not intend to take away the inherent program management responsibility to manage cost, schedule, and technical performance. In fact, we view program management as a user of C/SC system data. Thus, we recognize the program management need to understand the contractor C/SC system to manage the programs properly and to fully support the implementation of viable contractor C/SC systems. However, program management can perform the full range of cost, schedule, and technical management tasks without being responsible for C/SC system validation. The "ownership" issue raised by the Director is strictly a perception; the fact that the DCMC would be responsible for ensuring the validity of the C/SC-generated data should not impact how the data are used in program management. The Director's response also does not address the inherent internal management control weakness created by placing C/SC validation and procurement responsibilities together, which is the current situation. The validation process should not be an "afterthought" in the award of a contract, but should be recognized as a potential "show stopper" to a contract award if validation was not attained. This recognition would be more probable if the validation process were controlled by the DCMC.

Because of the significant role program management has in the reviews, strong coordination with and participation by program management is necessary.

However, the consistency in Government oversight that would occur with one organization performing C/SC system reviews would benefit both the Government and the contractors. While DCMC might need additional resources, it would be more effective and less costly to consolidate rather than continue to have each Service maintaining separate functions and performing redundant or inconsistent, uncoordinated reviews. Team staffing could come from the procuring activity and should include the program office. DCMC could absorb the resources currently within the Services performing these functions.

Implementation of proposed actions for Recommendations A.1.b. and A.1.c. are acceptable alternatives to the portion of the Recommendation A.1.a. concerning C/SC system reviews at shipbuilders. Therefore, we deleted that portion of the draft recommendation.

2. We recommend the Director, Defense Contract Audit Agency:

a. Provide additional training on cost and schedule control systems to include responsibilities for demonstration and validations, subsequent application reviews, and surveillance. Information about cost and schedule control system requirements should also be integrated into existing Defense Contract Audit Agency courses, such as "Technical Indoctrination," "Briefing Contracts," and supervision and management courses.

b. Establish a point of contact (monitor) for cost and schedule control systems in field offices with significant contracts with cost and schedule control system requirements or high-risk contracts.

c. Provide guidance and standard audit programs for Defense Contract Audit Agency participation in validations, subsequent application reviews, and other cost and schedule control system-related reviews, to include necessary transaction testing and formal documentation of the audit results given to the review team leaders.

Management comments. The Assistant Director, Policy and Plans submitted DCAA's proposed actions to implement the intent of Recommendations A.2.a, A.2.b., and A.2.c. The full text of DCAA comments is at Part IV of this report.

Recommendation A.2.a. DCAA stated that in FY 1993, it would develop an awareness training course that would focus on the interrelationship between C/SC and other audits performed by DCAA.

Recommendation A.2.b. DCAA believed that establishing a monitor was duplicative and unnecessary because the field audit office manager and the supervisory auditor are the best people to ensure that C/SC system information is considered in all audit

reports. DCAA proposed to issue a memorandum that reemphasizes the importance of considering the impact of system reviews on the contractor's C/SC system.

Recommendation A.2.c. DCAA stated that it had updated the audit program for C/SC surveillance and incorporated C/SC requirements in five other standard audit programs. Also, in addition to enhancing current guidance in the Contract Audit Manual, DCAA would develop audit steps for C/SC criteria that DCAA is generally assigned to review.

Audit Response. DCAA's proposed actions for Recommendations A.2.a. and A.2.c. will implement the recommendations.

We accept the proposed alternative action for Recommendation A.2.b. We agree that the field audit office manager and supervisory auditor should be the best people to ensure that C/SC system information is considered. However, in the past, they had not adequately performed this function. We believe, however, that the implementation of additional guidance, revision of audit programs, and the reemphasis proposed by DCAA can correct the problem.

3. We recommend the Commander, Defense Contract Management Command, Defense Logistics Agency:

a. Provide guidance and resources for the consistent and adequate surveillance of contractor cost and schedule control systems to include:

(1) evaluating high-risk contracts and coordinating with DCAA and the program office, at least annually, to ensure the effective use of existing resources.

(2) supplementing existing guidance for Government oversight and surveillance of critical major subcontractors' cost and schedule control systems and data from the subcontract systems to ensure adequate surveillance of subcontract cost and schedule control system when the contractor cannot or does not provide adequate subcontractor surveillance. Included in the guidance should be a requirement for an assessment of the contractor's ability to provide adequate subcontractor surveillance as part of the preaward assessments of the contractor implementation of cost and schedule control systems on prior contracts.

(3) developing guidance on the need to maintain an up-to-date surveillance plan and the need to conduct periodically data verification and transactional testing of the contractor's data, especially related to earned value determinations.

b. Establish a data base to provide information on contractors' compliance with cost and schedule control systems requirements. The data base should include information on

validations, subsequent application reviews, and other cost and schedule control system reviews, deficiencies identified in the reviews and during surveillance, and a system to track corrective actions.

c. Establish policy that requires a documented strategy for Subsequent Application Reviews to include the depth of the review of specific criteria and deficiencies noted from implementation and surveillance reviews of other contracts.

Management comments. The Defense Logistics Agency (DLA) concurred in whole or in part with Recommendations A.3.a., A.3.b., and A.3.c. DLA also provided clarifying and editorial comments, which have been incorporated in this final report, as appropriate. The full text of the comments is at Part IV.

Recommendation A.3.a. DLA stated the Joint Surveillance Guide would be revised to address prime and subcontractor surveillance planning, joint planning between the DCMC field activities and DCAA, and planning with the contractor. DCMC also recognized the need for effective coordination among DCMC, DCAA, program offices, and contractors to be established and maintained.

Recommendation A.3.b. DLA stated that an interim data base and reporting procedure would be established and that the Contractor System Status Module of the DCMC Management Information System would be used to collect and report C/SC status information.

Recommendation A.3.c. DLA stated it was working with the PMJEG to revise the JIG to include procedures for developing a documented strategy for SAR to include the depth of review and specific criteria.

Audit response. DLA's proposed actions for Recommendations A.3.b. and A.3.c. meet the intent of the recommendations. We ask that the revisions to the JIG be provided for our review. However, DCMC did not completely address Recommendation A.3.a. DCMC should provide additional comments to Recommendations A.3.a.(1) and A.3.a.(3).

The intent of Recommendation A.3.a.(1) guidance to evaluate high-risk contracts was to ensure that limited resources were effectively used. DCMC recognized that the reality of continued personnel cutbacks and reduced resources make effective coordination imperative but did not specifically address identification of high-risk contracts or contractors. DCMC, with the program management and DCAA, must identify high-risk contractors and contracts. In planning for SARs or other C/SC system reviews, the high-risk contractors and contracts would receive the most resources.

In response to Recommendation A.3.a (3), DLA did not address whether the planned revision to the Joint Surveillance Guide or other guidance would address the need to maintain an up-to-date surveillance plan and to conduct periodic data verification and transactional testing. We ask that the DCMC's responses to the final report provide this information.

STATUS OF RECOMMENDATIONS

<u>Response should cover:</u>				
<u>Number</u>	<u>Addressee</u>	<u>Concur/ Nonconcur</u>	<u>Proposed Action</u>	<u>Completion Date</u>
A.1.a.	Under Secretary of Defense for Acquisition	X	X	X
A.2.	Director, Defense Contract Audit Agency	(copy of proposed guidance)		
A.3.a.(1)	Commander, Defense	(additional comments)		
A.3.a.(3)	Contract Management Command			

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B. PERFORMANCE MEASUREMENT BASELINE

Contract performance measurement baselines did not reasonably represent the cost or extent of work that needed to be done to complete the contract. This condition existed because contracts were negotiated without regard to the establishment of realistic baselines. Also, DoD management did not adequately evaluate and monitor the contract performance measurement baselines. Consequently, the budget allocated for work to be performed was insufficient, and effective performance measurement was impaired because there was an imbalanced relationship between the allocated budget and work package content.

DISCUSSION OF DETAILS

Background

A critical part of a C/SC system is the performance measurement baseline.³ Effective baseline establishment and control is key to effective performance control and measurement.

Under DoD Instruction 5000.2, the negotiated contract cost is the basis for the baseline. To measure contract cost performance, it is important that internal budgets sum to the contract target cost. The JIG states that the performance measurement baseline should be planned during the proposal phase and completed as soon as possible after contract award. Further, revisions to the baseline, called reprogramming or restructures, should not be done more frequently than annually and preferably no more than once during the contract life.

Baseline Adequacy

Despite the importance of a baseline for effective contractor performance measurement, we found that at least five of the nine major DoD acquisition programs that we reviewed (AAWS-M, FAADS, M1A2, AOE-6, and SRAM II) had contracts awarded with target costs lower than cost estimates to accomplish the work.

The baselines that were established from the lower negotiated contract costs were unrealistic, resulting in major program restructures. Seven of the nine programs that we reviewed (AAWS-M, FAADS, M1A2, MK-50, SSN-21, C-17, and SRAM II) required at least one reprogramming of the contract work. Three of the seven programs (AAWS-M, FAADS, and M1A2) had significant program restructures within about 1 year of contract award.

³ The performance measurement baseline is the contractor's plan for accomplishing the required work. It includes schedules and budgets for all authorized work. It ties together cost, schedule, and technical performance of the tasks that make up the total contract effort, that is, what must be done, when, and at what cost.

Each of the three programs also had more than one reprogramming. For example, on July 31, 1989, the M1A2 contract for full-scale development was definitized for a price of \$187 million, even though the Government estimate was as high as \$260 million. However, 6 days earlier, on July 25, 1989, the contractor requested an over-target baseline⁴ to \$207 million. The over-target baseline was approved in September 1989. In January 1990, 4 months after the over-target baseline approval, the contractor again requested a revised baseline to \$274 million. The new baseline was approved in March 1990. As of April 1992, the full-scale development contract target amount had increased to \$332 million. Of the \$145 million increase (\$332 million minus \$187 million), \$141 million was attributed to cost overruns.

Other consequences of unrealistic baselines include contract cost overruns hidden by "front loading"⁵ the performance baseline and the contractor measured against an unrealistic baseline. Neither provides the Government or the contractor with effective and meaningful management control.

In addition, the restructured contract performance baselines may result in Acquisition Program Baseline⁶ breaches. Of the six programs that were reprogrammed, at least three (AAWS-M, M1A2, and SRAM II) had Acquisition Program Baseline breaches within 6 months of contract baseline restructures.

Baseline Reviews

Generally, the baseline was not reviewed until after contract award when the Subsequent Application Review or other appropriate type review of the contractor's implementation of the C/SC system on the contract was made. This review often did not occur until well into the contract. Of the nine programs reviewed, only two (FAADS and MK-50 development) had a review of the C/SC system on the contract within 6 months of contract award.

⁴ An over-target baseline is a performance measurement baseline that represents a replanning of the work required to complete the contract based on an EAC that exceeds the contract target cost. Such replanning must be formally established, controlled, and approved by the Government.

⁵ "Front loading" means that the budget and schedule have been allocated to earlier tasks with insufficient budget and schedule allocated to later tasks. The result of "front loading" is to delay recognition of significant problems and overruns.

⁶ The Acquisition Program Baseline embodies the cost, schedule, and performance objectives for the program. This baseline is approved by the milestone decision authority at acquisition decision points or when changes have occurred. Program managers must submit deviation reports when a baseline breach has or will occur.

Three contracts (M1A2, FAADS, and MK-50) were not definitized until after the SARs were conducted. Our assessment of the SARs and other C/SC system reviews, such as a Baseline Review,⁷ indicated that the reviews concentrated more on the process and the traceability of cost and schedule data rather than the sufficiency of the performance measurement baseline. For example, the Baseline Review for the FAADS Program was conducted without discussion with cost account managers.⁸ We also found no indication that the contractors' preliminary baseline was reviewed before contract award.

An evaluation of the sufficiency of the contractor's proposed baseline would be consistent with source selection criteria. Specifically, an evaluation would be consistent with those criteria that require an assessment of technical and financial risk to design, produce, and operate the proposed system within cost, schedule, and other resource constraints. Also, such an evaluation would be consistent with the source selection criteria requiring an assessment of the realism of the contractor's contract cost estimate considering the scope of work to be performed and the degree of technical risk in the proposed system.

Nature of Work

The type, or nature, of the work to be done also was not always adequately considered when establishing the performance measurement baseline and the C/SC reporting requirements, including the Work Breakdown Structure (WBS).⁹

Development Versus Production Cost and Schedule Control System Reviews. We found inconsistent application of reviews of contractor C/SC systems for development (design) and production (construction) efforts. The JIG recognizes the different nature of the work by stating that C/SC systems will be validated for development effort and for production effort. The JIG also

⁷ A Baseline Review is conducted to determine, on a very limited sampling basis, that a contractor is continuing to use the previously accepted performance measurement system and is properly implementing a baseline on the contract.

⁸ A cost account manager is a member of a contractor's functional organization responsible for task performance detailed in a cost account and for managing the resources authorized to accomplish the tasks.

⁹ The WBS represents the contract work to be done and the way it is to be managed and performed. The WBS defines the product to be developed or produced and relates the elements of work to be done to each other and to the end product. The combination of WBS and functional areas defines the point at which technical, cost, and schedule management and control occur.

states that an extended SAR can be accomplished, instead of a validation review, to extend the existing validation to another phase, such as from development to production.

For example, as reported in Inspector General, DoD, Report No. 92-052, "Use of Contractor Cost and Schedule Control Systems for the SSN-21," February 19, 1992, the SSN-21 design contractor, Newport News Shipbuilding, did not have a validated C/SC system for the design effort. In addition, neither a SAR nor an extended SAR was done. A tri-Service validation of the contractor's C/SC system for ship construction was given in the fall of 1991 based on the SSN-688 class submarines. However, there are significant differences between the design of a ship and the construction of a ship.

For another example, the Air Force reviewed the Douglas Aircraft Company (Douglas) C/SC system for the C-17 development effort. Although the contract included production of six aircraft, the Air Force did not conduct a production C/SC system review because the first four production aircraft were essentially test vehicles and the work more appropriately reflected development effort. The Government planned to review the C-17 contractor's implementation of its production C/SC system, a separate review from the review of the development C/SC system, for the third production contract.

Development Versus Production Status. Adequate reporting of the nature of work was primarily an issue with the Titan IV contract, which had about \$1.9 billion for development-related effort, \$4.7 billion for production-related effort, and \$0.4 billion for other types of effort, such as launch services. The JIG states that when establishing a contract WBS, it is essential to recognize and accommodate the differences between the organization, performance, and management control of work in the development and production phases.

However, the Titan IV CPRs¹⁰ were not structured to report these different types of effort. The Titan IV contract required the contractor to segregate its cost by type of appropriation, that is, by development, production, and support. Even though the Titan IV extended SAR report stated that the WBS should provide visibility into the types of appropriations, the contract performance measurement data, specifically the CPR, did not provide the Government with segregated information. As a result, the Government could not easily determine the status of

¹⁰ The CPR is a report that contractors are required to submit to the Government for those contracts that have C/SC system requirements. The report provides contract cost and schedule status information, early indicators of contract cost and schedule problems, including variance analysis, and the effects of management actions taken to resolve problems affecting cost and schedule performance.

individual types of contract effort. The Titan IV Program Office attempted to derive the status of nonrecurring and recurring effort on the Titan IV contract by extracting and extrapolating data from other contractor documentation. In the January 1991 Defense Acquisition Executive Summary report, the Program Office reported processing a contract change to obtain routinely a separation of recurring and nonrecurring efforts. In April 1991, the Program Office began reporting that it could not complete the Unit Cost Reporting requirements for the Defense Acquisition Executive Summary report because the CPR did not separate the development and production effort.

As a result, we believe that the Government and contractor program managers were restricted in efficiently and effectively managing the Titan IV Program because the contractor's performance reporting did not provide visibility into the status of the different types of effort. This lack of visibility also contributed to potential noncompliance with Public Laws, U.S.C., title 31, sec. 1301 and sec. 1341 concerning the proper use of appropriations when making progress payments, as reported in Inspector General, DoD, Audit Report No. 92-064, "Titan IV Program."

Unlike the Titan IV, the C-17 Program had separate reporting requirements for the development and the production efforts. Specifically, the C-17 contractor provided a CPR to report the status of the development of the C-17 program, as well as separate CPRs to report the status of two production lots. We believe that by establishing the separate reporting requirements, both Government and contractor managers had better visibility into program status and where problems were happening. However, as reported in Inspector General, DoD, Audit Report No. 92-046, "Audit of Contractor Accounting Practice Changes for the C-17 Engineering Costs," February 13, 1992, the contractor inappropriately redefined the transition from development engineering to sustaining (production) engineering. Improperly establishing the nature of the work resulted in the C-17 contractor receiving about \$148 million in financing through progress payments earlier than it otherwise would have.

Although we identified limited examples (Titan IV and C-17) of improperly recognizing and accounting for the nature of the work, the potential for future problems exists where development contracts are awarded with production options or in other situations where multiple appropriations fund a single contract. For example, development contracts for the SRAM II and the AAWS-M had production options that, at the time of our review, had not been exercised. Without adequate consideration and reporting of the different appropriations on contracts with significant amounts of different types of appropriations, potential violations of public laws concerning the proper use of appropriations could occur. Also, program management is better able to manage the program effectively by knowing the status of work for the different types of effort.

