Audit Report

OFFICE OF THE INSPECTOR GENERAL

RISK MANAGEMENT PROGRAMS FOR DEFENSE ACQUISITION SYSTEMS

Report No. 96-162 June 14, 1996

Department of Defense

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Acronyms

CSSCS	Combat Service Support Control System
FDS	Fixed Distributed System
GAO	General Accounting Office
GRP	Guidance Replacement Program
OSD	Office of the Secretary of Defense
RDT&E	Research, Development, Testing, and Evaluation
SCAMP	Single Channel Anti-Jam Man-Portable Terminal

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

June 14, 1996

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY

SUBJECT: Audit Report on the Audit of Risk Management Programs for Defense Acquisition Systems (Report No. 96-162)

We are providing this audit report for information and use. We considered management comments on a draft of this report in preparing the final report.

Comments on the draft of this report conformed to the requirements of DoD Directive 7650.3 and left no unresolved issues. Therefore, no additional comments are required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. John Meling, Audit Program Director, at (703) 604-9091 (DSN 664-9091) or Mr. David Wyte, Audit Project Manager, at (703) 604-9027 (DSN 664-9027). See Appendix G for the report distribution. The audit team members are listed inside the back cover.

Robert J. Lieberman
Assistant Inspector General
For Auditing

Office of the Inspector General, DoD

Report No. 96-162 **June 14, 1996**
(Project No. 5AE-0062)

Risk Management Programs for Defense Acquisition Systems

Executive Summary

Introduction. All acquisition programs are subject to risks. Risk management requires a systematic approach to problem solving. Program managers are responsible for ensuring risk management programs are effective for DoD systems acquisitions. By identifying, analyzing, and managing risks, program managers can have a significant impact on program cost, schedule, and performance. The March 15, 1996, updates to DoD Directive 5000.1 and DoD Instruction 5000.2 have significantly increased emphasis on the importance of risk management in managing Defense acquisition systems.

Objectives. The audit objective was to evaluate the effectiveness of risk management programs for Defense acquisition systems. Specifically, we determined whether DoD risk management policies and procedures for Defense acquisition systems were effectively implemented and what impact risk management programs had on reducing program risks and costs. We also reviewed management controls as they applied to the audit objectives.

Audit Results. Risk management plans developed and implemented for the five Defense acquisition systems reviewed were incomplete and noncompliant with the DoD 5000 series of documents. As a result, program managers were not using risk management plans to systematically manage and reduce program cost, schedule, and performance risks. The DoD should make better use of risk management software available from both commercial and Government sources.

The recommendation in this report, if implemented, will assist program managers in developing valid and effective risk abatement plans. Through risk management plans and analytical tools, program managers can provide for continuous risk assessments to most effectively manage identified program cost, schedule, and performance risks.

Summary of Recommendation. We recommend that the Under Secretary of Defense for Acquisition and Technology task the Defense Systems Management College to systematically review and catalogue available commercial and Government risk management systems' applications and analytical tools in the Defense Acquisition Deskbook for DoD program managers to adapt and use.

Management Comments. We received comments on a draft of this report from the Director, Test, Systems Engineering, and Evaluation. He concurred with the intent of the recommendation and commented on statements in the Finding. Part I contains a summary of the management comments and Part III contains the complete text of management comments.

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Part I - Audit Results

Audit Background

All acquisition programs from inception to completion are subject to risks. Due to the complexity of current weapon systems, risk management requires a systematic approach to problem solving. Program managers for Defense acquisition systems are responsible for ensuring risk management programs are effective. By identifying, analyzing, and managing risks, they can have a significant impact on program cost, schedule, and performance. According to the March 15, 1996 update of the DoD 5000 series of directives, program managers are to use risk management programs to identify and track risk drivers, define risk abatement plans, and provide continuous risk assessment through each acquisition phase to determine how risks have changed. Program managers are also encouraged to accept larger risks by maximizing return on investments through trade-off decisions effecting program cost, schedule, and performance.

The Under Secretary of Defense for Acquisition and Technology prescribes overall policy for acquisition risk management programs. The milestone decision authority for each major Defense system is responsible for overseeing the overall management of the acquisitions, including implementation of risk management programs.

Audit Objectives

The primary audit objective was to evaluate the effectiveness of risk management programs for Defense acquisition systems. Specifically, we determined whether DoD risk management policies and procedures for Defense acquisition systems were effectively implemented and what impact risk management programs had on reducing program risks and costs. We also reviewed management controls as they applied to the audit objectives. See Appendix A for the audit scope and methodology. Prior audit coverage related to the audit objectives is in Appendix B. Descriptions of the five Defense acquisition systems reviewed are in Appendix C.