Work Breakdown Structures. Also, related to the nature of work is the WBS. Neither the AOE-6 nor the SSN-21 Programs used a WBS as a basis for their C/SC baselines and the accumulation and reporting of performance data. Rather, they used a functional breakout, that is, a breakout by type of labor and material. Also, within 1-1/2 years of contract award, problems with the contract WBS for the FAADS Program began and the program was subsequently restructured. Since the WBS should have defined the work to be done, we believe a significant restructure of the WBS indicated a lack of understanding of the work necessary to accomplish the contract. Without a WBS that reasonably and adequately defines the work to be done, we do not believe that an effective baseline can be established or realistic performance measurement made.

Conclusion

In our opinion, there are two primary drivers of unrealistic baselines: cost-based competition and budgetary constraints on the availability of program funding. Competitions that are perceived to be heavily weighted in favor of the lowest cost can provide motivation to understate costs to "win" the contract. Budgetary constraints can result in contracts being awarded for costs that match available levels of projected funding. Contract costs that are understated to "win" a competition or in order to stay within projected funding levels result in a distorted relationship between the contract price and the estimated cost of performance.

We believe that the performance measurement baseline should reflect a reasonable expectation of what is required to complete the work. To arbitrarily establish or keep a baseline on the contract target cost, even though that cost is unlikely, impairs use of the baseline for performance measurement and, more importantly, for early detection and correction of cost and schedule problems. We also believe that over-target baselines should be closely monitored and traceable to projected increases in contract costs, with approval granted only after thorough review.

Because of the different nature of development and production, performance baselines and performance reporting should be structured to provide visibility into the status of the major program efforts, such as development and production efforts. Such visibility into the status of different types of contract effort, especially as the effort relates to different appropriated funds, is critical for effective oversight and control of the contractors' performance and also provides program management with a way to ensure that the appropriated funds are properly controlled in accordance with public law. For example, the contract statement of work should require separate appropriation control and reporting of costs by contract line item or WBS.

Therefore, we believe that a review of the contractor's proposed preliminary baseline information should be part of the evaluation of the contractor's proposal. Additionally, the sufficiency of the performance measurement baseline implemented by the contractor should be an integral part of C/SC system reviews and oversight. Also, because of the potential consequences of baselines that significantly exceed contract costs, program management should ensure that such over-target baselines are fully funded to the level of potential overruns of contract prices.

RECOMMENDATIONS, MANAGEMENT COMMENT, AND AUDIT RESPONSE

We recommend that the Under Secretary of Defense for Acquisition revise DoD Instruction 5000.2 and 5000.2-M, as appropriate, to require that:

1. The sufficiency of the preliminary baseline information and the implemented performance measurement baseline; that is, allocated budgets and their distribution, be evaluated before contract award and as part of the subsequent application reviews and other cost and schedule control system reviews, respectively;
2. The program manager identify full funding for contract baseline restructures that result from significant cost, schedule, and technical problems;
3. Contracts funded with significant multiple appropriations must separately report the cost of work associated with the different appropriations; and
4. Work Breakdown Structures be developed to reflect the different nature of the work on multi-funded contracts where performance measurement by appropriation is essential to compliance with appropriation law.

Management comments. The Director, Acquisition Policy and Program Integration, Office of the USD(A) concurred with Recommendation B.1. and nonconcurred with Recommendation B.2., B.3., and B.4. The full text of management comments is at Part IV.

Recommendation B.1. The Director stated that he would issue draft policy guidance based on lessons learned from recent actions taken on a major program, which were consistent with the recommendation. The Director stated, however, that the same level of baseline review should not be expected before a contract is awarded.

Recommendation B.2. The Director stated that cost performance management was not funds management and that a requirement to identify full-funding requirements for baseline restructure could discourage program managers from acting on

problems in a timely manner. In addition, the Director stated that funding may not be available until after the restructure plan and funding may not be the only solution to problems that cause restructures.

Recommendation B.3. The Director stated that cost performance management is not accounting control. The appropriate report to track appropriations is the Contract Funds Status Report. The nature of the work should determine how the Cost Performance Report is structured.

Recommendation B.4. The Director stated that the work breakdown structure was not intended to be an accounting tool. Also, the Director was taking action to correct problems found with WBS implementation including revision of Military Standard 881B; transfer of WBS responsibility from the Office of the Assistant Secretary of Defense (Production and Logistics) to the Office of USD(A); and revision of Military Standard 499B, "Systems Engineering."

Audit response. The Director's comments did not fully address Recommendation B.1. We also believe that Recommendations B.2., B.3. and B.4. are still valid. USD(A) should reconsider and provide comments to the final report.

Recommendation B.1. We agree with the Director's proposed actions for postaward review of program baselines, but do not agree that a review of the preliminary baseline before contract award is unnecessary. We also agree with the comments that the same level of baseline preparations is not expected before contract award. However, a contractor should have a preliminary baseline as part of its proposal.

We did not intend that a fully developed baseline be developed before contract award. However, the review of the preliminary baseline could and should be part of the source selection evaluation process. Also, if such a review is part of the preaward process, emphasis is placed on the importance of C/SC system early in program development and a better framework for the development of reasonable baselines early in the contract is provided.

Recommendation B.2. We agree with the Director's comments that the exact amount of funding would be known after the restructure plan and that non-funding solutions may solve problems. However, we believe that when a program restructure is approved, it is necessary that the funding be available to accomplish the work. The amount of funding would, of course, be determined by the restructure plan and the non-funding solutions to identified problems.

Also, although we agree that cost and schedule management is not funds management, we do not agree with the Director's implication that the two are totally separate. We believe

it is self-defeating to replan a project and then not be able to accomplish it because of insufficient funds. The Director has stated that having an integrated cost, schedule, and technical performance system is the reason for program management interest in C/SC systems. However, to manage effectively, program management must be aware of the available funding. Therefore, we continue to believe that the approval of a restructure must be conditioned on the availability of funding to accomplish the work. In essence, the restructure is not exceptable if additional Government resources are required but not available.

Recommendations B.3. and B.4. We agree that cost performance management and the WBS are not accounting tools and that the Contract Funds Status Report is an appropriate reporting mechanism for appropriation and funding information. We also agree that the nature of the work should determine how the cost performance report is structured. However, we do not agree that the C/SC system information is or should be totally separated from such considerations.

The intent of Recommendation B.3. was not to require separate Cost Performance Reports for each appropriation or to duplicate the contract funds status report. The intent was to ensure that program managers are able to effectively manage their programs by being able to assess the cost, schedule, and technical performance of significant amounts of different effort. The performance status of significant efforts associated with major appropriations is necessary and should be reported to the program manager. It is reasonable to assume that the nature of development, production, or operation and maintenance is different and, therefore, is consistent with the Director's comment that the nature of the work should determine how the Cost Performance Report is structured. It is also evident that program management needs to know and assess cost, schedule, and technical status for significant amounts of different types of work, such as development and production.

This information is also useful in ensuring that appropriated funds are used only for the purposes intended. For example, the DoD accounting manual states that program information can be used to determine how payments should be made if multiple appropriations are involved. Without information provided through the C/SC system, it may not be possible to make this determination and Antideficiency Act violations could occur.

The JIG states that, in establishing a WBS, it is essential to recognize and accommodate the differences between development and production. Since these types of work (development and production) generally correspond to major

types of appropriations (RDT&E and Procurement), we do not see a conflict. The intent of Recommendation B.4. was to ensure that this same requirement is reflected in primary policy and procedure documents concerning WBS.

STATUS OF RECOMMENDATIONS

<u>Number</u>	<u>Addressee</u>	<u>Response should cover:</u>		
		<u>Concur/ Nonconcur</u>	<u>Proposed Action</u>	<u>Completion Date</u>
B.1., B.2., B.3., B.4.	Under Secretary of Defense for Acquisition	X	X	X

C. PROGRESS PAYMENTS

Available cost performance data were not consistently used in reviewing and approving progress payments. This condition occurred because adequate guidance was not provided to ACOs to ensure that cost and schedule control system data were consistently used as part of the review of progress payments. Also, ACOs were not routinely provided program manager estimates at completion to consider as part of their review and approval of progress payments. As a result, DoD management could not be assured that progress payments were made based on contract performance rather than costs incurred.

DISCUSSION OF DETAILS

Background

Progress payments are allowed by the FAR, chapter 32, to provide interim financing of contractors' costs to perform their contracts. The DCMC's "Contract Administrative Manual" (DLAM 8105.1) provides guidance to the ACOs for reviewing and approving progress payments. In reviewing and approving a progress payment request, the ACO should assess the contractor's performance relative to the total contract estimated cost. Of the nine programs we included in this audit, six had fixed-price type contracts and the contractors received progress payments on the contracts (AOE-6, MK-50, SSN-21, C-17, SRAM II, and Titan IV).

Significant problems had been identified in reviewing and approving progress payments. For example, the DCAA identified about \$227 million in overpayments to the A-12 contractors through progress payments. Inspector General, DoD, Audit Report No. 92-030, "Acquisition of the AOE-6 Fast Combat Support Ship," reported that as of January 1991, the Navy had paid \$24.8 million too much in progress payments. The AOE-6 report and the "A-12 Administrative Inquiry" reported that the EACs developed by the contractors were not reasonable and that the DCAA and program office oversight was not adequate. The "A-12 Administrative Inquiry" concluded that the failure to use cost and performance data was one cause of excessive progress payments.

The GAO issued Report NSIAD-92-01, "Key Data Not Routinely Used in Progress Payment Reviews," January 1992. The GAO stated in its report that ACOs were not routinely using available cost and performance data, such as EACs independently developed by the DPRO and production status reports, in their monthly reviews of contractors' progress payment requests. As a result, GAO recommended that the Secretary of Defense require that DCMC establish procedures to use C/SC system-generated reports, EACs independently developed by the DPROs, and production and delivery data in its review of progress payments.

Initiatives to Improve Progress Payment Reviews

The issues identified in the "A-12 Administrative Inquiry" resulted in significant attention to the review and approval of progress payments.

The DCAA revised its progress payment audit plans to include specific steps that use the data from contractors' validated C/SC system. The DCAA's revised guidance had not been fully implemented at the time of our review.

The DCMC was instituting a standardized automated system for reviewing progress payment submissions that would be used by all DPROs. In addition, DCMC issued revised guidance requiring surveillance information from all contractor management control systems, including C/SC system, be used to review progress payments as recommended by the General Accounting Office.

In August 1991, the Assistant Secretary of the Navy (Research, Development and Acquisition) directed that Navy program managers calculate EACs, including an EAC based on the cumulative cost-performance index. The EACs would be provided to the administrative and procuring contracting officers when the EAC would exceed the firm contract price or ceiling price. The Assistant Secretary also directed that training be provided that emphasized EACs, loss ratio calculations, and CPR analysis. In addition, for those programs where earned value performance measurement data was not available, the Assistant Secretary requested that Defense Logistics Agency direct the ACOs to provide the procuring contracting officer or the program manager the contractor's EAC from the progress payment request periodically for review and comment.

Additional Improvements Needed

A specific comparison should be made between the EAC on the progress payment requests and the EAC calculated using the cumulative cost-performance index. For the six programs with progress payments, the EAC on the progress payment request was less than the EAC calculated using the cumulative cost-performance index. Although these differences can be explained, they could indicate overpayments. Progress payments on two of the six programs (SRAM II and C-17) had been adjusted because of changes to the contractors' EAC. At the time of our site visits, we found no indication that the other program estimates would be more than the contract ceiling prices.

As an example of using the cumulative cost-performance index for progress payments purposes, in March 1991 we calculated an EAC of \$7.4 billion for the C-17 Full-Scale Engineering Development and Lot I and Lot II production single ceiling contract. Lower EACs of \$7.1 billion and \$7.3 billion continued to be used until November 1991, when an EAC of \$7.45 billion was applied to the progress payments. Therefore, between March 1991 and

November 1991, the contractor was overpaid progress payments. Although the DPRO had done extensive analysis to support its EACs, the EACs did not prove to be as accurate as the EAC based on the cumulative cost-performance index.

We found instances where the reasonableness of the EACs was questioned and where the reviews of the EACs were not adequate or did not consider other known information. For example, DCAA had neither reviewed the contractor's methodology for computing EACs for progress payments nor requested a technical evaluation of the EACs for the Titan IV Program. On its review of the September 30, 1990, progress payment, the auditor reconciled the EAC from the progress payment with the EAC on the CPR. However, the audit report stated that the contractor's cost-to-complete¹¹ was reasonable even though the auditor was aware that the CAO had a higher EAC. For the first MK-50 low-rate initial production contract at Alliant Techsystems, Incorporated, the DCAA did not review the EAC until progress payment number 25, which was about two years into the contract.

In August 1990, DCAA reported that the C-17 EACs were not adequately supported. However, the ACO did not implement a loss ratio; and a loss ratio was not implemented until November 1990. In June 1991, DCAA was unable to express an opinion of the SRAM II EAC because of the program disruptions that resulted from the September 1990 "cure notice."¹² For two years, the DCAA had reported to the CAO that the EAC used for progress payments by Westinghouse Electric Corporation, Defense and Electronics Center, a MK-50 contractor, was not accurate. The DPRO continued to make progress payments while working with DCAA and the contractor to correct the problems.

If fully implemented, the revised DoD guidance for progress payment reviews will correct the deficiencies identified with the progress payment reviews and ensure that reasonable EACs are used in evaluating progress payments. However, the examples of poor reviews and inadequate EACs emphasize the need for a standard method to assess the progress payment EAC to ensure that an in-depth analysis of the EAC is made when warranted.

¹¹ The estimated cost-to-complete plus the incurred cost-to-date is equal to the EAC. The progress payment request form includes the incurred cost-to-date and the estimated cost-to-complete.

¹² FAR 49.4, "Termination for Default," requires that in situations where the contractor is not making progress on the contract so that completion of the contract requirements is questionable, the contracting officer should give the contractor a written notice describing the failure and providing a period in which to cure the failure.

Conclusion

Justifying an EAC used for progress payments that was less than an EAC based on the cumulative cost-performance index would be consistent with the DoD Manual 5000.2-M. This should not be considered a substitute for the contractors to provide reasonable EACs or for the Government to assess the reasonableness of the EACs. It is also not intended to restrict the ACO's responsibility for reviewing and approving progress payments. However, it does provide a consistent, standard methodology for assessing the reasonableness of EACs during the progress payment review. Additionally, the ACO should be provided the Defense Acquisition Executive Summary as additional input to the progress payment administration process since it contains both the program manager's EAC and pertinent program assessments from acquisition officials. We also believe that the Assistant Secretary of the Navy's recommendation to his program managers and suggestion to DLA (Defense Contract Management Command) concerning progress payments should be implemented within DoD. Such recommendations would ensure that program offices, ACOs, and DCAA auditors are aware of the EAC that each may be using and provide updated information or comment as warranted.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend that the Under Secretary of Defense for Acquisition direct distribution of Defense Acquisition Executive Summary Reports on major Defense acquisition programs to cognizant contract administration offices and administrative contracting officers.

Management comments. The Director, Acquisition Policy and Program Integration, Office of the USD(A) nonconcurred with Recommendation C.1. because the DAES report is an oversight tool. The Director stated that a more appropriate means of getting the EAC to the ACO was through the surveillance agreements between the contract administration office and the program management office. The Director stated that DAES information would again be sent to DCMC for appropriate use. The full text of the comments is in Part IV.

Audit Response. We believe that action proposed by the Director to send the DAES report to DCMC, in conjunction with the actions proposed by DCMC in response to Recommendation C.2.b., meets the intent of our recommendation.

2. We recommend that the Commander, Defense Contract Management Command, revise the Contract Administration Manual (DLAM 8105.1), part 32.594, "Periodic Reviews of Progress Payments, to require:

a. Justification for using an estimate-at-completion for progress payments that is less than an estimate-at-completion calculated using the cumulative cost performance index, and

b. Administrative contracting officers to provide periodically estimates-at-completion used for approving progress payment to the program offices and to Defense Contract Audit Agency for review and comment.

Management comments. DLA nonconcurred with Recommendation C.2.a. and concurred with C.2.b. Although not required to comment, the Director of Defense Procurement also nonconcurred with Recommendation C.2.a. The complete text of management comments is at Part IV.

Recommendation C.2.a. DLA and the Director, Defense Procurement, did not concur with the need to justify an EAC for progress payments that was less than an EAC calculated using the cumulative cost performance index. The comments noted that legitimate differences in EACs exist. DLA stated it had taken action to incorporate C/SC system data into its progress payment review process, including ACO action when surveillance indicates negative performance trends which may affect the EAC.

Recommendation C.2.b. DLA proposed to clarify existing guidance to ensure that program offices and DCAA auditors are aware of and provided with the opportunity to comment on EACs used for progress payment purposes. DLA stated that existing guidance already requires DCMC field activities to routinely provide EAC and progress payment information to program management offices.

Audit Response. We believe that actions proposed by DLA can meet the intent of our recommendations.

Recommendation C.2.a. We agree that the ACO should use contractor management control systems to assess the reasonableness of contractor progress payment EACs and take appropriate action when negative trends exist. We also agree that legitimate differences can exist between EACs. We had never intended for the cumulative cost performance index EAC to be the only EAC considered. However, it is prudent to include in the review of progress payments a comparison with the EAC based on the cumulative cost-performance index. This EAC has historically been an accurate estimate of the lower end of range of potential EACs. The cumulative cost performance index EAC would serve as a useful guidepost for assessing the contractor's EAC and the EAC being considered for progress payments, if different.

The actions taken and proposed by DLA can meet the intent of Recommendation C.2.a. as long as the trend data presented to the ACO includes the EAC based on the cumulative cost-performance index and the ACO documents that the trend data were considered in reviewing the progress payment.

Recommendation C.2.b. Also, we agree that DCMC provides EAC data to the program office but we are not aware of existing guidance that requires ACOs to provide the progress payment EAC to the program office and DCAA. However, we believe that the emphasis put on using C/SC data in the review of progress payments and the guidance proposed by DCMC can meet the intent of our recommendation. We request that DCMC provide us a copy of the guidance.

STATUS OF RECOMMENDATIONS

<u>Number</u>	<u>Addressee</u>	<u>Response should cover:</u>		
		<u>Concur/ Nonconcur</u>	<u>Proposed Action</u>	<u>Completion Date</u>
C.2.	Commander, Defense Contract Management Command		(copy of guidance)	

D. SURVEILLANCE OF CONTRACTOR MANAGEMENT SYSTEMS

The surveillance of the contractor's C/SC system and other management systems, such as billing systems and purchasing systems, was inadequately coordinated by cognizant DCAA and DCMC activities. This condition occurred because guidance was not adequate to ensure that the relationship between contractor management systems was adequately considered in planning and coordinating audits and reviews. As a result, surveillance performed by the DPRO and DCAA was incomplete and did not make efficient use of limited review resources.

DISCUSSION OF DETAILS

The CAOs and the DCAA perform various reviews of the contractor management systems. In six of the programs we reviewed (FAADS, AOE-6, MK-50 Westinghouse, SSN-21 Newport News, C-17, and SRAM II), deficiencies were found in the management systems that could have impacted the reliability of the C/SC system. However, at only one location (Newport News) was the impact on the C/SC system reported.

In addition, at Westinghouse, five management systems had been disapproved and a sixth system had significant deficiencies. For example:

- o The estimating system review identified deficiencies in estimated labor and material costs.

- o The material management and accounting system review identified inaccurate bills of material and improper time-phasing of material purchases.

- o The budgeting system review identified inadequate variance and cost analysis for rates and factors and an inadequately implemented budgeting process.

We found no indication that the impact of these deficiencies on the validity and accuracy of C/SC system data was determined and reported in these reviews. Also, we found no indications that the combined effect on C/SC systems was reported as part of the surveillance function.

For at least three locations (FAADS, AOE-6, and SSN-21 Newport News), DCAA identified deficiencies in the labor accounting system. The report on the 1987 FAADS SAR failed to consider the labor accounting system deficiencies. The reports on the SARs for the AOE-6 and SSN-21 contractors described the timekeeping deficiencies. However, the problems at the AOE-6 contractor still existed 26 months later. The C/SC system at the SSN-21 contractor was approved by the Navy despite the timekeeping deficiencies. However, the deficiencies were being addressed at the time of the tri-Service validation in December 1991. Although the C/SC system criteria do not include specific

evaluation elements for direct labor, as with material and indirect cost, the criteria does require that direct labor costs be adequately recorded on an acceptable basis, as determined by the cognizant DCAA representative. Inadequate timekeeping policies and procedures cause the accuracy of the labor charges to be questionable. Questionable labor charges directly impact the accuracy of the C/SC system data and, therefore, must be considered when approving the C/SC system.

At four locations (MK-50 Westinghouse, SSN-21 Newport News, C-17, and SRAM II), deficiencies were identified with the contractor's calculation of the EACs. However, three of the locations (MK-50 Westinghouse, C-17, and SRAM II) did not report the impact of the EAC deficiencies on the C/SC system. The DCAA at Newport News Shipbuilding reported the deficiencies in its SAR report. Also, DCAA reported that Newport News was using EACs for financial reporting that were not reconcilable with the EACs reported for contract performance measurement. While the EACs may differ for many reasons, they should at least be reconcilable. A similar situation was identified at the SRAM II contractor, Boeing Aerospace and Electronics. However, the impact on the C/SC system was not identified.

The C/SC system Joint Surveillance Guide recognizes the importance of the interrelationship by assigning responsibilities to both the CAO and the DCAA. For example, the CAO production and manufacturing operations organization is responsible for reviewing and evaluating the contractor's material control system. Likewise, DCAA is tasked to include C/SC surveillance requirements in routine audit programs and procedures. The DCAA is also to advise the CAO surveillance monitor of contractor system reviews on other audits that relate to C/SC acceptability or surveillance. These DCAA responsibilities are in the Defense Contract Audit Manual, chapter 11-204, "Audit Objectives and Procedures for Surveillance Reviews." However, neither the DPROs nor DCAA adequately considered the interrelationship with other contractor systems.

One cornerstone of DoD contractor performance measurement is to use the existing contractor management control systems. The C/SC system criteria, which the existing contractor systems must meet, ensure DoD managers of reliable, accurate, and timely data. The surveillance function ensures that a validated system remains implemented on the contract and that the data is accurate. To perform this function properly, CAOs and DCAA must recognize the interrelationships between the contractor management systems. The DCAA, in providing audit conclusions and advice on the contractor's systems, should report the consequences of deficiencies on the C/SC system and the validity of C/SC data. Similarly, the CAO, when providing conclusions and recommendations to contractors on system reviews, should assess the impact on the validity of the C/SC system and accuracy of the C/SC system data. To help ensure effective consolidation of the information, DCAA field offices should have C/SC focal points as

described in Finding A. We also believe that recognizing and identifying the impact on the C/SC system of deficiencies identified in other system reviews would more efficiently use limited resources and avoid potentially duplicative or redundant system surveillance review work.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend that the Director, Defense Contract Audit Agency, issue guidance and revise all standard audit programs, as appropriate, to include assessment and reporting of contractor cost and schedule control system implications.

2. We recommend that the Commander, Defense Contract Management Command, issue guidance requiring assessment of the impact of deficiencies identified in contractor management system reviews on the cost and schedule control system and on the accuracy and reliability of the data from the cost and schedule control system as part of the system review performed. In addition to cost and schedule control systems, other contractor management systems include billing, purchasing, and estimating systems.

Management comments. DCAA and DLA concurred with Recommendations D.1. and D.2., respectively. DCAA stated that it had and would incorporate C/SC system requirements and impact in nine standard audit programs. DLA stated it would revise the Joint Surveillance Guide accordingly. The complete text of management comments is at Part IV.

Audit Response. The DCAA and DLA proposed actions meet the intent of our recommendations.

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E. INCENTIVES FOR CONTRACTOR IMPLEMENTATION AND MAINTENANCE OF COST AND SCHEDULE CONTROL SYSTEMS

Contractors lacked incentive to implement and maintain a validated cost and schedule control system. This condition occurred because of insufficient guidance or criteria for providing incentives for a contractor to implement and maintain a validated system and for withdrawing a contractor's validation. As a result, contractors did not implement the cost and schedule control systems in a timely manner and DoD management was receiving data from potentially deficient cost and schedule control systems.

DISCUSSION OF DETAILS

Background

The JIG states that when a contractor fails to maintain a previously accepted system and will not take timely actions to restore it to compliance with the criteria, a DoD Service may consider withdrawing or suspending acceptance of the contractor's management system. When warranted, the Service would advise the CAO that the validation was in jeopardy and request the contractor to "show cause," within a reasonable time, why the acceptance should not be withdrawn. At the same time, the Service focal point would advise the other Service focal points of its action. If the contractor disagreed, the contractor could appeal to the PMJEG.

We found nothing in the FAR, Defense FAR Supplement, DCAA Contract Audit Manual, or DCMC Contract Administrative Manual that outlined actions to be taken if the contractor failed to implement and maintain a C/SC system meeting the C/SC system criteria. Also, the JIG does not define or explain when the deficiencies have become sufficiently extreme to warrant recommending withdrawal of the validation and issuing a cure notice. For example, criteria were not specified for withdrawal of validation where deficiencies materially impacted contract performance measurement by either the contractor or the Government.

Incentives and Withdrawal Criteria

Only one contract that we reviewed (Titan IV) had an incentive that included the effectiveness of the contractor's C/SC system. The others had no specific incentives to encourage the contractor to implement its C/SC system in a timely manner or to maintain its C/SC system.

As noted in Finding A, the SARs were not completed in a timely manner, indicating problems with getting deficiencies corrected. For example, an extended SAR was conducted in June 1989 at Newport News Shipbuilding that identified 30 deficiencies. A

corrective action plan was requested in November 1989. In February 1991, the Navy conducted a follow-up extended SAR, but the report was not issued until June 1991.

The DCAA twice recommended to the Navy that the Newport News Shipbuilding C/SC system validation be withdrawn. However, the Navy determined that the deficiencies and concerns cited by DCAA were "DCAA concerns" and not significant enough to invalidate the C/SC system. Such a decision highlights the inherent conflict of program management and contract administration oversight.

One reason that DCAA had recommended withdrawal of the Newport News Shipbuilding validation was because the EACs reported in the CPRs could not be reconciled with EACs used for financial or tax purposes. Although differences can be expected between the EACs used for different purposes, they should be reconcilable. This is consistent not only with the requirements in the JIG but also with the intent of the C/SC system criteria. The DoD intent is for the contractor to use its own management systems, making sure that the systems meet the C/SC system criteria. The EACs that are not reconcilable indicate that contractor management is not reaching consistent conclusions from its management control system and may not be relying on the system. The potential for duplicate systems also exists.

On the other hand, DCAA did not recommend that the C-17 contractor validation be withdrawn even though significant problems existed with the billing system. The billing system review found that the contractor did not have auditable support for its EACs and the contractor did not have indirect budget forecasts. Even though for similar findings for the T-45 program DCAA had recommended withholding funds, DCAA did not recommend a withhold for the C-17 program. In addition, DCAA never explained the effect the billing system deficiencies had on the C/SC system and the validity of the C/SC system data. Similarly no recommendation was made to withdraw the C/SC system validation at Westinghouse (MK-50) despite the disapproved systems discussed in Finding D.

In August 1988, the SUPSHIP at San Diego, California, recommended the withdrawal of the AOE-6 contractor's C/SC system validation because the contractor was not correcting C/SC system deficiencies that were agreed to in May 1988. However, the Naval Sea System Command's C/SC system focal point decided that withdrawal at that time was counter-productive and the contractor should be persuaded to correct the deficiencies. The AOE-6 contractor submitted its revised C/SC system description in October 1991. A review of the C/SC system was not planned until after the contractor completed a rebaselining effort in September 1992.

We believe that 3 years (1988 to 1991) of attempted persuasion is more than sufficient to correct the deficiencies. This indicates the lack of criteria for withdrawal of a C/SC system and the potential conflict of interest that exists when the decision to withdraw a system validation is made by the acquiring command. While the delay in corrective action with the AOE-6 Program was particularly lengthy, similar situations occurred on other programs. For example, in early 1989, the CAO for the FAADS contractor (which was an Air Force organization then) had identified deficiencies that it considered substantive and potentially harmful to the overall integrity of the C/SC system data. The deficiencies were not isolated to a single program or contract. Based on its assessment, the CAO office felt that an in-depth, system-wide review was warranted. The Air Force Contract Management Command (merged with DCMC in July 1990) personnel believed that the deficiencies were not systemic and a revalidation of the contractor's C/SC system was not necessary.

Conclusion

Incentives should be included in the contract to encourage the contractors to correct C/SC system deficiencies promptly. Also, guidance should be developed for when and how action will be taken to withdraw the C/SC system validation. When significant deficiencies have been identified, either as part of a SAR or through surveillance activities of other contractor management systems, and the contractor does not identify and implement timely corrective actions, action should be taken to provide an incentive for the contractor to make the corrections, up to and including withdrawing the system validation. Not to exceed 10 percent¹³ of the contractors' requests for payment should be withheld when a contractor has significant deficiencies that are not corrected in a timely manner or if the same deficiencies tend to recur. Recurring deficiencies could indicate that a true "fix" has not been implemented.

If the contractor continues to have significant deficiencies, the contractor should then be notified of the intent to withdraw the validation. The JIG states that if the validation is withdrawn, the contractor cannot claim a previously validated system. An evaluation review must be performed as part of the source selection process for future contracts that contain the requirement for a C/SC system.

We believe that if problems existed that warrant the withdrawal of a validation, the contractor must demonstrate that its C/SC system complies with the required criteria before another

¹³ Ten percent is consistent with withholding of costs for noncompliance with cost accounting standards, as stated in FAR 30-602-2(d)(2).

contract that requires a C/SC system can be awarded. Because validation reviews are considered time-consuming and costly, such action would provide the contractor an incentive to take timely action to correct its existing C/SC system.

Withdrawal of a validation and withholding future contract awards would rarely, if ever, be considered as an option by the Military Service because of programmatic concern, thereby weakening cost and schedule management of DoD contracts. Therefore, consolidating the review and validation functions within DCMC, as recommended in Finding A, would facilitate the withdrawal process when a withdrawal is necessary. The Services can be heavily influenced in a decision to withdraw because of programmatic implications of such an action, rather than contract management considerations. We consider this to be a conflict of interest and an inadequate separation of duties from an internal control perspective.

The CAO is responsible for notifying the contractor that the validation is in jeopardy. The CAO is also responsible for monitoring the contractor's implementation of the C/SC systems on all contracts. Except for shipbuilding contractors, contract administration offices are part of the DCMC organization. Because these offices administer all contracts at the contractor's facility, they would have a broader perspective of a contractor's implementation of C/SC and would be better able to determine the need for a withdrawal.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

We recommend the Under Secretary of Defense for Acquisition establish:

1. Criteria and process for withdrawal of a contractor's validated cost and schedule control system, including identification of specific system deficiencies in the notification of intent to withdraw system validation and
2. A contract clause, by amending the DoD Federal Acquisition Regulation Supplement, stating that not to exceed 10 percent of billings and payment requests can be withheld upon issuance of a proper notification if corrective actions are not timely for identified significant and recurring deficiencies in the contractor's cost and schedule control system and other systems affecting the reliability of the performance measurement data.

Management comments. The Director, Acquisition Policy and Program Integration, and the Director, Defense Procurement, nonconcur with Recommendations E.1. and E.2, respectively. The complete text of management comments is at Part IV.

Recommendation E.1. The Director, Acquisition Policy and Program Integration, Office of USD(A) stated that the process was adequately described in the JIG and believed that the PMJEG

changes discussed in the comments on Recommendation A.1.c. would address the inconsistencies noted in C/SC system implementation and system maintenance.

Recommendation E.2. The Director, Defense Procurement stated that the recommended clause was not necessary because it restated authority already residing with the contracting officer to reduce progress payments if the contractor has not met a material requirement of the contract.

Audit response. We still believe that Recommendations E.1. and E.2. are necessary to provide incentives to the contractors to implement and maintain viable C/SC systems. Therefore, USD(A) should reassess its position and provide comments to the final report.

Recommendation E.1. We do not understand how the designation of DCMC as the permanent chairman of the PMJEG would solve the problems identified in the finding. According to the JIG, the PMJEG is not involved in the withdrawal process except as a mediator when issues cannot be resolved by Service focal points. The intent of Recommendations E.1 and E.2. is to ensure that the program management and contract administration offices take action, when warranted, when C/SC is not implemented and maintained as required. We showed examples of long-time inability to implement and failure to withdraw validations based on contract administration office recommendations. Contractors continued to receive contracts despite significant deficiencies that raised serious questions concerning the reliability of virtually all contractor cost data. Although we certainly do not recommend withdrawal for all deficiencies, it is reasonable to expect action to be taken when the contractor does not take timely action to implement and maintain properly a viable C/SC system. While we agree that a "checklist" approach is not appropriate and that the range of possible deficiencies is too broad to list as withdrawal criteria, we still believe that additional guidance or guidelines should be provided.

Recommendation E.2. The intent of our recommendation is to provide a standard payment reduction that would be consistently used by ACOs to reduce payments when timely action to correct significant and recurring C/SC system deficiencies is not made but withdrawal of the system validation is not warranted. Although the FAR 32.503.6 states that progress payments may be suspended or reduced when the contractor does not comply with material requirements of the contract, the FAR does not specify how much payments may be reduced. However, we do not believe that suspension of all the progress payments is necessarily desirable if the contractor did not timely correct significant and recurring deficiencies in the contractor's C/SC system.

We were unable to identify the cost to implement a C/SC system on a contract. Therefore, it is unlikely that the ACO would be able to identify that portion of the progress payment associated with the C/SC system. Additionally, the cost impact to the Government may be in future contract prices not directly associated with the costs of the C/SC system. Without clear guidelines on what is prescribed, the ACO must apply individual judgment. Inequities may result when different contractors are being subject to different restrictions because some ACOs may be inclined to be more lenient than others. Since having an adequate C/SC system is a material contract requirement and withholding progress payments is warranted when significant and recurring problems exist, we believe that addition guidance is necessary.