Risk Management Plans

Program managers for the five Defense acquisition systems reviewed did not implement risk management plans that were compliant with the DoD 5000 series of directives. This condition was caused by program managers not applying the analytical tools in DoD Manual 4245.7-M, "Transition from Development to Production," for identifying, assessing, and mitigating risks and the Under Secretary of Defense for Acquisition and Technology not identifying and cataloging risk management systems' applications and tools for program managers to adapt and use. As a result, program managers were not effectively using risk management plans to systematically manage and reduce program cost, schedule, and performance risks.

Background

Risk management plans are plans of action to reduce or eliminate risks affecting program cost, schedule, and performance for Defense acquisition systems. Before March 15, 1996, DoD Directive 5000.1, part 1, "Defense Acquisition," February 23, 1991, and DoD Instruction 5000.2, part 5, section B, "Defense Acquisition Management Policies and Procedures," February 23, 1991, provided risk management guidance for Defense program managers. Changes reflected in the March 15, 1996, update of the DoD 5000 series of documents increased the emphasis on the importance of risk management. The changes reflect the Department's acquisition reform efforts to empower acquisition personnel to manage risks through continuous program risk assessment rather than to avoid risks.

DoD Directive 5000.1. DoD Directive 5000.1 requires that program risks and risk management plans be explicitly assessed at each milestone decision point before approval is granted to proceed into the next acquisition phase. Risks identified to threat, technology, design and engineering, support, manufacturing, cost, schedule, and risks inherent with concurrent program development can effect program results.

DoD Instruction 5000.2. DoD Instruction 5000.2 required program managers for Defense acquisition systems to establish risk management programs. Program managers, with industry and user participation, were to establish risk management programs that will identify and control critical risk functions effecting program cost, schedule, and performance to acceptable levels. With the aid of technical performance "templates" such as those identified in DoD

Manual 4245.7-M, "Transition from Development to Production" September 1985, program managers were to develop risk management programs that offer risk abatement techniques to support sound program management decisions. Specifically, risk management programs are to:

o structure and document risk assessment and analysis process, with user participation, to identify risks early in the program;

o clearly define criteria for acquisition activities leading to the risk assessment events, such as the preliminary and the critical design reviews;

o identify and track risk drivers, define risk abatement plans, and provide continuous risk assessment throughout each acquisition phase to determine how risks have changed; and

o define evaluation criteria for assessing high, moderate, and low ratings of risk associated with each subsystem and the overall system.

The March 15, 1996, update of the 5000 series of documents did not change the risk management guidance.

DoD Manual 4245.7-M. DoD Manual 4245.7-M provides program managers an analytical tool for developing risk abatement plans. The manual provides program managers with templates for analyzing potential program and technical risks associated with eight critical acquisition functions: funding, design, testing, production, transition planning, facilities and capital investment, logistics, and management. Depending on the critical acquisition function, the Manual provides program managers from 1 to 14 templates to identify areas of risk, outline risk abatement plans, and identify timelines for critical path acquisition activities. Appendix D lists the risk assessment templates provided for the eight critical acquisition functions. For example, the Manual provides six risk assessment templates for the logistics critical acquisition function. The templates address the acquisition's logistics support analysis, manpower and personnel, support and test equipment, training and material equipment, spares, and technical manuals.

DoD Manual 4245.7-M risk management guidance with its risk management templates will be included in the Defense Acquisition Deskbook for use by program managers.

Risk Management Plans Developed

Risk management plans were developed for the Combat Service Support Control System (CSSCS), Fixed Distributed System (FDS), Hunter Unmanned Aerial Vehicle-Short Range Program (Hunter Program), Minuteman III Guidance Replacement Program (GRP), and Single Channel Anti-Jam Man-Portable

Terminal (SCAMP) acquisition systems. However, those plans did not adequately address risks associated with the eight critical acquisition functions identified in DoD Manual 4245.7-M. In addition, those plans were not linked to project cost, schedule, and performance measurement systems for tracking, adjusting, and validating risk abatement plans. Program managers and prime contractors developed plans that also understated risks by overestimating expected results from risk abatement plans and failing to recognize development and integration risks associated with the use of nondevelopmental items. Further, plans were not continually updated as systems progressed through acquisition phases.

Critical Acquisition Functions Identified in DoD Manual 4245.7-M. Not all critical acquisition functions identified in DoD Manual 4245.7-M were fully examined in the risk management plans because the plans were not collaborative efforts between program offices, prime contractors, and users. Specifically, the SCAMP and Hunter Program Offices developed their risk management plans without contractor participation. The prime contractors for the CSSCS, FDS, and GRP Programs developed the risk management plans without program office participation. Further, none of the plans indicated user involvement in the plan preparation.

Program Office Plans. The Hunter Program Office identified and assessed program risks using the risk templates for the eight critical acquisition functions in DoD Manual 4245.7-M. The SCAMP Program Office also identified and assessed program risks but did not apply those templates. The reasonableness of SCAMP Program Office's risk management assessments, however, could not be evaluated because documentation did not exist to support its assessments.

Contractor Plans. With the exception of the FDS system acquisition, only design or production acquisition function risks associated with contractual line item deliverables were addressed in contractor-developed risk management plans. The prime contractor for the FDS Program Office identified and assessed program risks using those templates for all eight critical acquisition functions. The GRP prime contractor only addressed one of the nine templates (manufacturing plan) provided for the production critical acquisition function in preparing its risk management plan. The CSSCS prime contractor addressed three of the fourteen templates (design process, design requirements and software design) provided for the design critical acquisition function in preparing its risk management plan.

Appendix E summarizes the extent that critical acquisition functions were addressed in risk management plans developed for the five Defense acquisition systems reviewed.

Applying Template Results. If properly applied, the risk templates identified in DoD Manual 4245.7-M provide a sound basis for assessing overall program risks for the critical functions in the acquisition process. However, results from template risk assessments were not linked to the program's and contractor's work breakdown structures. Work breakdown structures define project configurations by combining hardware, software, services, and data into components, subassemblies, and assemblies. To identify and track the effect of risk abatement plans on risk drivers, links to the program work breakdown structures are needed to determine the effectiveness of risk management abatement plans on program cost, schedule, and performance.

Risk Assessments. Program managers and contractors estimated program risks as low when risk abatement plans were identified and when nondevelopmental items were used in the system acquisition strategies. While we agree that program risks are usually lower when risk abatement plans exist to reduce or avoid potential problems, risks only disappear after the effectiveness of risk abatement plans have been demonstrated. Further, the use of nondevelopmental items often present system integration challenges due to configuration modifications and changed operating environments, which can significantly increase the risk of meeting cost, schedule, and even performance requirements.

Updating Risk Management Plans. None of the risk management plans developed for the five acquisition programs were reviewed and updated during milestone phases. By not updating the risk management plans, program managers were not using the plans to track the effectiveness of identified risk abatement and avoidance efforts and to implement other risk abatement plans for newly identified program cost, schedule, and performance risks.

Effectiveness of Risk Management Programs

The effectiveness of risk management programs on reducing program risk and costs could not be determined for the five Defense acquisition systems reviewed. The program managers did not obtain data base systems' applications to systematically measure results from risk abatement plans and did not use data base analytical tools to test and validate risk abatement plans as their programs evolved.

Beyond reacting to results from cost, schedule, and performance reports, only the CSSCS program office used data base systems' applications to extract, track, and modify identified risk abatement plans. Further, without knowing full ranges of consequences by testing and evaluating plausible assumptions, program managers had more difficulty identifying opportunities to avoid and reduce potential problems.

Data Base Systems' Applications and Analytical Tools

Data base systems' applications and analytical tools exist to track, adjust, and validate program risk abatement plans. Through these applications and tools, program managers can link the DoD Manual 4245.7-M templates or similar risk management analytical tools with the update of the 5000 series of documents requirements for controlling cost, schedule, and performance risks. Although their value to program success depends on the quality of the information placed in them, analytical tools also can be applied with data base systems' applications to manage and validate program risk abatement plans.

Data Base Systems' Applications. Several commercial vendors now market project management data base systems' applications that program managers can use to manage program risks. Applied successfully by numerous public utilities, research and development facilities, Defense contractors, and other Government and industrial entities, the data base applications use work breakdown structures to extract, track, project, and modify identified risk-related work packages. In addition, project baselines can be adjusted if requirements and risk abatement assumptions change.

Analytical Tools. The Defense Systems Management College has developed the "Performance Analyzer," an analytical tool for analyzing contractor performance measurement data. The Performance Analyzer software compares actual program results with planned work structure breakdown packages and forecasts expected completions for cost and schedule. Several commercial vendors also have developed analytical tools for use in risk management. The analytical tools allow users to tailor and validate their risk abatement plans. By testing various risk abatement assumptions, program managers can forecast ranges of expected results for program cost, schedule, and performance.