STATUS OF RECOMMENDATIONS

<u>Response should cover:</u>				
<u>Number</u>	<u>Addressee</u>	<u>Concur/ Nonconcur</u>	<u>Proposed Action</u>	<u>Completion Date</u>
E.1., E.2.	Under Secretary of Defense for Acquisition	X	X	X

F. PREAWARD ASSESSMENT OF COST AND SCHEDULE CONTROL SYSTEMS

Preaward consideration of the contractor's implementation of C/SC systems was not adequate. This condition was caused by insufficient guidance to include the C/SC system considerations during the preaward process. As a result, contracts were awarded to contractors who did not have effective C/SC systems, causing untimely implementation of validated systems on the contracts.

DISCUSSION OF DETAILS

The JIG requires the cognizant CAO and resident auditor to furnish a report stating if the contractor's system continues to meet the C/SC system criteria. DoD Instruction 5000.2 states that when a requirement for a validated C/SC system is included in a request for proposal, a contractor's system will be reviewed to determine compliance with the C/SC system criteria during the source selection process. However, if the contractor has a C/SC system that was previously validated by the Government, it need not be reviewed again. The Instruction also states that reference to an advance agreement satisfies the C/SC system criteria requirement in requests for proposals. All contractors included in our audit had previously validated C/SC systems from prior Government contracts, except the AAWS-M contractor (TI/Martin AAWS-M Joint Venture¹⁴), which had major subcontractors with validated C/SC systems.

We found little indication that during the source selection or negotiation process the Government assessed how well the contractor maintained or applied his validated system on other contracts. We also found little evidence that the contract administration office or resident auditor furnished assessments of the C/SC system to the procuring activity for negotiation and source selection process. For example, the AOE-6 contractor filed a claim for equitable adjustment because of alleged Government actions requiring the contractor to expend significant unplanned and unbudgeted resources on its C/SC system. Part of the contractor's support was that the contract was awarded without discussion or negotiations regarding the C/SC system.

The DCAA had no published guidance for assessing the contractor's C/SC system as part of the proposal review or commenting on the C/SC system in its proposal audit reports. The Defense Contract Audit Manual, chapter 9-900, "Profit in Price Proposals," states that the auditor may include comments on such areas as "reliability of management and internal control systems, reliability of cost estimates and the contractor's cost estimating system, and cost reduction initiatives and cost

¹⁴ The TI/Martin AAWS-M Joint Venture was formed by Texas Instruments, Incorporated (TI), and Martin Marietta Corporation (Martin) specifically to develop the AAWS-M missile system.

control." However, the Contract Audit Manual or the standard audit program for price proposals has no guidance that tells the auditor to assess or provide comments on the C/SC system during the proposal review.

We also found no guidance in the Defense FAR Supplement or the DCMC "Contract Administration Manual" that preaward evaluations should consider how well the contractor has implemented its C/SC system on other applicable contracts.

An assessment of how well the contractor is maintaining its C/SC system should be made and should include an analysis of deficiencies identified by the cognizant CAO for the contractor's other contracts. The assessment should also include the impact of other contractor management deficiencies on the C/SC system (Also, see Finding D). This assessment can be provided by the DCAA as part of its proposal reviews and by the DPRO as part of its technical evaluation or preaward survey.

The DCAA needs to include steps in its price proposal standard audit programs to ensure that C/SC system deficiencies are reported. In addition, the DCAA should consider including a separate appendix to its price proposal audit report that addresses C/SC system deficiencies. Currently, the DCAA may include appendixes, such as "Contractor's Accounting System," "Outstanding Estimating Deficiencies," and "Comments on Profit."

In addition, the DCMC should revise its guidance on preaward surveys to specifically include information on the contractor's C/SC system.

A data base (as recommended in Finding A) could provide useful information to the source selection officials in assessing contractors' C/SC systems. Because DCMC, through the DPROs, maintains surveillance of the contractor's systems, DCMC would be the organization to develop and maintain such a data base.

Consolidating the review and approval of contractor's C/SC systems within the DCMC (as recommended in Finding A) would strengthen the use of C/SC system information in the preaward process by providing a more consistent input into the source selection decisions and establishing mechanisms to correct C/SC deficiencies as part of the contract award process.

RECOMMENDATIONS, MANAGEMENT COMMENTS, AND AUDIT RESPONSE

1. We recommend that the Director, Defense Contract Audit Agency, revise guidance, standard audit program, and reporting requirements for proposal audits to include an assessment of contractor system deficiencies affecting cost and schedule control system and data from the system, when appropriate.

2. We recommend that the Commander, Defense Contract Management Command, revise the Contract Administration Manual to specifically include an assessment of the contractor's past performance in implementing and maintaining an effective cost and schedule control system as part of its technical reviews and preaward surveys.

Management Comment. The Director, Defense Procurement and the Director, Acquisition Policy and Program Integration nonconcurred with draft report Recommendation F.1. stating that implementation of Recommendations F.2. and F.3. made the need to revise the FAR Supplement unnecessary. The Directors, DCAA, and Commander, DCMC, concurred with Recommendations F.2. and F.3. and agreed to provide clarifying guidance.

Audit Response. We concur that the actions proposed by DCAA and DCMC will meet the intent of our draft report Recommendation F.1. Also, the actions proposed by DCAA and DCMC meet the intent of Recommendations F.2. and F.3. Therefore, we deleted draft report Recommendation F.1. and renumbered draft report Recommendations F.2 and F.3. to F.1 and F.2, respectively.

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PART III - ADDITIONAL INFORMATION

- Appendix A - Description of Defense Acquisition Programs Reviewed
- Appendix B - Other Inspector General, DoD, Reports Issued as a Result of This Audit
- Appendix C - Definition of Terms Used in This Report
- Appendix D - Summary of Potential Benefits Resulting from Audit
- Appendix E - Activities Visited or Contacted
- Appendix F - Report Distribution

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APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED

Program Name: Advanced Antitank Weapon System-Medium
(AAWS-M)

Acquisition Command: Army Missile Command, Army Materiel
Command

Contractor: TI/Martin AAWS-M Joint Venture (the Joint
Venture)

Program Description: The AAWS-M is a portable Army and Marine Corps system to replace the Dragon Antitank Weapon System. The Army planned to procure 5,000 AAWS-M missile launchers and 58,000 AAWS-M missiles. The acquisition strategy called for joint development by two contractors. The two contractors would compete for production contracts after the low-rate initial production.

In June 1989, the Army awarded a cost-plus-incentive-fee contract to the TI/Martin AAWS-M Joint Venture. The Joint Venture was formed by Texas Instruments, Incorporated, and Martin Marietta Corporation. The contract was for a 36-month, full-scale development program costing \$169.7 million. In July 1990, the contract was rebaselined to \$236 million for the 36-month effort. In September 1991, after an Army proposed program restructure and subsequent Defense Acquisition Board review, the Under Secretary of Defense for Acquisition directed a 54-month program. In November 1991, the estimated price of the 54-month program was \$443.0 million. As of February 1992, the EAC was \$441.9 million.

Texas Instruments received its tri-Service validation for a research and development C/SC system in May 1975. A SAR for the AAWS-M development effort at Texas Instrument was done in November 1989 with a follow-up review in March 1990 to ensure that corrective actions were completed. Martin Marietta also had a validated C/SC system. However, the Joint Venture did not have a validated system. A validation review was not done for the Joint Venture because the work by the Joint Venture was level of effort and the Army did not believe that the cost to conduct a validation review was warranted. Level of effort is an activity which cannot be effectively associated with a definable end product or process result. It is measured only in terms of resources actually consumed within a given time.

Audit information for this program was obtained from Inspector General, DoD, Audit Report No. 92-023, "Acquisition of the Advanced Antitank Weapon System-Medium," December 17, 1991.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: Forward Area Air Defense System-Command,
Control, and Intelligence (FAADS)

Acquisition Command: Army Missile Command, Army Materiel
Command

Contractor: TRW Defense Systems Group, Systems Engineering
and Development Division

Program Description: The FAADS system was designed to provide target information to weapons while protecting friendly forces. The system consists of:

- o a computer to process and disseminate tracking and targeting data,

- o a ground-based radar to detect and track aircraft, an aerial sensor to detect helicopters and other aircraft, and

- o aircraft identification equipment to distinguish between friendly and threat aircraft.

On September 29, 1986, the Army awarded a cost-plus-incentive-fee contract to TRW with a target price of \$58.1 million. The contract provided for software development and the design, integration, assembly, test, and support of test of the FAADS. As of February 1992, the contract had increased to a target price of \$177.7 million, including at least \$50.5 million for cost overrun. The EACs by the contractor and program manager were \$172.2 million and \$172.3 million, respectively.

The contractor's C/SC system was revalidated in 1984. The SAR for the September 1986 FAADS contract was done in March 1987. Following a major reprogramming effort caused by cost overruns and schedule delays, a baseline review was conducted in June 1988. Because of continued cost overruns, another SAR was done in January 1990, with a follow-up review in March 1990.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: M1A2 Tank

Acquisition Command: Army Tank-Automotive Command, Army
Materiel Command

Contractor: General Dynamics, Land Systems Division

Program Description: The M1A2 is an upgrade to the M1 Abrams tank to improve survivability, reliability, target acquisition equipment, and fire control equipment. The Army originally planned to procure 2,926 tanks. However, the President's FY 1991 budget included funds for only 62 M1A2 tanks. The program was to be terminated after procuring the 62 tanks.

In December 1988, the Army awarded a cost-plus-incentive-fee contract to General Dynamics for development of the M1A2, including 10 prototypes. In July 1989, the contract was definitized for a target price of \$187 million for the development effort. In January 1992, the contractor's and program manager's EAC was \$319 million. As of April 1992, the contract amount for development had increased to \$332 million. The \$145 million increase (\$332 minus \$187) included \$141 million for cost overruns.

General Dynamics' (which was Chrysler at the time) C/SC system was validated in May 1974. A SAR for the 1989 M1A2 contract was conducted in July 1989, about 2 weeks before the contract was definitized on July 31, 1989. Because the contract had not yet been definitized, the SAR team recommended that a follow-up baseline review be performed within 90 days of definitizing the contract. However, a baseline review was not done until August 1990 because significant rebaselines occurred when the contract was definitized in July 1989 and later.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: AOE-6 Class Fast Combat Support Ship

Acquisition Command: Naval Sea Systems Command

Contractor: National Steel and Shipbuilding Company

Program Description: The AOE-6 Class Fast Combat Support Ship transports petroleum, ammunition, and provisions to ships operating in hostile environments. The AOE-6 class ship follows the acquisition of four AOE-1 class ships. A major difference between the two classes of ships is that the AOE-6 class has a gas-turbine propulsion system, while the AOE-1 class has a steam propulsion system. In December 1990, OSD reduced the procurement of AOE-6 ships from the original seven to four ships.

In January 1987, the Navy awarded a \$290.1 million competitive, fixed-price-incentive contract for the design and construction of the first AOE-6 class ship. The contract included options for three additional ships. Options for the first two follow-on ships were exercised in November 1988 and December 1989. As of March 1992, the target and ceiling prices for the three ships on contract were \$959 million and \$1,078 million, respectively. The contractor's and program manager's EACs were \$1,024 million and \$1,049 million, respectively.

The contractor received its original C/SC system validation in January 1979. The January 1987 AOE-6 contract required that a C/SC system demonstration be performed within 30 days. However, the contractor did not submit its system description until May 1987. An implementation visit occurred in June 1987; however, a SAR was not done until July 1990.

Audit information for this program was from Inspector General, DoD, Audit Report No. 92-030, "Acquisition of the AOE-6 Fast Combat Support Ship," December 27, 1991.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: MK-50 Torpedo

Acquisition Command: Naval Sea Systems Command

Contractor: Alliant Techsystems Incorporated, Marine Systems East; and Westinghouse Electric Corporation, Defense and Electronics Center

Program Description: The MK-50 Torpedo is a lightweight, anti-submarine torpedo that will be used from multiple launch platforms. The Navy has a leader/follower acquisition strategy. Alliant, the leader, designed the torpedo. Alliant was previously Honeywell, Inc., Underseas Systems Division. Westinghouse, using the Alliant design, is a second production source, the follower.

The Navy's development contract with Alliant had essentially concluded in 1990. The Navy had contracted with Alliant for 276 MK-50 torpedoes: 76 torpedoes in October 1988; 100 torpedoes in November 1989; and 100 torpedoes in February 1991. Our review focused on the 1988 contract, with target and ceiling prices of \$172.4 million and \$189.1 million, respectively. As of August 1991, the contractor's and program manager's EACs were \$161 million and \$168.6 million, respectively.

The Navy awarded three contracts to Westinghouse for 339 MK-50 low-rate initial production torpedoes. In December 1988, a contract was awarded for familiarization and qualification of 10 torpedoes, as well as low-rate initial production for 74 torpedoes. In January 1990 and February 1991, contracts were awarded for 100 and 165 low-rate initial production torpedoes, respectively. Our review focused on the January 1990 contract, with target and ceiling prices of \$119.9 million and \$130.7 million, respectively. As of February 1992, the contractor's and program manager's EACs were \$109.2 million and \$112 million, respectively.

The original tri-Service validations for the Honeywell C/SC system for development and for production were done in 1974 and 1978, respectively. In early 1980, a SAR was done on the Alliant MK-50 advanced development contract. In February 1984, before the contract was definitized, another SAR was done on Alliant's C/SC system for the MK-50 full-scale development contract. In December 1989, an extended SAR was done on the first low-rate initial production contract. In August 1990, a baseline review was conducted for the 1990 low-rate initial production contracts.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

The Westinghouse C/SC system received its original tri-Service validation in December 1987. In June 1990, a SAR was done on the December 1988 MK-50 contract.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: SSN-21 Submarine

Acquisition Command: Naval Sea Systems Command

Contractor: Newport News Shipbuilding and Drydock Company;
and General Dynamics, Electric Boat Division

Program Description: The SSN-21 is a nuclear attack submarine that will replace the SSN-585 and SSN-594 class submarines. In January 1992, the USD(A) proposed the termination of the SSN-21 program after construction of the lead ship.

In April 1987, the Navy awarded a cost-plus-fixed-fee contract to Newport News Shipbuilding and Drydock Company for the design of the SSN-21 class submarine. Electric Boat was a directed subcontractor. The estimated contract price was \$325 million. By June 1991, the contract value had increased to \$532.8 million. The contractor's and Program Manager's EACs were \$637.7 million and \$603.8 million, respectively.

In January 1989, the Navy awarded a fixed-price-incentive contract to General Dynamics, Electric Boat Division, for the construction of the lead SSN-21 submarine. The target price was \$726.0 million. As of March 1992, the target price had increased to \$946.7 million, while the contractor's and program manager's EACs were \$1,038.7 million and \$1,152.3 million, respectively.

Newport News Shipbuilding's C/SC system was originally validated in 1983 for a SSN-688 class contract. An extended SAR was done in June 1989 to extend the validation to three SSN-688 submarine construction contracts, one carrier construction contract, and the SSN-21 design contract. This SAR was never completed. Instead another extended SAR was performed in February 1991 on a SSN-688 construction contract that had been in the 1989 extended SAR.

The Electric Boat C/SC system was originally validated in April 1980. The 1989 SSN-21 construction contract included a requirement that a SAR be performed within 180 days of contract award. Electric Boat announced its intention to reprogram labor and material along with C/S system modifications effective at the end of April 1992. An extended SAR was done in June 1991. The 2-1/2 year delay was to allow a revision to the C/SC system to reflect modular ship construction.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Based on issues identified during this C/SC system audit, we issued Inspector General, DoD, Audit Report No. 92-052, "Use of Contractor Cost and Schedule Control Systems for the SSN-21."

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: C-17 Transport Aircraft

Acquisition Command: Aeronautical Systems Division, Air
Force Materiel Command (was Air Force
Systems Command during our audit)

Contractor: Douglas Aircraft Company

Program Description: The C-17 was developed as an all-weather, air-refuelable, airlift aircraft able to use small airfields. The Air Force had originally planned to purchase 210 C-17 aircraft for approximately \$42 billion. However, in April 1990, the quantity was reduced to 120 aircraft for an estimated \$35 billion.

In August 1981, the Air Force initiated a fixed-price incentive contract for the development of the C-17 aircraft. In December 1985, the Air Force authorized the C-17 full-scale development. In January 1988 and July 1989, the Air Force exercised options for two and four production aircraft, respectively. As of January 1992, the contract ceiling price for development and the six production aircraft was \$6.6 billion. As of January 1992, the EAC for the development and six production aircraft was \$7.5 billion. In July 1991, the Air Force awarded Douglas another contract for four additional C-17s with target and ceiling prices of \$1.03 billion and \$1.22 billion, respectively. As of January 1992, the contractor's and program manager's EACs were \$980 million and \$1.02 billion, respectively.

In 1982, the Air Force conducted a demonstration review of Douglas' research and development C/SC system. In 1987, about two years after awarding the full-scale development effort, a SAR was done for the C-17 full-scale engineering development contract. A review of the C/SC system implementation for the production options was not done because the production vehicles were effectively test vehicles. An extended SAR to validate the production C/SC system was planned for June 1992 on the 1991 contract for the third production lot.