Cost and Supportability Goals

The Under Secretary of Defense for Acquisition and Technology established the Cost as an Independent Variable Working Group to address approaches and measures to reduce life-cycle costs. The Working Group recommended that costs, schedules, and performances for acquisition systems be equally weighted. Recognizing that the DoD has traditionally managed performance risks, the Working Group realized that managing toward cost and supportability goals will require program managers to make trade-off determinations by managing risks to produce systems that fully provide military capability. As a result, the Under Secretary tasked the Director, Test, Systems Engineering and Evaluation, in December 1995 to review management practices and techniques to determine whether new approaches were needed to improve risk management for Defense acquisition systems. In March 1996, a working group was formed to review risk management practices and techniques.

Conclusion

The DoD acquisition community needs to improve its efforts to develop and implement effective risk management programs to manage cost, schedule, and performance risks. This area is of continuing concern as the General Accounting Office initially reported this condition on the quality of risk management programs in GAO Report No. PEMD-865 (OSD Case No. 535034), "Technical Risk Assessment: the Status of Current DoD Efforts," April 3, 1986. As recognized by the Under Secretary of Defense for Acquisition and Technology and identified by prior audits and reviews, the quality of risk management programs is a recurring issue for management of Defense acquisition systems. To fully implement the Department's acquisition reform initiatives and comply with the emphasis placed on risk identification and management, program managers must improve their use of risk management methodologies, techniques, and tools. Commercial off-the-shelf data base systems' applications and analytical tools exist to assist program managers in implementing risk management programs. Because the newly revised DoD acquisition guidance emphasizes the need for program managers to accept larger risks to achieve breakthroughs in cost and performance, these off-the-shelf system resources need to be systematically reviewed and catalogued in the Acquisition Deskbook for DoD program managers to adapt and use.

Recommendation, Management Comments, and Audit Response

We recommend that the Under Secretary of Defense for Acquisition and Technology task the Defense Systems Management College to systematically review and catalogue available off-the-shelf commercial and Government-developed risk management systems' applications and tools in the Defense Acquisition Deskbook for DoD program managers to adapt and use.

Director, Test, Systems Engineering, and Evaluation, Comments. The Director, Test, Systems Engineering, and Evaluation, concurred with the intent of the recommendation. As mentioned in the finding, he stated that he had assembled a Working Group to review the current risk management practices and techniques to determine whether new approaches are needed to improve risk management. At the completion of the review, he stated that the DoD 5000 series of documents, including the Defense Acquisition Deskbook, the Defense Acquisition University curriculum, and other Service acquisition course materials, would be updated to reflect the Department's latest policy and procedures. The Under Secretary of Defense for Acquisition and Technology is to be provided the preliminary results of the review by June 30, 1996.

We also received management comments on the finding from the offices of the Hunter Unmanned Aerial Vehicle Short Range Program and Minuteman III Guidance Replacement Program. Although not included in this report, we modified the finding, as appropriate, in response to the management comments received.

Audit Response. The comments of the Director, Test, Systems Engineering, and Evaluation, are responsive to the intent of the audit recommendation. The complete text of management comments is in Part III.

Part II - Additional Information

Appendix A. Scope and Methodology

Scope

We performed this program results audit from August 1995 through February 1996 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. Accordingly, we included tests of management controls as considered necessary. We reviewed acquisition data from April 1989 through January 1996 to accomplish our audit objectives. We reviewed the effectiveness of risk management strategies on reducing program risks and costs. To accomplish this objective, we visited the Office of the Under Secretary of Defense for Acquisition and Technology, the Defense System Management College, and the program offices and contractors for the programs reviewed. Appendix F provides a complete listing of the organizations visited or contacted.

We selected five Defense acquisition systems for review to evaluate the effectiveness of their risk management programs for managing and reducing program cost, schedule, and performance risks. The acquisitions reviewed were:

- o DoD: Hunter Unmanned Aerial Vehicle-Short Range Program
- o the Army: Single Channel Anti-Jam Man Portable Terminal and

  Combat Service Support Control System
- o the Navy: Fixed Distributed System
- o the Air Force: Minuteman III Guidance Replacement Program

Methodology

We reviewed the program offices' risk management plans and programs, acquisition strategy reports, cost estimates, cost and operational effectiveness analyses, Cost Analysis Improvement Group reports, Defense acquisition executive summaries, integrated program summaries, milestone acquisition decision memorandums, program deviation reports, cost performance reports, test and evaluation master plans, source selection data, and other documents as deemed appropriate.