Based on issues identified during this C/SC system audit, we issued Inspector General, DoD, Report No. 92-046, "Audit of Contractor Accounting Practice Changes for C-17 Engineering Costs," February 13, 1992, and Inspector General, DoD, Report No. 92-074, "Contracting Practices for the C-17 Flight Test Aircraft," April 10, 1992.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: Short Range Attack Missile II (SRAM II)

Acquisition Command: Aeronautical Systems Division, Air
Force Materiel Command (was Air Force
Systems Command during the audit)

Contractor: Boeing Aerospace and Electronics

Program Description: The SRAM II was being designed to be an improved nuclear air-to-surface missile carried on the B-1 and B-2 aircraft. In addition, the Air Force was developing a tactical variant, the SRAM T, to be carried on F-15, F-111, and North Atlantic Treaty Organization aircraft. The Air Force originally planned to procure 1,633 missiles for \$2.4 billion; however, the quantity was reduced to 700 missiles for \$2.2 billion. On September 27, 1991, the President terminated the SRAM II Program.

In April 1987, the Air Force awarded a fixed-price-incentive contract to develop and test the SRAM II. As of December 1991, the contract target and ceiling prices were \$311 million and \$342 million, respectively. The SRAM development experienced significant cost increases, schedule delays, and technical problems, resulting in a September 1990 cure notice to the contractor to propose corrections to bring the Program under control. By December 1991, the contractor's and the program manager's EACs were \$608.7 million.

Tri-Service validation of Boeing's C/SC system was obtained in June 1971 for both research and development and production. A SAR for the 1987 SRAM II contract was done in November 1988. A baseline review for an over-target baseline had been planned for July 1991; however, the SRAM II program was cancelled.

Based on issues identified during this C/SC system audit, we issued Inspector General, DoD, Audit Report No. 92-018, "Air Force Short Range Attack Missile Program," December 12, 1991.

APPENDIX A - DESCRIPTION OF DEFENSE ACQUISITION PROGRAMS
REVIEWED (Continued)

Program Name: Titan IV Expendable Launch Vehicle

Acquisition Command: Space Systems Division, Air Force
Materiel Command (was Air Force
Systems Command during the audit)

Contractor: Martin Marietta Corporation

Program Description: The Titan IV is an unmanned, expendable launch vehicle to ensure access to space for certain national security payloads. A Titan IV was first successfully launched in June 1989.

In February 1985, the Air Force awarded Martin Marietta a fixed-price-incentive contract for development, production of 10 vehicles, and activation of a launch site for the Titan IV. Since 1985, the contract was modified to procure a total of 41 vehicles with options for up to 8 more, as well as additional launch sites. As of January 1992, the target and ceiling prices were \$9.7 billion and \$9.8 billion, respectively. The contractor's and program manager's EACs were \$8.8 billion.

Martin Marietta's research and development C/SC system was originally validated in July 1982. In June 1986, 1-1/2 years after the 1985 Titan IV contract award, an extended SAR was done to extend the research and development validation to production, with a follow-up review of corrective actions done in August 1986. The 1-1/2 year delay in conducting the extended SAR was to allow the contractor time to accommodate Government funding requirements. In December 1987, a staff surveillance visit was done after 13 launch vehicles were added to the contract. In May 1990, another SAR was done for the contract modification that added 18 vehicles to the contract, with a followup of corrective actions done in July 1990.

Based on issues identified during this C/SC system audit, we issued Inspector General, DoD, Audit Report No. 92-064, "Titan IV Program," March 31, 1992.

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**APPENDIX B - OTHER INSPECTOR GENERAL, DOD, REPORTS ISSUED AS
A RESULT OF THIS AUDIT**

Report No. 92-018, "Air Force Short Range Attack Missile II Program," December 12, 1991. This report identified the need for a formal Defense Acquisition Board review of the SRAM II program because of the significant cost and schedule overruns and technical problems. However, the President cancelled the SRAM II program on September 27, 1991, after the August 30, 1991, draft report, eliminating the need for the recommendations.

Report No. 92-046, "Audit of Contractor Accounting Practice Changes for the C-17 Engineering Costs," February 13, 1992. This report identified an improper accounting practice change for charging C-17 sustaining engineering costs that resulted in development costs being retroactively charged to procurement-funded production lots. As a result, about \$172 million of development costs were improperly reallocated to production lots. Also, the reallocation resulted in at least \$148 million in additional financing provided to the contractor that otherwise would not have been received in FY 1991. The USD(A) concurred in our recommendation that the accounting practice change be made prospectively only. As a result of DPRO review, \$142 million will be charged to the correct funds. The DCAA has agreed to provide guidance and information to its auditors concerning the need to include funding considerations in its audits. The DCAA also agreed to include report qualifications in its quality control program to ensure that report conclusions adequately reflect the qualifications.

Report No. 92-052, "Use of Contractor Cost and Schedule Control Systems for the SSN-21," February 19, 1992. This report found that the Navy had not validated the C/SC system for the SSN-21 design contract and performed inadequate surveillance of the design contract. We recommended that the C/SC system for the design effort be validated and surveillance for both the prime contractor and major subcontractor be done. We also reported that the nuclear propulsion contracts did not require C/SC systems because of a 20-year-old waiver. Based on our recommendations, the USD(A) directed the Navy to void the waiver.

Report No. 92-064, "Titan IV Program," March 31, 1992. This report identified the lack of control over appropriations when making progress payments. This lack of control results in potential Antideficiency Act violations. We recommended improved internal controls. DoD management nonconcurred with our recommendations.

**APPENDIX B - OTHER INSPECTOR GENERAL, DOD, REPORTS ISSUED AS
A RESULT OF THIS AUDIT (Continued)**

Report No. 92-74, "Contracting Practices for the C-17 Flight Test Aircraft," April 10, 1992. This report found that the Air Force inappropriately established, priced, and accepted the "T-1 Assembly Complete" contract line item and event-based milestone. We recommended procedures to improve OSD oversight of program milestones that will affect an OSD decision.

APPENDIX C - DEFINITION OF TERMS USED IN THIS REPORT

Acquisition Program Baseline. The Acquisition Program Baseline embodies the cost, schedule, and performance objectives for a program. This baseline is approved by the milestone decision authority at acquisition decision points or when changes have occurred. Program managers must submit deviation reports when a baseline breach has or will occur.

Baseline Review. A Baseline Review, based on very limited sampling, is to determine if a contractor is continuing to use the previously accepted performance measurement system and is properly implementing a baseline on the contract.

Cost Account Manager. A cost account manager is responsible for task performance detailed in a cost account and for managing the resources authorized to accomplish the tasks.

Cost Performance Index (CPI). The cost-performance index is the ratio of the budgeted cost of work scheduled to the actual cost of work performed. The cost-performance index measures how well the contractor is progressing relative to its plan. A ratio of 1 indicates that the contractor is progressing according to plan. A ratio of less than 1 indicates an overrun. A ratio of more than 1 indicates an underrun.

Cost Performance Report (CPR). The CPR is a contractually required report submitted by contractors to the Government for those contracts that have C/SC system requirements. The report provides contract C/SC status information, early indicators of contract C/SC problems, and management actions taken to resolve problems affecting cost and schedule performance.

Earned Value. Earned value is the budgeted cost of work performed, that is, the planned value of work accomplished. Actual variances from the budgeted amount of work performed is a measure of performance for specific tasks or groups of tasks. The importance of earned value is the C/SC system's ability to measure the program's status and identify problem areas.

Extended Subsequent Application Review (SAR). An extended SAR of a contractor's C/SC system will expand an original validation from one phase to another, such as from development to production, from one contractor facility to another, or from the validated C/SC system description to a revised system description.

APPENDIX C - DEFINITION OF TERMS USED IN THIS REPORT
(Continued)

Front Loading. Front loading means that the budget and schedule have been allocated to earlier tasks with insufficient budget and schedule allocated to later tasks. The result of front loading is a delay in recognition of significant problems and overruns.

Over-Target Baseline. An over-target performance measurement baseline represents a replanning of the work required to complete the contract based on an EAC that exceeds the contract target cost. Such replanning must be formally established, controlled, and approved by the Government.

Performance Measurement Baseline. The performance measurement baseline is the contractor's plan for accomplishing the required work and includes schedules and budgets for all authorized work. It ties together cost, schedule, and technical performance of the tasks that make up the total effort, that is, what must be done, when, and at what cost.

Subsequent Application Review (SAR). A SAR is a review of a contractor's implementation of a validated C/SC system on a newly awarded contract or contract modification.

Work Breakdown Structure (WBS). The WBS represents the contract work to be done and the way it is to be managed and done. The WBS defines the product to be developed or produced and relates the elements of work to be done to each other and to the end product. The combination of WBS and functional areas defines the point at which technical, cost, and schedule management and control occur.

Work Packages. Work packages are detailed, short-span jobs identified and controlled in assigning work within the organization and accomplishing work required to complete the contract. A work package represents work at levels where work is performed and has start and completion events and budgets which can be objectively measured.

**APPENDIX D - SUMMARY OF POTENTIAL BENEFITS RESULTING FROM
AUDIT**

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Type of Benefit</u>
A.1.	Internal Control. Will provide separation of duties for C/SC review function.	Nonmonetary.
A.2.a., A.2.b., A.2.c., A.3.b.	Economy and Efficiency. Will ensure more effective implementation and maintenance of C/SC system.	Nonmonetary.
A.2.b., A.3.a., A.3.c.	Economy and Efficiency. Will ensure adequate surveillance of contract cost and schedule.	Nonmonetary.
B.1., B.3., B.4.	Economy and Efficiency. Will ensure more realistic measurement of contract status.	Nonmonetary.
B.2., B.3.	Internal Control. Will provide additional oversight.	Nonmonetary.
B.3.	Compliance with Public Law. Will ensure adequate information to comply with appropriation law.	Nonmonetary.
C.	Internal Control. Will avoid premature progress payments and associated Government interest expense.	Nonquantifiable.
D.	Economy and Efficiency. Will ensure that C/SC systems are adequately considered in all management system reviews.	Nonmonetary.
E.	Economy and Efficiency. Will ensure more effective implementation and maintenance of C/SC system.	Nonmonetary.

**APPENDIX D - SUMMARY OF POTENTIAL BENEFITS RESULTING FROM
AUDIT (Continued)**

F.	Internal Control. Will ensure that C/SC and related reviews are done properly.	Nonmonetary.
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APPENDIX E - 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, Acquisition Policy and Program
Integration, Cost Management, Washington, DC

Department of the Army

Office of the Assistant Secretary of the Army (Research,
Development and Acquisition), Office of Assistant Deputy
for Program Evaluation, Washington, DC
Deputy Chief of Staff, Resource Management, Contract Cost
Performance Division, Army Materiel Command,
Alexandria, VA
FAADS C2 Program Office, Missile Command, Redstone
Arsenal, AL
M1 Tank Program Office, Tank and Automotive Command,
Detroit, MI

Department of the Navy

Office of the Assistant Secretary of the Navy (Research,
Development, and Acquisition), Washington, DC
Cost Analysis Office, Naval Sea Systems Command,
Arlington, VA
MK-50 Program Office, Naval Sea Systems Command,
Arlington, VA
Seawolf (SSN-21) Submarine Program Office, Naval Sea Systems
Command, Arlington, VA
Supervisors of Shipbuilding, Groton, CT, and Newport
News, VA

Department of the Air Force

Office of the Assistant Secretary of Air Force
(Acquisition), Washington, DC
Office of the Assistant Secretary of Air Force (Financial
Management), Washington, DC
Air Force Materiel Command, Andrews Air Force Base, MD
TITAN IV Systems Program Office, Space Systems Division,
Los Angeles, CA
C-17 System Program Office, Aeronautical Systems Division,
Wright-Patterson Air Force Base, OH
Short Range Attack Missile System Program Office,
Aeronautical Systems Division, Wright-Patterson Air Force
Base, OH

APPENDIX E - ACTIVITIES VISITED OR CONTACTED (Continued)

Defense Agencies

Defense Contract Audit Agency:

Headquarters, Alexandria, VA
Alliant Techsystems, Minneapolis, MN
Boeing Aerospace and Electronics Company, Seattle, WA
Douglas Aircraft, Long Beach, CA
Electric Boat, Groton, CT
General Dynamics Land Systems Division, Detroit, MI
Martin Marietta, Denver, CO
Newport News Shipbuilding and Drydock, Newport News, VA
TRW, Los Angeles, CA
Westinghouse Naval Systems, Cleveland, OH

Defense Contract Management Command:

Office of Program and Technical Support
Defense Plant Representative Offices:

Alliant Techsystems, Minneapolis, MN
Boeing Aerospace and Electronics Company, Seattle, WA
Douglas Aircraft, Long Beach, CA
General Dynamics, Land Systems Division, Detroit, MI
Martin Marietta, Denver, CO
TRW, Los Angeles, CA
Westinghouse Naval Systems, Cleveland, OH

Defense Contract Management Office, Kirtland Air Force
Base, NM

Non-DoD Government Activities

Department of Energy, Washington, DC
Office of the Inspector General
Office of Deputy Assistant Secretary for Naval Reactors

APPENDIX E - ACTIVITIES VISITED OR CONTACTED (Continued)

Non-Government Activities

Alliant Techsystems, Minneapolis, MN
Boeing Aerospace and Electronics Company, Seattle, WA
Douglas Aircraft, Long Beach, CA
General Dynamics, Electric Boat Division, Groton, CT
General Dynamics, Land Systems Division, Detroit, MI
General Electric, Machine Apparatus Operation,
Schenectady, NY
Martin Marietta, Denver, CO
Newport News Shipbuilding and Drydock, Newport News, VA
TRW, Los Angeles, CA
Westinghouse, Plant Apparatus Division, Monroeville, PA
Westinghouse Naval Systems, Cleveland, OH

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APPENDIX F - REPORT DISTRIBUTION

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition
Comptroller of the Department of Defense
Director, Acquisition Policy and Planning Integration, Cost
Management
Director, Defense Procurement
Director, Defense Acquisition Regulatory Council

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Research, Development, and
Acquisition), Office of Assistant Deputy for Program
Evaluation
Inspector General, Department of the Army
Deputy Chief of Staff, Resource Management, Contract Cost
Performance Division, Army Materiel Command

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Assistant Secretary of the Navy (Research, Development, and
Acquisition)
Naval Sea Systems Command

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of Air Force (Acquisition)
Assistant Secretary of Air Force (Financial Management and
Comptroller)
Air Force Materiel Command

Defense Agencies

Director, Defense Contract Audit Agency
Director, Defense Contract Management Command, Defense Logistics
Agency

Non-DoD Activities

Department of Energy
Office of Management and Budget
U.S. General Accounting Office, National Security and
International Affairs Division, Technical Information Center

APPENDIX F - REPORT DISTRIBUTION (Continued)

Chairman and Ranking Minority Member of the following
Congressional Committees and Subcommittees:

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

PART IV - MANAGEMENT COMMENTS

Office of the Under Secretary of Defense for Acquisition

Director, Defense Procurement

Director, Acquisition Policy and Program Integration

Defense Contract Audit Agency

Defense Logistics Agency

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Under Secretary of Defense for Acquisition Comments



OFFICE OF THE UNDER SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3000

DEC 22 1992

DP/CPF

MEMORANDUM FOR THE ASSISTANT INSPECTOR GENERAL FOR AUDITING,
DEPARTMENT OF DEFENSE INSPECTOR GENERAL

THRU: CHIEF, CONGRESSIONAL ACTIONS AND INTERNAL REPORTS

SUBJECT: Department of Defense Inspector General Draft Audit Report
on the Effectiveness of DoD Use of Contractor Cost Schedule
Control System Data on Major Defense Acquisition Programs
(Project No. 1AE-5006)

The subject draft audit report includes two recommendations that would entail changes to the Defense Federal Acquisition Regulation Supplement (DFARS). I do not concur in either recommendation. Detailed rationale for nonconcurrency is attached hereto.

It has only been one year since a streamlined version of DFARS was issued as part of the Defense Management Review. Much of the streamlining effort involved removal of redundant information. The report recommends that DFARS be revised to require that preaward audits and technical reviews address the efficacy of a contractor's validated Cost and Schedule Control System (C/SCS). This would be an unnecessary redundancy, as I understand that both the Defense Contract Audit Agency and Defense Contract Management Command (DCMC) are concurring with the recommendation of the subject report that their respective internal direction for preparation of field audit and technical reviews address the efficacy of a contractor's C/SCS.

An additional recommendation calls for creation of a contract clause that acknowledges the authority of the contracting officer to suspend or withhold payments and billings in the event that a "cure notice" has been issued due to C/SCS deficiencies. Contracting officers already have the authority and the duty to take whatever steps are deemed appropriate within the confines of the contract to address deficient contractor performance. I believe that the singling out of a particular area of that performance, however critical, in the manner recommended will lead to a proliferation of similar clauses addressing other areas of contract performance. More significantly, special withhold provisions give undue impetus to the practice of using payment withholds as a routine method of contract

management, which will inevitably lead to an increase in claims due to unwarranted or excessive withholding of payment.

I disagree with the recommendation that the DCMC revise the Contract Administration Manual (DLAM 8105.1) to require that Administrative Contracting Officers (ACOs) justify use of an estimate-at-completion (EAC) for progress payments when it is less than an EAC based on the cumulative cost performance index. I also disagree with the subject report's finding that the C-17 contractor was overpaid progress payments during the period of March 1991 through November 1991. This recommendation and finding are based in part upon an assertion that the ACO's use of EACs of \$7.1 billion and \$7.3 billion on the C-17 contract during that time period was in error, since those EACs were not based on the cumulative cost-performance index. The latter indicated a \$7.4 billion EAC in March 1991. However, the report notes that the ACO performed an extensive analysis to support the lower EACs. Nevertheless, it is assumed that, because the EAC subsequently grew to \$7.45 billion, the ACO's action led to overpaid progress payments.

Use of the cumulative cost-performance index to arrive at an EAC for calculating progress payments on a loss contract is fully acceptable. However, it is not the only legitimate means for producing an EAC, nor should it serve as the standard against which all other EAC calculations are measured. The ACO should retain the latitude and responsibility to calculate the EAC by whatever method is deemed appropriate and supportable for a given contract. The ACO should not be compelled to address why the cumulative cost-performance index was not used.

More detailed comments on the report's recommendations and findings are attached.



Eleanor R. Spector
Director, Defense Procurement

Attachment

Under Secretary of Defense for Acquisition Comments (Continued)

IG DRAFT AUDIT ON THE EFFECTIVENESS OF DOD USE OF
CONTRACTOR COST AND SCHEDULE CONTROL SYSTEM DATA ON
MAJOR DEFENSE ACQUISITION PROGRAMS
DATED SEPTEMBER 23, 1992 (PROJECT NO. 1AE-5006)

DDP RESPONSE TO RECOMMENDATIONS C.2.a, E.2, AND F.1
OF THE DRAFT REPORT

FINDING C.: Available cost performance data was not consistently used in reviewing and approving progress payments. This condition occurred because adequate guidance was not provided to ACOs to ensure that cost and schedule control system data was consistently used as part of the review of progress payments. Also, ACOs were not routinely provided program manager estimates at completion to consider as part of their review and approval of progress payments. As a result, DoD management could not be assured that progress payments were made based on contract performance rather than costs incurred.

DDP RESPONSE: As part of the detailed discussion in support of this finding the subject report cites progress payment administration on the Air Force contract for the development and initial production of the C-17 aircraft. The report concludes that, during the period March 1991 through November 1991, progress payments were overpaid to the C-17 contractor because the ACO chose not to utilize the cumulative cost performance index for arriving at the contract's estimate-at-completion (EAC). A valid EAC is needed to ensure that progress payments are commensurate with the estimated cost to complete contract performance on a contract that is in a loss position.

The subject report acknowledges that the ACO had a fully documented analysis that supported use of EACs of \$7.1 billion and \$7.3 billion during the period in question, notwithstanding that the cumulative cost performance index indicated an EAC of \$7.4 billion in March 1991. ACOs are required to fully support the basis for withholding part of any progress payment. They must also ensure that any withhold is not excessive, to the extent that the contractor is unjustly penalized. This may lead to contractor claims against the Government, with their attendant costs to analyze, negotiate, and settle.

Consequently, even though the EAC later grew to \$7.45 billion in November 1991, we do not agree with the subject report's conclusion that the contractor was overpaid progress payments for the period in question. The ACO acted prudently and in accordance with existing guidance to document the basis for the EACs used for progress payment purposes. While the cumulative cost performance index may be a

ATTACHMENT

**Final Report
Reference**

reasonable basis for calculation of an EAC, it is not the only reasonable basis, nor should it serve as a standard against which all other EAC calculations are evaluated.

RECOMMENDATION C.2.a: We recommend that the Commander, Defense Contract Management Command, revise the Contract Administration Manual (DLAM 8105.1), part 32.594, "Periodic Reviews of Progress payments," to require justification for using an estimate-at-completion for progress payments that is less than an estimate-at-completion calculated using the cumulative cost performance index.

DDP RESPONSE: Nonconcur. While this recommendation is not specifically addressed to DDP, it deals with progress payment policies that are within the purview of DDP. Use of the cumulative cost performance index is but one basis for the calculation of an EAC for use in progress payment administration. It is not the only valid basis, nor should it be considered the benchmark against which all other EAC calculations are reconciled.

ACOs must have the latitude to calculate EAC's based upon an analysis that is fully defensible for the contract in question. This may or may not entail use of the cumulative cost performance index. We have no objection to guidance that directs ACOs to consider the cumulative cost-performance index in arriving at an EAC. However, the Government must not be perceived as following a practice of calculating several EACs through a variety of techniques, and then selecting the result that most disadvantages the contractor. No one method of EAC calculation should be singled out as the preferred method. Singling out a particular method would weaken the Government's defense against a subsequent allegation of breach of contract for failure to make payment, based on an assertion that our methodology for EAC calculation was either arbitrary, or not in compliance with our own internal guidance.

Revised

RECOMMENDATION E.2.: We recommend that the Under Secretary of Defense for Acquisition establish a contract clause, by amending the Defense Federal Acquisition Regulation Supplement, stating that up to 10 percent of billings and payment requests can be withheld upon issuance of a "cure notice" if corrective actions are not timely for identified significant and recurring deficiencies in the contractor's cost and schedule control system and other systems affecting the reliability of the performance measurement data.

DDP RESPONSE: Nonconcur. The recommended clause is unnecessary. It would restate authority already residing with the contracting officer, presumably for the purpose of heightening contractor sensitivity to a particular area of contract performance. If a contractor is not fulfilling the cost/schedule control system (C/SCS) requirements of the

Under Secretary of Defense for Acquisition Comments (Continued)

Final Report Reference

contract, to the extent that the contracting officer determines that a material requirement of the contract is not being met, the contracting officer has the authority under the Progress Payments clause (Federal Acquisition Regulation (FAR) 52.232-16(c)(1)) to reduce or suspend progress payments. Under a cost-type contract the Government cannot refuse to pay properly billed invoices unless the contractor has failed to expend its best efforts to perform the work in question. The recommended clause would not give the Government any rights beyond those currently enjoyed under existing contract provisions.

The recommendation goes even further, by tying the suspension of payments to the issuance of a cure notice. A cure notice is a precursor to a termination for default in the event of failure to cure the deficient performance within a specified time period. Therefore, not only would the recommended clause unnecessarily restate existing Government rights, it would also potentially complicate the delicate sequence of events leading up to contract termination and subsequent termination settlement. In the event that the contractor cures the deficiency, a suspension of payments raises the question of whether the contractor was unnecessarily harmed, to the extent that its efforts to cure the deficiency were unjustifiably impeded by the payment suspension.

Finally, the recommended clause would create a precedent for similar withhold clauses addressing other significant areas of contract performance. In setting a bad precedent, it reflects a reversal of Defense Management Review efforts to streamline our regulations. Even more importantly, it reinforces a mistaken impression that invoking the suspension provision of contract payment clauses is a convenient and effective vehicle for day-to-day contract management, as opposed to a "last resort" approach to addressing a failure to fulfill a material contract requirement.

Deleted

RECOMMENDATION F.1: We recommend that the Under Secretary of Defense for Acquisition revise the Defense Federal Acquisition Regulation Supplement (DFARS) to require that technical evaluations, preaward surveys and other reviews of contractor proposals, including proposal audits, address how well the contractor has maintained its validated cost and schedule control system on other defense contracts. This requirement should be implemented for contracts with a requirement to meet the cost and schedule control system criteria.

DDP RESPONSE: Nonconcur. The IG has recommended that the Defense Contract Audit Agency (DCAA) revise its guidance for performance of proposal audits to include an assessment of contractor system deficiencies affecting C/SCS. A similar recommendation has been made to the Defense Contract Management Command (DCMC) regarding inclusion of such assessments in DCMC's technical reviews of contractor proposals and

in preaward surveys. Both DCAA and DCMC have indicated that they concur with the IG recommendation in this matter, and will revise their internal guidance accordingly. Consequently, since the reports in question will be prepared in accordance with guidance that reflects the IG's concerns, there is no need to revise the DFARS.

An overall assessment of the past performance of contracts by a prospective contractor includes its performance of C/SCS requirements. This is already a required part of the contracting officer's determination of contractor responsibility prior to contract award. This, along with the previously noted revisions by DCAA and DCMC to their internal guidance, is sufficient to ensure that an inadequate track record in the C/SCS arena will not go unreported in the evaluation process preceding contract award.

* * * * *

Under Secretary of Defense for Acquisition Comments (Continued)



OFFICE OF THE UNDER SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3000

December 24, 1992

ACQUISITION

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT, OIG, DOD

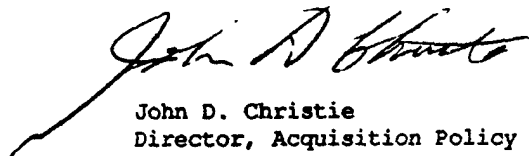
SUBJECT: Draft Audit Report on the Effectiveness of DoD Use of
Contractor Cost and Schedule Control System Data on Major
Defense Acquisition Programs (Project LAE-5006)

My comments on the subject draft report are attached. I appreciate your efforts to coordinate the audit objectives with ongoing initiatives by my office. I am confident the results of our respective activities will lead to substantial improvements in the acquisition process.

I agree the C/SCSC implementation process needs to be improved, but have reached a different conclusion how best to do so. You recommend consolidating C/SCSC review directors in DCMC because you believe system validation is a contract administration responsibility. It is--but it is also a very important program management responsibility, especially in the critical phases before contracts are awarded, and in baseline reviews afterward. I believe our successful efforts to involve program managers in C/SCSC planning and execution could be set back if we were to transfer C/SCSC "ownership" from those organizations charged with contract planning and execution to a central DoD organization.

I propose instead that DCMC be the permanent PMJEG chair--a "first among equals" to solve coordination problems. This change would also strengthen surveillance, and focus attention on the contractor's cost reports as a primary indicator of the need for a C/SCSC review. Accountability to my office would be improved because DCMC also reports to USD(A); however, we should remain an ex-officio PMJEG member because many of its activities are routine contract administration functions.

Again, thank you for the opportunity to work with your staff in the preparation of this important report. I would be pleased to meet with you to discuss my comments.


John D. Christie
Director, Acquisition Policy
& Program Integration

Attachment

**Final Report
Reference**

**DRAFT AUDIT REPORT ON THE EFFECTIVENESS OF DOD USE OF CONTRACTOR
COST AND SCHEDULE CONTROL SYSTEM DATA ON MAJOR DEFENSE
ACQUISITION PROGRAMS (PROJECT NO LAE-5006)**

* * * * *

**FINDING A: Cost and Schedule Control System Reviews and
Surveillance**

Although significant improvements had been initiated to enhance the usefulness and validity of C/SC systems and data from the C/SC systems, DoD management of the implementation and oversight of contractor C/SC systems could be more effective. The C/SC system reviews were not timely or consistently conducted. Also, surveillance and oversight of validated contractor systems were not accomplished in the most effective or efficient manner. The primary cause of the deficiencies is the lack of consistent, centrally-directed, and coordinated management of the contract administration activities for contractor C/SC systems. As a result, DoD acquisition program management cannot completely rely on the contractor's C/SC system data in the acquisition decisionmaking process, and prudent administration of DoD contracts is impaired.

Recommendation 1.a

The Under Secretary of Defense for Acquisition consolidate the responsibility for validating contractor cost and schedule control systems under the Defense Contract Management Command (DCMC), including cost and schedule control system activities at shipbuilding contractors.

Comments

I concur with the findings leading to this recommendation, but do not concur that the best way to correct the problems found in the audit and in earlier reviews sponsored by my office is to centralize C/SCSC "system review" responsibility in DCMC. I evaluated that option in coordination with the Services and DCMC independent of the OIG audit, and concluded that C/SCSC ownership should remain with the organizations charged with the responsibility for contract planning and execution. C/SCSC validation is managed centrally by each Service, under the guidance of C/SCSC review directors

The distinction between validation and Subsequent Application Reviews (SAR) bears repeating. The former refers to initial acceptance of a contractor's management control system, while the latter refers not to a system review, but rather to the system's proper application to a new contract. The beginning point for a SAR is assumed to be a valid management control system; thus there should be no need for special SAR planning unless C/SCSC implementation problems have been identified, for example, by surveillance. Recent DoD efforts to improve

ATTACHMENT

Revised

C/SCSC emphasize its importance to program management. A SAR is inherently a program management responsibility. To define a SAR as primarily a contract administration responsibility reverses that emphasis, and perpetuates C/SCSC as an activity outside the realm of routine integrated cost, schedule, and technical management. With that in mind, our discussions with the Services and DCMC considered transferring the review director function only to DCMC. Team staffing and supervision responsibility would remain with the procuring activities, with increased program management participation.

Another factor to consider is the evolution of the review director responsibility. Several years ago, each Service had a relatively large (4-6 people), central review direction office at its major acquisition command headquarters. That is no longer true. While the Army remains essentially unchanged with five people involved in C/SCSC review direction, the Air Force has only three, and the Navy has none. This reflects differing management philosophy. The Air Force delegated significant responsibility to its commodity centers, and the Navy delegated review direction entirely to its systems commands, all of which are located in proximity to the Navy C/SCSC focal point office. The changes in C/SCSC review direction occurred in part because, as more contractors were validated, review emphasis shifted to SARs, with each Service responding differently and in the process redefining the review director function.

With regard to transferring the review director function only, there are two main problems. The first is the C/SCSC ownership issue as discussed above. The second concerns DCMC's ability to perform the mission. DCMC would require additional resources, not only spaces but qualified people to fill them. The Navy has no spaces and wishes to retain its delegated review direction approach, while the Air Force and Army differ on review direction philosophy.

Implementation of C/SCSC on shipbuilding contractors was seriously flawed in the early years, but has improved very significantly since 1985. Improvements could not be accomplished all at once, and priorities were assigned to programs at various shipyards. The draft audit report discussion contains some echoes of those decisions; for example, the relatively low priority given AOE-6 as compared to the SSN-21 program, and the decision not to revisit the SSN-21 design contract because a review had been conducted (albeit not led by the Navy focal point) and the contractor's cost reporting was deemed acceptable. These examples are not indicative of shipbuilding C/SCSC implementation today. Finally, I do not agree shipbuilding C/SCSC management should be reassigned to DCMC because overall contract administration was not transferred from the SUPSHIPS.

In summary, the drawbacks to centralization outweigh the benefits. C/SCSC ownership would be diffused and further removed from routine program management. The Services' and DCMC's efforts to improve C/SCSC implementation and data usage within their respective organizations would likely be set back by such far-reaching changes in DoD Component relationships and organizations. I propose instead to strengthen DCMC's role in the Performance Measurement Joint Executive Group (PMJEG) to address the identified problems. The proposed reorganization is discussed in the comments on Recommendation 1.c.

Recommendation 1.b

The Under Secretary of Defense for Acquisition direct that Supervisors of Shipbuilding, Conversion, and Repair implement guidance on cost and schedule control system criteria, reviews, and surveillance that is issued by the Defense Contract Management Command.

Comments

Concur. The same standards should apply to all contractors, and should be implemented consistently. I propose to issue implementing guidance within 90 days.

Recommendation 1.c

The Under Secretary of Defense for Acquisition designate the Deputy Director for Performance Management, Office of the Director for Acquisition Policy and Program Integration, to be chairman of the Performance Measurement Joint Executive Group (PMJEG).

Comments

As with Recommendation 1.a., I concur with the findings but do not concur with the means. I believe instead that DCMC should be designated the permanent chair of the PMJEG, and propose to issue guidance to that effect within 90 days. Such a "first among equals" approach would address the problems discussed in the draft report concerning review scheduling and coordination, timeliness, follow-up, surveillance, a central data base, and documentation. Accountability to my office would be improved because DCMC also reports to USD(A); however, I should remain an ex-officio PMJEG member because many of its activities are routine contract administration functions. DCMC chairmanship could also be expected to help achieve one of my office's goals--to make the quality of the contractor's output product (the cost performance report) a significant indicator of the need for a C/SCSC review. The long-range objective is for contractors to use earned value management techniques enterprise-wide as a normal way of doing business, so that

Under Secretary of Defense for Acquisition Comments (Continued)

C/SCSC reviews can be waived routinely in favor of program management baseline reviews and ongoing DCMC surveillance.

Recommendation 1.d

The Under Secretary of Defense for Acquisition revise the Joint Implementation Guide (JIG) to make Defense Contract Audit Agency and Defense Contract Management Command full-time members rather than members "as appropriate."

Comments

Concur. DCAA and DCMC have never been excluded from the PMJEG; on the contrary, they were always invited but did not always attend. That has changed, with both organizations now participating fully in PMJEG activities. DoD Instruction 5000.2, Part 11, Section B requires that each DoD Component designate a C/SCSC focal point, with all focal points constituting the PMJEG. DCAA and DCMC have designated focal points. The next revision to the JIG, expected in 1993, will delete the words "as appropriate" with respect to DCMC and DCAA to eliminate any confusion; however, the point is moot because of their full, active participation.