We also obtained technical direction concerning risk management program requirements from personnel at the Office of the Under Secretary of Defense for Acquisition and Technology, the Defense System Management College, and the Defense Science Board. We did not apply statistical sampling or rely on computer-processed data to support the finding and recommendation in this audit report.

Management Control Program

Requirement for Management Control Review. DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, requires DoD managers to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of those controls.

Scope of Review of Management Control Program. We limited our review because of relevant coverage in Inspector General, DoD, Report No. 96-028, "Implementation of the DoD Management Control Program for Major Defense Acquisition Programs," November 28, 1995. The report discussed the effectiveness of the management control program that the Defense Acquisition Executive and the Component Acquisition Executives used for major Defense acquisition programs. The report concluded that the acquisition community had not effectively integrated DoD Management Control Program requirements into its management assessment and reporting processes. As a result of the report recommendations, the Under Secretary of Defense for Acquisition and Technology integrated DoD Directive 5010.38 requirements into the March 15, 1996, revision to DoD Directive 5000.1, "Defense Acquisition," and DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPS) and Major Automated Information System (MAIS) Acquisition Programs." Acquisition managers are now to use program cost, schedule, and performance parameters as control objectives to implement the DoD Directive 5010.38 requirements. The managers are to identify material weaknesses through deviations from approved acquisition program baselines and exit criteria in the Defense Acquisition Executive Summary report. Consequently, we limited our review to management controls over the development and implementation of risk management programs for the five Defense acquisition systems reviewed.

Adequacy of Management Controls. We did not identify any material management control weaknesses as defined by DoD Directive 5010.38.

Appendix B. Summary of Prior Audits and Other Reviews

During the past 5 years, the General Accounting Office (GAO) and the Office of the Inspector General, DoD, issued four reports that discussed aspects of risk management programs for Defense acquisition systems. In addition, a 1986 GAO report discussed the quality of risk assessments that program offices for Defense acquisition systems made.

General Accounting Office

GAO Report No. NSIAD-94-255BR (Office of the Secretary of Defense [OSD] Case No. 9785), "1995 Defense Budget: Potential Reductions and Rescissions in RDT&E [Research, Development, Testing, and Evaluation] and Procurement Programs," September 8, 1994, examined the DoD FY 1995 budget request and prior years' appropriations for selected programs. The GAO suggested deferring the Air Force Joint Primary Aircraft Training System production until the design was more firm to reduce program risk while still allowing development and testing as scheduled. The report made no recommendations.

GAO Report No. NSIAD-91-280 (OSD Case No. 8733), "Tactical Missile Acquisition: Understated Technical Risk Leading to Cost and Schedule Overruns," September 17, 1991, recommended that DoD ensure the Defense research and engineering directorate independently review program office's technical risk assessments. DoD concurred and indicated that technical risk assessments were institutionalized within the DoD and were an integral part of milestone documentation.

GAO Report No. IMTEC-91-030 (OSD Case No. 8640), "Submarine Combat System: BSY-2 Development Risks Must Be Addressed and Production Schedule Reassessed," August 22, 1991, recommended that the Navy assess the BSY-2 submarine risks, determine their impact, adjust the development approach, and report the results to Congress. The Navy did not concur with the recommendation, but stated that it would constantly monitor the risk areas to ensure the BSY-2 system meets baseline thresholds.

GAO Report No. PEMD-865 (OSD Case No. 535034), "Technical Risk Assessment: the Status of Current DoD Efforts," April 3, 1986, found DoD did not clearly define technical risk and had insufficient direction for various analytical approaches. GAO also found technical risk programs had not met minimal standards in most of 25 program offices reviewed. In addition, essential information on assessment procedures and results was often not available to program managers or reviewers. The report recommended that the Secretary of Defense:

- o define technical risk and categories for rating risk;
- o require risk efforts to focus on technical risk and be repeated early and late in each acquisition phase;
- o require program offices to document risk assessment procedures and results;
- o establish guidelines for rating risks, scope, data collection, and assessment;
- o require technical risk information to include format, scope, data collection, sources of risk information, and assessment approaches; and
- o provide more focused training in technical risk assessment.

DoD concurred fully or partially with all recommendations except the recommendation pertaining to making risk assessment procedures available for review. Our current audit showed that DoD had yet to fully correct the conditions identified in this GAO report.

Inspector General, DoD

Inspector General Report No. 94-101, "Program Management Organization for the Upper Tier Theater Missile Defense System," May 16, 1994, stated that DoD and contractor organizations could be more effectively organized to reduce program developmental and systems integration risk for the Theater High Altitude Area Defense missile system and the ground-based radar. The report recommended a merger of the Theater High Altitude Area Defense and Ground-Based Radar Project Offices and an Engineering and Manufacturing Development contract for a single prime contractor. Management concurred with the recommendations. The Theater High Altitude Area Defense and Ground-Based Radar Project Offices became a single project office effective June 30, 1995.

Appendix C. Programs Reviewed

Combat Service Support Control System Program. The Army manages the CSSCS program. CSSCS is a computer software system designed to assist commanders and their staffs in processing and executing large volumes of logistical, personnel, and medical information. The system consists of transportable and lightweight computer units, common Army operating environment software, and CSSCS-unique software. The Army structured the software development to evolve incrementally over five versions, each building on the capabilities of the predecessor. TRW, Data Technologies Division, is the prime contractor for this systems acquisition. Production and fielding of the first full system is scheduled for FY 1998. The RDT&E and procurement cost baseline for the CSSCS is $263.8 million (then-year dollars).

Fixed Distributed System Program. The Navy manages the FDS program. FDS is a passive surveillance system for detecting submarines. Using hydrophones placed on the sea floor, the FDS transmits acoustic data to a shore station for processing and analyzing. American Telephone and Telegraph Federal Systems Advanced Technology and Loral Federal Systems are the prime contractors for this systems acquisition.

The program's Engineering and Manufacturing Development acquisition phase was 90 percent complete and is expected to conclude in September 1996. Production of the FDS has been cancelled due to a change in threat. Total acquisition cost was proposed in excess of $9 billion (then-year dollars), but has been reduced to $1.2 billion (then-year dollars) as a result of production cancellation.

Hunter Unmanned Aerial Vehicle-Short Range Program. The Army executes the DoD joint-managed Hunter Program. The Hunter is a short range, small fixed-wing aircraft remotely piloted from a ground control station. The Hunter's primary mission is to relay near-real-time video telemetry information to battlefield commanders from target areas up to 150 kilometers beyond the forward line of our own troops. The Hunter provides battlefield commanders reconnaissance, surveillance, and target acquisition intelligence an average of 16 hours for every 24 hours. TRW, Avionics and Surveillance Group, is the prime contractor.