FINDING B: Performance Measurement Baseline

Contract performance measurement baselines did not reasonably represent the cost or extent of work that needed to be done to complete the contract. This condition existed because contracts were negotiated without regard to the establishment of realistic baselines. Also, DoD management did not adequately evaluate and monitor the contract performance measurement baselines. Consequently, the budget allocated for work to be performed was insufficient, and effective performance measurement was impaired because there was an imbalanced relationship between the allocated budget and work package content.

Recommendation 1

The Under Secretary of Defense for Acquisition revise DoD Instruction 5000.2 and 5000.2-M, as appropriate, to require that the sufficiency of the preliminary baseline information and the implemented performance measurement baseline; that is, allocated budgets and their distribution, be evaluated before contract award and as part of the subsequent application reviews and other cost and schedule control system reviews, respectively.

Comments

Concur. This recommendation is consistent with actions taken by the USD(A) on the Upper Tier Theater Missile Defense System (UTTMDS). The Acquisition Decision Memorandum for UTTMDS, signed on January 28, 1992, required that the

Under Secretary of Defense for Acquisition Comments (Continued)

performance measurement baseline be reviewed by the program managers for the Theater High Altitude Air Defense and Ground Based Radar contracts within six months of contract award. My office is following this effort with interest, and plans to draft policy guidance within 90 days based on lessons learned from the UTTMDS experience.

A thorough baseline review--cost, schedule, and technical--is essential for effective program management, and should be performed as soon after award as practical. However, the same level of baseline preparation should not be expected before a contract is awarded. A contractor's "proposed" baseline need only identify tasks and time-phasing in sufficient detail for evaluation purposes. Developing a total baseline prior to negotiations often would require substantial replanning effort after negotiations, and would unnecessarily increase proposal costs.

Recommendation 2

The Under Secretary of Defense for Acquisition revise DoD Instruction 5000.2 and 5000.2-M, as appropriate, to require that the program manager identify full funding for contract baseline restructures that result from significant cost, schedule, and technical problems.

Comments

Nonconcur. There are two significant problems with this recommendation. First, cost performance management is just that--it is not funds management. Problems identified through cost performance management, whether variances or significant baseline restructures, are leading indicators of problems that may or may not require additional funding depending on factors such as contract type and profit share ratios. A requirement to identify full funding for contract baseline restructures could discourage program managers from acting on problems in a timely fashion. It may not be possible until after a restructure plan is completed to identify how funding will be affected. Second, funding, which may not be available immediately to the PM, is not the only management solution to problems that cause restructures. For example, an alternative may be to reduce the contract scope or, in the extreme, terminate the contract. The recommendation deals not with use of C/SCSC data, but rather with basic management considerations.

Recommendation 3

The Under Secretary of Defense for Acquisition revise DoD Instruction 5000.2 and 5000.2-M, as appropriate, to require that contracts funded with significant multiple appropriations must separately report the cost of work associated with the different appropriations.

Under Secretary of Defense for Acquisition Comments (Continued)

Comments

Nonconcur. Just as cost performance management is not funds management, it also is not accounting. The appropriate report to track appropriations is the Contract Funds Status Report (CFSR). The nature of the work should determine how the cost performance report (CPR) is structured. There could be more than one CPR on a contract with one appropriation, for example, when there is an option that will be managed separately. On the other hand, one highly successful program routinely used contracts combining multiple appropriations on single CPRs. The intended purpose of the CPR--to measure cost and schedule objectively--can be compromised when it is used for other purposes. In addition, as pointed out in the draft report, the problems seen on Titan IV are not widespread.

Recommendation 4

The Under Secretary of Defense for Acquisition revise DoD Instruction 5000.2 and 5000.2-M, as appropriate, to require that Work Breakdown Structures be developed to reflect the different nature of the work on multi-funded contracts where performance measurement by appropriation is essential to compliance with appropriation law.

Comments

Nonconcur. The Work Breakdown Structure (WBS) is defined by DoDI 5000.2 and MIL-STD-881 as a product-oriented family tree composed of hardware, software, services, data and facilities which completely defines the program. A WBS is not intended to be used as an accounting tool. Improper WBS development is a recurring problem in contract documents reviewed by OUSD(A). Significant effort has been devoted to improving instructions for proper WBS development in MIL-STD-881B. The revised MIL-STD will be issued early in 1993. It includes a user's guide intended to correct misapplications. Training materials are also being prepared for use in all DoD schools that teach acquisition subjects.

I do not agree that the SSN-21 Program did not use a WBS as the basis for the C/SC baseline. On the contrary, the SSN-21 baseline represents the first proper use of the WBS for ship C/SCSC baseline planning that my office has seen. The confusion probably arises from the fact that, at the contractor's lowest extension of the WBS, "functional" breakouts always will be found. However, at the reporting level (usually level 3), product subdivisions summing directly into higher level WBS elements will be found. The AOE-6 program predates the WBS improvements implemented on SSN-21. In all cases, shipyard C/SCSC systems separate material from labor--that is not a deficiency.

Because a good WBS is so important for effective management of DoD programs, I propose to reassign responsibility for WBS policy in DoD Instruction 5000.2 from OASD(PA&E) to my office within 90 days. Additionally, my office is working with OASD(P&L) to improve MIL-STD-499B, "Systems Engineering," to ensure that proper WBS development occurs early in the acquisition process. MIL-STD-499B is scheduled for issuance in mid-1993.

FINDING C: Progress Payments

Available cost performance data was not consistently used in reviewing and approving progress payments. This condition occurred because adequate guidance was not provided to ACOs to ensure that cost and schedule control system data was consistently used as part of the review of progress payments. Also, ACOs were not routinely provided program manager estimates at completion to consider as part of their review and approval of progress payments. As a result, DoD management could not be assured that progress payments were made based on contract performance rather than costs incurred.

Recommendation 1

The Under Secretary of Defense for Acquisition direct distribution of Defense Acquisition Executive Summary Reports on major Defense acquisition programs to cognizant contract administration offices and administrative contracting officers.

Comments

Nonconcur. DAES reports are an oversight tool, designed to provide summary program information to the program manager's superiors in the DoD Components and OSD. The recommendation addresses not only the DAES report (from the PM) but also the OSD assessment ("feedback"). The draft report indicates the primary reason for the recommendation is to provide (1) the PM's estimate of cost at completion (EAC), and (2) pertinent program assessments by acquisition officials to the ACO.

A more appropriate means to share EAC information is via the surveillance agreements between the contract administration office and the PM. These agreements are being emphasized by DCMC to establish formally the relationship between the contract administration office and its program manager "customer." We would endanger that relationship by sending OSD staff program assessments routinely to the ACO, who may give more weight to an opinion expressed by OSD staff than to local people having much more extensive information.

Until recently, the DAES feedback was provided routinely to DCMC headquarters. That distribution was interrupted as the result of a reorganization in my office. I have directed my

Under Secretary of Defense for Acquisition Comments (Continued)

Final Report Reference

staff to resume sending the feedback to DCMC for appropriate use, for example, comparison with internal DCMC reporting systems. I believe this distribution is preferable to requiring routine distribution to ACOs, and preserves the management relationships between DCMC and program managers

FINDING E: Incentives for Contractor Implementation and Maintenance of Cost and Schedule Control Systems

Contractors lacked incentive to implement and maintain a validated cost and schedule control system. This condition occurred because of insufficient guidance or criteria for incentivizing a contractor to implement and maintain a validated system and for withdrawing a contractor's validation. As a result, contractors did not implement the cost and schedule control systems in a timely manner and DoD management was receiving data from potentially deficient cost and schedule control systems.

Revised

Recommendation 1

The Under Secretary of Defense for Acquisition establish criteria and process for withdrawal of contractor's validated cost and schedule control system, including identification of specific system deficiencies in the notification of intent to withdraw system validation or "cure notice."

Comments

Nonconcur. The process is described adequately in the JIG. Identification of specific system deficiencies is implicit in the issuance of advice to a contractor that its validation is in jeopardy. The range of possible deficiencies is much too broad to establish criteria for withdrawal; such an approach tends to minimize the role of management attention to C/SCSC problems in favor of a "checklist," and goes in a direction opposite from our recent efforts to improve C/SCSC implementation.

I disagree with much of the discussion supporting this recommendation. For example, as discussed in the comments on Recommendation 1.a., the AOE-6 program had a lower priority for review and problem resolution than other shipbuilding programs at the time. The shipbuilding examples cited are not representative of other programs, because they were not typical SARs. The reviews were tantamount to initial validations in several cases. Prior validations were not withdrawn because the Navy chose to work with the shipyards. This decision recognized that shipyard C/SCSC problems were a combination of contractor deficiencies and long-standing ship contract problems, for example, WBS and reporting issues that were not worth fixing as a ship class neared the end of its construction contracts.

The draft report also discusses the DCAA recommendation that the Newport News C/SC system validation be withdrawn because DCAA could not reconcile EACs reported in CPRs with EACs used for financial or tax purposes. My office has maintained consistently that this is not a C/SCSC issue, and that DCAA's allegation that the existence of differing EACs indicates the contractor is operating two systems is greatly overstated. My staff has met with senior DCAA managers, who concur that C/SCSC reviews are not the appropriate means to address this issue.

I am confident that the PMJEG changes discussed in the comments on Recommendation 1.c. will do much to address the inconsistencies noted in C/SCSC implementation and system maintenance. More guidance and criteria would be less effective than better application of the existing guidance.

Defense Contract Audit Agency Comments



IN REPLY REFER TO

PLD 225.4.1

DEFENSE CONTRACT AUDIT AGENCY
CAMERON STATION
ALEXANDRIA, VA 22304-6178



23 DEC 1992

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT, DODIG

SUBJECT: Draft Audit on the Effectiveness of DoD Use of Contractor Cost and Schedule Control System (C/SCS) Data on Major Defense Acquisition Programs (Project No. 1AE-5006)

Our response to the subject draft report recommendations is enclosed. We appreciate your consideration of our proposed actions and your cooperation in working with us to improve our C/SCS audits.

Please direct any questions regarding this matter to Mr. Scott M. Parr, Program Manager, Policy Liaison Division, at (703) 274-7521.

Michael J. Thibault
Assistant Director
Policy and Plans

Encl

DCAA Response to Draft Audit Report on the Effectiveness of DoD Use of Contractor Cost and Schedule Control System Data on Major Defense Acquisition Programs

Copy furnished
Assistant Inspector General, Audit Policy and Oversight

DCAA RESPONSE TO DRAFT AUDIT REPORT ON THE EFFECTIVENESS
OF DOD USE OF CONTRACTOR COST AND SCHEDULE CONTROL SYSTEM
DATA ON MAJOR DEFENSE ACQUISITION PROGRAMS

Actions Taken by DCAA to Respond to C/SCS Audit Risk

In April 1991, DCAA completed development of a comprehensive training course for auditors supporting C/SCS reviews. By September 1991 this training was provided to 450 auditors involved with C/SCS at all high-risk contractor locations identified by DCAA regional offices. Since the initial training, an additional 150 auditors attended this training.

DCAA has also actively used training spaces in the 2-week C/SCS course at the Air Force Institute of Technology. Training spaces initiated by DCAA have increased as shown below:

<u>Year</u>	<u>Number of Spaces</u>
1991	25
1992	56
1993	66

We believe that an analysis of C/SCS training clearly shows DCAA promptly and comprehensively responded to the audit risk first identified on the A-12 program in 1990 and formally reported in late 1992. For example, at the 12 field audit offices (FAOs) that relate to the nine programs the IG reviewed in 1991, DCAA now has 101 auditors trained in C/SCS. This clearly demonstrates DCAA's commitment to provide technical skills necessary for auditors to accomplish C/SCS reviews.

DCAA has also updated the audit program for C/SCS surveillance. The initial audit program was issued in July 1991 and subsequently revised in July 1992.

DCAA separately incorporate C/SCS requirements in five other standard audit programs, as follows:

- Billing System Reviews
- Progress Payments Based on Cost
- Progress Payments Based on Percentage of Completion
- Quarterly Limitation on Payments Statement
- Contract Audit Closing Statements

During FY 1993, we will continue to make several other enhancements to DCAA's audit coverage of C/SCS. Within this effort we will expand the guidance to fully integrate all C/SCS audit effort.

ENCLOSURE

Defense Contract Audit Agency Comments (Continued)

Recommendation A.2.a.:

Provide additional training on cost and schedule control systems to include responsibilities for demonstration and validations, subsequent application reviews, and surveillance. Information about cost and schedule control system requirements should also be integrated into existing Defense Contract Audit Agency courses, such as "Technical Indoctrination," Briefing Contracts," and supervision and management courses.

DCAA Response:

Concur in Principle. As described above, DCAA has provided a significant amount of training on C/SCS since the IG's field visits. Regional offices will continue to give field audit office (FAO) training using the Agency developed training course on an as needed basis. In those cases where more extensive FAO auditor training is needed, we will continue to rely on the Air Force Institute of Technology.

DCAA will also develop an awareness training course in FY 1993 for FAO staff conference presentations. The course will focus on the interrelationships between C/SCS and other audits performed by DCAA.

Recommendation A.2.b.

Establish a point of contact (monitor) for cost and schedule control systems in field offices with significant contracts with cost and schedule control system requirements or high-risk contracts.

DCAA Response

Nonconcur. The FAO manager who signs the audit report and the supervisory auditor who managed the assignment are clearly the proper DCAA C/SCS contacts. These individuals are known throughout our reporting network. A monitor network is duplicative, unnecessary and could result in customer confusion.

Recommendation A.2.c.

Provide guidance and standard audit programs for Defense Contract Audit Agency participation in validations, subsequent application reviews, and other cost and schedule control system-related reviews, to include necessary transaction testing and format documentation of the audit results given to the review team leaders.

DCAA Response

Partially Concur. As described above, DCAA is presently enhancing current CAM guidance relating to DCAA participation in validations, subsequent application reviews, and other cost and schedule control system reviews. This ongoing action will be completed in FY 1993. However, we do not believe that there are enough standard audit steps in these areas to warrant the development of individual audit programs.

Recommendation D.1

We recommend that the Director, Defense Contract Audit Agency, issue guidance and revise all standard audit programs, as appropriate, to include assessment and reporting of contractor cost and schedule control system implications.

DCAA Response

Concur in Principle. See discussion of DCAA action above. As part of that planned and ongoing effort, DCAA is also modifying several audit programs to include the assessment and reporting of system deficiencies that impact the accuracy of the C/SCS. These actions will be completed in FY 1993. These include:

- Materials Management and Accounting System
- Forward Pricing Rates and Factors
- Accounting System Survey
- Labor Cost Allocation

Recommendation F.2

We recommend that the Director, Defense Contract Audit Agency, revise guidance, standard audit program, and reporting requirements for proposal audits to include an assessment of contractor system deficiencies affecting cost and schedule control system and data from the system, when appropriate.

DCAA Response

Concur. This action will be added to the other FY 1993 planned and ongoing actions outlined above.

Defense Contract Audit Agency Comments (Continued)



IN REPLY REFER TO

PID 225.4.2

DEFENSE CONTRACT AUDIT AGENCY
CAMERON STATION
ALEXANDRIA, VA 22304-6178



21 JAN 1993

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT, DODIG

SUBJECT: Followup to Response on Draft Audit on the Effectiveness of DoD Use of Contractor Cost and Schedule Control System (C/SCS) Data on Major Defense Acquisition Programs (Project No. 1AE-5006)

After discussions with Ms. Diane Stetler, Audit Policy and Oversight, we are providing additional clarification on and actions that we will implement for recommendations A.2.b, A.2.c, D.1, and F.2. This supplements our 23 December 1992 response.

On recommendation A.2.b, we will re-emphasize to our field audit offices the importance of considering the impact of system reviews on the contractor's Cost and Schedule Control System. A memorandum will be issued by 31 March 1993 covering this area.

On recommendation A.2.c, in addition to enhancing our current guidance in the Contract Audit Manual (CAM), we will develop audit steps for C/SCS criteria that DCAA is generally assigned to review. These steps will most likely be incorporated into the existing standard audit program. This will be completed in FY 1993.

On recommendation D.1, we will also modify the audit program for Billing System Reviews to include the assessment and reporting of system deficiencies that impact the accuracy of the C/SCS. This will be completed in FY 1993.

On recommendation F.2, in FY 1993 we will revise CAM guidance, standard audit programs, and reporting requirements on proposal audits to include an assessment of contractor system deficiencies affecting C/SCS. In addition, we will issue a Memorandum for Regional Directors (MRD) emphasizing this recommendation.

Any questions should be referred to Mr. Scott M. Parr, Program Manager, Policy Liaison Division, at (703) 274-7521.

Michael J. Thibault
Assistant Director
Policy and Plans

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AIG, Audit Policy and Oversight

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Defense Logistics Agency



DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100



IN REPLY
REFER TO

DLA-CI

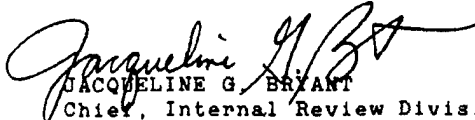
24 DEC 1992

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING,
DEPARTMENT OF DEFENSE

SUBJECT: Draft Audit Report on the Effectiveness of DoD Use of
Contractor Cost and Schedule Control System Data on
Major Defense Acquisition Programs (Project
Number 1AE-5006)

This is in response to your 23 September 1992 request.