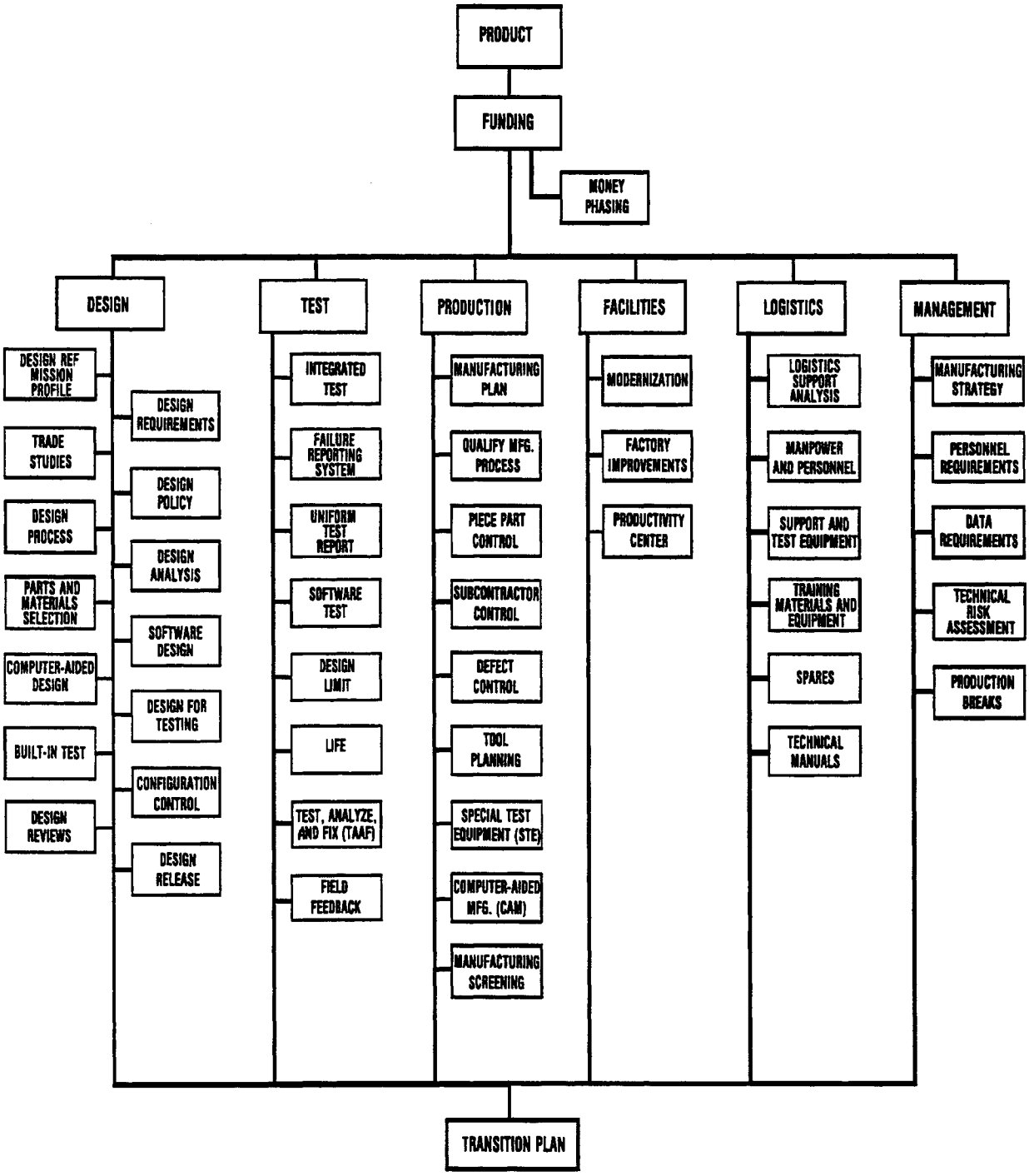
The Under Secretary of Defense for Acquisition and Technology cancelled the $2.5 billion (RDT&E, Procurement and Military Construction, then-year dollars) program on January 31, 1996. Before cancellation, seven systems were acquired at a cost of $169.7 million.

Minuteman III Guidance Replacement Program. The Air Force manages the GRP program. The GRP replaces guidance systems for the Minuteman III missile and converts the software from "FORTRAN" to "Ada." This upgrade will extend the life of the missile beyond FY 2020. Also, the GRP will improve system fault detection and isolation and maintain the option to configure the missile with a different re-entry vehicle and an advanced inertial measurement unit. Rockwell International Autonetics Strategic Systems Division is the prime contractor for hardware and software integration, and Honeywell Space and Strategic Systems is the primary subcontractor for computer hardware and software. The RDT&E and Procurement cost baseline for the GRP is $1.84 billion (then-year dollars).

Single Channel Anti-Jam Man-Portable Terminal Program. The Army manages the SCAMP program. SCAMP is a hand-carried, battery-powered extremely high frequency satellite communications terminal used with the Military Strategic/Tactical Relay system. Operation of the terminal enables commanders in chief and other high priority users to transmit secure voice and data traffic and receive command and control voice and data traffic from a base station. Lockheed Missiles and Space Company, Space Systems Division, and Martin Marietta, Communication Systems, were each awarded a cost-plus-fixed-fee prime contract.

The Engineering Manufacturing Development acquisition phase contracts were terminated (Lockheed in September 1993 and Martin Marietta in November 1994) due to escalating cost growth and program funding cuts. Despite contract terminations, a fixed-price, full-scale SCAMP production contract will be awarded in FY 1996. The RDT&E and Procurement cost baseline for the SCAMP is $220.2 million (then-year dollars).

Appendix D. List of Templates for Critical Acquisition Functions



Mfg. Manufacturing
Ref. Reference

Appendix E. Summary of Critical Acquisition Functions Addressed in Risk Management Plans

Acquisition Functions	CSSCS	FDS	GRP	Hunter	SCAMP
Design	partially	yes	no	yes	partially
Facilities	no	yes	no	partially	no
Funding	no	yes	no	yes	no
Logistics	no	yes	no	yes	partially
Management	no	yes	no	yes	partially
Production	no	yes	partially	partially	no
Test	no	yes	no	yes	no
Transition Plan	no	yes	no	yes	no

Appendix F. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology, Washington, DC
  Acquisition Program Integration, Washington, DC
  Strategic and Tactical Systems, Washington, DC