7 Encl


JACQUELINE G. BRYANT
Chief, Internal Review Division
Office of the Comptroller

cc: DCMC-DD
DCMC-EP
DCMC-A
DLA-CI

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION A.3.a: Recommend that the Commander, Defense Contract
Management Command (DCMC), provide guidance and resources for the
consistent and adequate surveillance of contractor cost and schedule
control systems to include:

(1) Evaluating high risk contracts, coordinating with the Defense
Contract Audit Agency (DCAA), and the program office, at least annually
to ensure the effective use of existing resources;

(2) Supplementing existing guidance for Government oversight and
surveillance of critical major subcontractors' cost and schedule
control system and data from the subcontract systems to ensure adequate
surveillance of subcontract cost and schedule control system when the
contractor cannot or does not provide adequate subcontractor
surveillance. Included in the guidance should be a requirement for an
assessment of the contractor's ability to provide adequate
subcontractor surveillance as part of the preaward assessments of the
contractor implementation of cost and schedule control systems on prior
contracts;

(3) Developing guidance on the need to maintain an up-to-date
surveillance plan and the need to conduct periodically data verifica-
tion and transactional testing of the contractor's data, especially
related to earned value determinations.

DLA COMMENTS: Concur.

The Joint Surveillance Guide (DLAH 8315.1) will be revised to address
prime and subcontractor surveillance planning. This guidance will
cover joint surveillance planning between the DCMC Field Activities and
DCAA. Joint surveillance planning with the contractor will also be
covered. The reality of continued personnel cutbacks and reduced
resources makes it imperative that effective coordination among DCMC,
DCAA, program offices, and contractors be established and maintained to
ensure adequate coverage.

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your
copy of the response).
- (X) Concur; however, weakness is not considered material (Rationale
must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual
Statement of Assurance.

ESTIMATED COMPLETION DATE: 1 APR 93

RECOMMENDATION MONETARY BENEFITS: N/A

DLA COMMENTS: N/A

ESTIMATED REALIZATION DATE: N/A

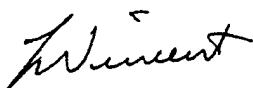
AMOUNT REALIZED: N/A

DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, (703) 617-7200

PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
& Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:



LEONARD VINCENT
Rear Admiral, SC, USN
(Acquisition Management)

Defense Logistics Agency (Continued)

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION A.3.b: Recommend that the Commander, DCMC, establish a data base to provide information on contractors' compliance with cost and schedule control systems requirements. The data base should include information on validations, subsequent application reviews, and other cost and schedule control system reviews, deficiencies identified in the reviews and during surveillance and a system to track corrective actions.

DLA COMMENTS: Concur.

Initially, an interim data base and reporting procedures will be developed and distributed (1 Apr 93). DCMC already plans to collect and report C/SCSC system status information using the Contractor System Status Module of the DCMC Management Information System (1 Jul 93).

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your copy of the response).
- (X) Concur; however, weakness is not considered material (Rationale must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual Statement of Assurance.

ESTIMATED COMPLETION DATE: 1 JUL 93

RECOMMENDATION MONETARY BENEFITS: N/A

DLA COMMENTS: N/A

ESTIMATED REALIZATION DATE: N/A

AMOUNT REALIZED: N/A

DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200

PSE REVIEW/APPROVAL: Donald C. Bullock, COL, Acting Director, Program
& Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:



LEONARD VINCENT
Rear Admiral, SC, USN
(Acquisition Manager)

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION A.3.c: Recommend that the Commander, DCMC, establish policy that requires a documented strategy for Subsequent Application Reviews (SARs) to include the depth of the review of specific criteria and deficiencies noted from implementation and surveillance reviews of other contracts.

DLA COMMENTS: Partially concur.

The Under Secretary of Defense for Acquisition has not yet determined whether DCMC should take over responsibility for validating contractor C/SCSC systems.

Regardless of whether a decision is made to transfer all or part of the responsibility for validating contractor C/SCSC systems to DCMC, we are already working with the Performance Measurement Joint Executive Group (PMJEG) to revise the Joint Implementation Guide (DLAH 8400.2). This revision will include procedures for developing a documented strategy for SARs to include the depth of review and specific criteria.

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your copy of the response).
- (X) Concur; however, weakness is not considered material (Rationale must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual Statement of Assurance.

ESTIMATED COMPLETION DATE: 1 JUL 93

RECOMMENDATION MONETARY BENEFITS: N/A
DLA COMMENTS: N/A
ESTIMATED REALIZATION DATE: N/A
AMOUNT REALIZED: N/A
DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200
PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
and Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:

Levin

LEONARD VINCENT
Rear Admiral, SC, USN
(Acquisition Management)

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION C.2.a: Recommend that the Commander, DCMC, revise the Contract Administration Manual (DLAM 8105.1), part 32.594, 'Periodic Reviews of Progress Payments,' to require justification for using an estimate-at-completion (EAC) for progress payments that is less than an EAC calculated using the cumulative cost performance index (CPIcum).

DLA COMMENTS: Partially concur.

Requiring justification when the EAC for progress payments is less than an EAC calculated using the CPIcum formula is an unnecessary administrative burden that will not guarantee more realistic estimates. Although the EAC for progress payment purposes should reflect the EAC calculated using C/SCSC data, legitimate differences in EACs do exist (such as use of management reserve, rebaselining, or inclusion of authorized but unpriced work).

However, we have taken action to ensure that DCMC Field Activities incorporate C/SCSC data into their progress payment review process. DCMC-D Letter No. 92-5, dated 21 August 1992 (see attachment), was issued requiring surveillance information gathered from all contractor management control systems (including C/SCSC systems) be used by the ACO to assess the reasonableness of contractor progress payment requests. Additionally, this guidance requires the ACO to take action when surveillance results indicate negative performance trends which may affect the EAC.

Additionally, DCMC will provide more detailed guidance on the appropriate use of C/SCSC data when administering progress payments. This guidance will address such topics as reconciling EACs for progress payment purposes and using C/SCSC information to assess physical progress (1 Apr 93).

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your copy of the response)
- (X) Concur; however, weakness is not considered material (Rationale must be documented and maintained with your copy of the response)
- () Concur; weakness is material and will be reported in the DLA Annual Statement of Assurance.

ESTIMATED COMPLETION DATE:

1 APR 93

RECOMMENDATION MONETARY BENEFITS: N/A
DLA COMMENTS: N/A
ESTIMATED REALIZATION DATE: N/A
AMOUNT REALIZED: N/A
DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200
PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
and Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:



LEONARD VINCENT
Rear Admiral, USN
(Acquisition Management)

W/ 1 attachment



DEFENSE LOGISTICS AGENCY
THE DEFENSE CONTRACT MANAGEMENT COMMAND
CAMERON STATION
ALEXANDRIA VIRGINIA 22304 8190



IN REPLY
REFER TO

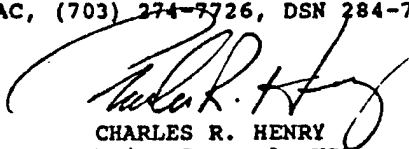
DCMC-E

21 AUG 1992

SUBJECT: DCMC-D Letter No. 92-5, Use of Key Data During the Progress Payment Review and Approval Process.

TO: Commanders of Defense Contract Management Districts
Commander, Defense Contract Management Command
International

1. A General Accounting Office review, conducted during 1991, found that Defense Contract Management Command procedures did not require the Administrative Contracting Officer (ACO) to consider monthly surveillance reports during the review and approval of progress payment requests.
2. The results of Contract Administration Office surveillance provides valuable insight into contractor performance through analysis of information gathered from the contractor management control systems (cost/schedule, production scheduling, quality, etc.), as well as on-site physical surveillance of contractor operations.
3. To ensure that this information is considered during the progress payment review process, Program and Technical Support personnel shall provide the ACO with copies of their monthly surveillance reports. These reports must clearly address any negative performance trends which may result in schedule slippage or increased Estimate at Completion. The ACO shall review the surveillance reports to determine the need to (1) perform an out-of-cycle progress payment review, (2) reassess the contractor risk category, and/or (3) remove the contract from the automated payment system and perform monthly progress payment reviews.
4. Please ensure this information is provided to your field personnel. Any questions regarding this policy may be directed to Mr. David Robertson, DCMC-EP, (703) 617-7200, DSN 667-7200 or Mr. Stephen Herlihy, DCMC-AC, (703) 274-7726, DSN 284-7726.


CHARLES R. HENRY
Major General, USA
Commander

Defense Logistics Agency (Continued)

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION C.2.b: Recommend that the Commander, DCMC, revise the
Contract Administration Manual (DLAM 8105.1), part 32 594, 'Periodic
Reviews of Progress Payments,' to require administrative contracting
officers to provide periodically EACs used for approving progress
payments to the program offices and to DCAA for review and comment.

DLA COMMENTS: Concur

Existing guidance will be clarified to ensure that PMOs and DCAA
auditors are aware of, and are provided the opportunity to comment on,
EACs being used for progress payment purposes (existing guidance
already requires DCMC field activities to routinely provide EAC and
progress payment information to PMOs).

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your
copy of the response).
- (X) Concur; however, weakness is not considered material (Rationale
must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual
Statement of Assurance.

ESTIMATED COMPLETION DATE: 1 FEB 93

RECOMMENDATION MONETARY BENEFITS: N/A
DLA COMMENTS: N/A
ESTIMATED REALIZATION DATE: N/A
AMOUNT REALIZED: N/A
DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200
PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
& Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:



LEONARD VINCENT
Rear Admiral, SC, USN
(Acquisition Management)

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION D.2: Recommend that the Commander, DCMC, issue guidance requiring assessment of the impact of deficiencies identified in contractor management system reviews on the cost and schedule control system and on the accuracy and reliability of the data from the cost and schedule control system as part of the system review performed. In addition to cost and schedule control systems, other contractor management systems include billing, purchasing, and estimating systems.

DLA COMMENTS: Concur.

The Joint Surveillance Guide (DLAH 8315.1) will be revised to require that DCMC surveillance assessments relate the impact of deficiencies identified in other contractor management systems (e.g., manufacturing, estimating, subcontract management) on the reliability of the contractor's C/SCSC system and the data it produces.

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your copy of the response).
- (X) Concur; however, weakness is not considered material (Rationale must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual Statement of Assurance.

ESTIMATED COMPLETION DATE: 1 APR 93

RECOMMENDATION MONETARY BENEFITS: N/A

DLA COMMENTS: N/A

ESTIMATED REALIZATION DATE: N/A

AMOUNT REALIZED: N/A

DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200

PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
& Technical Support, 3 Dec 92

DLA APPROVAL:

Richard Vincent
RICHARD VINCENT

TYPE OF REPORT: AUDIT

DATE OF POSITION: 23 DEC 1992

PURPOSE OF POSITION: INITIAL POSITION

AUDIT TITLE & NO: Effectiveness of DoD Use of Contractor Cost and
Schedule Control System Data on Major Defense
Acquisition Programs (Project No. 1AE-5006)

RECOMMENDATION F.3: Recommend that the Commander, DCMC, revise the
Contract Administration Manual to specifically include an assessment of
the contractor's past performance in implementing and maintaining an
effective cost and schedule control system as part of its technical
reviews and preaward surveys.

DLA COMMENTS: Concur.

Existing guidance will be revised to clarify that an evaluation of the
contractor's past performance in implementing and maintaining an
effective cost and schedule control system is included in the review
process.

INTERNAL MANAGEMENT CONTROL WEAKNESSES

- () Nonconcur (Rationale must be documented and maintained with your
copy of the response)
- (X) Concur; however, weakness is not considered material (Rationale
must be documented and maintained with your copy of the response).
- () Concur; weakness is material and will be reported in the DLA Annual
Statement of Assurance

ESTIMATED COMPLETION DATE: 1 APR 93

RECOMMENDATION MONETARY BENEFITS: N/A
DLA COMMENTS: N/A
ESTIMATED REALIZATION DATE: N/A
AMOUNT REALIZED: N/A
DATE REALIZED: N/A

ACTION OFFICER: David Robertson, DCMC-EP, 617-7200
PSE REVIEW/APPROVAL: Donald C. Bulloch, COL, Acting Director, Program
& Technical Support, DCMC-EO, 3 Dec 92

DLA APPROVAL:



LEONARD VINCENT
Rear Admiral, SC, USN
(Acquisition Management)

**Final Report
Reference**

DETAILED COMMENTS
DRAFT AUDIT REPORT ON THE EFFECTIVENESS OF DOD USE OF
CONTRACTOR COST AND SCHEDULE CONTROL SYSTEM DATA ON
MAJOR DEFENSE ACQUISITION PROGRAMS
(PROJECT No 1AE-5006)

1 Page 45, paragraph 1 a Although this recommendation is addressed to OUSD(A), it could have a significant impact on DCMC

'Consolidate the responsibility for validating contractor cost and schedule control systems under the Defense Contract Management Command, including cost and schedule control systems activities at shipbuilding contractors'

The following issues need to be resolved to ensure this recommendation presents an effective solution

a The extent of the responsibilities recommended for consolidation should be more clearly defined to specify whether they are to include the full scope of the Validation process (i.e., Implementation Visits, Readiness Assessments, Demonstration Reviews, Subsequent Application Review, etc.)

b The recommendation should also specify that the resources required to carry out the review process should be included in the consolidation (We recommend that a joint study of the resource requirements be completed prior to any consolidation)

2 The following additional changes are required:

a Page 9, second paragraph Change the sentence at the bottom of the page to read:

'The DCMC adopted the GAO recommendations and issued DCMC-D Letter No 92-5, dated 21 August 1992, requiring surveillance information gathered from all contractor management control systems (including C/SCSC systems) be used by the ACO to assess the reasonableness of contractor progress payment requests.'

b Page 14, third paragraph Change the sentence at the bottom of the page to read:

'We believe that the PMJEG should be chaired by the staff of the USD(A) and the Joint Implementation Guide revised to require full-time representation by HQ DCMC and HQ DCAA'

DCMC has supported the PMJEG with full-time representation since January 1991. The Chief, Program Support and Policies Division, Program and Technical Support is assigned as the full-time DCMC member of the PMJEG.

Revised

**Final Report
Reference**

Revised

Revised

c Page 23, third paragraph, second sentence See comment for page 28 below.

d Page 27, second paragraph Delete the second sentence

The 'separation of duties' cited in the audit report does not apply to the program management-contract administration team and is contrary to the relationship that should exist between program management and DCMC

e Page 28, third paragraph. Delete the second, third and fifth sentences

The report incorrectly asserts that SUPSHIP contract administration functions are going to be consolidated under DCMC At this time, there are no plans to consolidate SUPSHIP CAS under DCMC

However, Implementing jointly developed (DCMC and SUPSHIP) policy and guidance concerning C/SCSC systems would help achieve consistency and standardization

f Page 69, third paragraph The second sentence does not adequately address the DCMC's response to the GAO's recommendations and should be revised as follows:

"In addition, DCMC issued revised guidance requiring surveillance information gathered from all contractor management control systems (including C/SCSC systems) be used by the ACO to assess the reasonableness of progress payments Additionally, this guidance requires the ACO to take action when surveillance results indicate negative performance trends which may effect the EAC "

g Page 73, second paragraph. The first sentence does not accurately describe the purpose for contractor performance measurement systems and should be revised as follows: :

"The C/SCSC can provide CAOs with accurate data to monitor the progress on assigned contracts Reliable C/SCSC information can provide CAOs with an adequate basis assessing the appropriateness of progress payments Using C/SCSC data to evaluate contractor EACs for progress payment purposes is consistent with the DoD Manual 5000 2-M"

h Page 75, recommendation C 2.a.. We believe that requiring justification when the EAC for progress payments is less than an EAC calculated using the CPIcum formula is a superficial approach that will not guarantee more realistic estimates. To effectively address weaknesses in the use of C/SCSC data in progress payment administration, the recommendation should be revised as follows:

**Final Report
Reference**

'Provide detailed guidance on the appropriate use of C/SCSC data when administering progress payments. This guidance should address such topics reconciling EACs for progress payment purposes and using C/SCSC information to assess physical progress.'

1 Page 85, second paragraph Delete the third sentence

The 'inherent conflict of program management and contract administration oversight' cited by the auditor is a false assumption. There are many cases where program managers and contract administration personnel work effectively together to ensure C/SCSC systems are properly validated and maintained. The situation at Newport News appears to have been a management or discipline problem.

2 Page 89-90, last two paragraphs of the conclusion See comment in paragraph 1 above

3 The following are editorial comments:

a Page 2, footnote 1 The correct cost performance index is the ratio of the budgeted cost of work performed to the actual cost of work performed ($CPI = BCWP/ACWP$)

b Page 67 and 75 DCMC's Contract Administration Manual is DLAM 8105 1 not 8105 7

Revised

Revised

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INTERNET DOCUMENT INFORMATION FORM

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B. DATE Report Downloaded From the Internet: 05/12/99

C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #): OAIG-AUD (ATTN: AFTS Audit Suggestions)
Inspector General, Department of Defense
400 Army Navy Drive (Room 801)
Arlington, VA 22202-2884

D. Currently Applicable Classification Level: Unclassified

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