Department of the Army

Assistant Secretary of the Army (Research, Development and Acquisition), Washington, DC
Program Executive Office, Command, Control, and Communications Systems, Fort Monmouth, NJ
  Military Strategic/Tactical Relay System Program Office, Fort Monmouth, NJ
  Strategic and Theater Command and Control Systems Program Office, Fort Belvoir, VA
Army Audit Agency, Fort Monmouth, NJ

Departments of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller), Washington, DC
Undersea Surveillance Program Director, Arlington, VA
  Fixed Distributed System Program Office, Arlington, VA
Program Executive Office, Cruise Missiles and Unmanned Aerial Vehicles, Arlington, VA
  Hunter Unmanned Aerial Vehicle - Short Range Program Office, Huntsville, AL

Departments of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller), Washington, DC
Program Executive Office for Bombers, Missiles and Trainers, Washington, DC
  Silo Based Intercontinental Ballistic Missile System Program Office, Hill Air Force Base, UT

Other Defense Organizations

Director, Defense Systems Management College, Fort Belvoir, VA

Contractors

American Telephone and Telegraph Advanced Technology Systems, Greensboro, NC
Loral Federal Systems, Manassas, VA

Appendix G. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Acquisition Reform)
  Commandant, Defense Systems Management College
  Director, Defense Logistics Studies Information Exchange
  Director, Test, Systems Engineering, and Evaluation
  President, Defense Acquisition University
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Auditor General, Department of the Army
Program Executive Office Command, Control, and Communications Systems
  Program Manager, Military Strategic/Tactical Relay System
  Program Manager, Strategic and Theater Command and Control Systems

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Program Executive Office for Cruise Missiles and Unmanned Aerial Vehicles
  Program Manager, Hunter Unmanned Aerial Vehicle-Short Range
Commander, Space and Naval Warfare Systems Command
  Program Manager, Undersea Surveillance
    Program Manager, Fixed Distributed System
Auditor General, Department of the Navy
Department of the Navy, Dudley Knox Library, Naval Postgraduate School

Department of the Air Force

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  Program Manager, Silo Based Intercontinental Ballistic Missile System
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations

Office of Management and Budget
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  House Committee on Government Reform and Oversight
  House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
  House Committee on National Security

Part III - Management Comments

Director, Test, Systems Engineering, and Evaluation, Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE

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ACQUISITION AND TECHNOLOGY

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MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: The Department of Defense Inspector General Audit Report on Risk Management

This is the Under Secretary of Defense for Acquisition and Technology, USD(A&T), response to the Department of Defense Inspector General (DoD-IG) draft report 5AE-006, "Audit Report of Risk Management Programs for Defense Acquisition Systems." The USD(A&T) partially concurs with the findings of the DoD-IG report. The report states that all five (5) programs audited: DoD's Hunter Unmanned Aerial Vehicle-Short Range Program (Hunter Program); the Army's Single Channel Anti-Jam Man Portable Terminal (SCAMP); Combat Service Support Control System (CSSCS); the Navy's Fixed Distributed System (FDS); and the Air Force's Minuteman III Guidance Replacement Program (GRP), did not implement risk management plans that are compliant with the DoD 5000 series documents. The audit report contends that this noncompliance was caused by program managers not applying the analytical tools in DoD Manual 4245.7-M, Transition from Development to Production, September 1995.

We agree that these programs did not all apply the analytical tools in DoD Manual 4245.7-M as part of their risk management efforts. However, it should be noted that the DoD Manual 4245.7-M was only intended to be a guide, not a mandatory requirement, for programs to use in establishing risk management plans. Further, since each program has a risk management plan in place, we believe they are compliant with DoD 5000 series documents.

We would also point out that managing risks in our systems is an exhaustive and iterative process. No set of tools and software application packages can guarantee an effective risk management program. Per the current Acquisition Reform Initiative, all programs, new and old, are required to implement the Integrated Product and Process Development concept in all phases of their acquisition program. This initiative includes putting together risk management plans that are based on a well integrated approach in all programs. Integrated risk management is not an independent and separate entity from acquisition programs. It is an integral part of the overall acquisition program management. How well a program is managed to meet its

cost, schedule and performance requirements is indicative of how well inherent program risks are managed via an integrated approach.

We concur with the intent of the IG recommendation that USD(A&T) take steps to include relevant material on risk in the upcoming Defense Acquisition deskbook for DoD Program Managers to adapt and use. However, as the Office of Primary Responsibility in DoD, I have developed and am implementing a much more ambitious plan to address concerns very similar to those of the IG. Specifically, at the direction of USD(A&T), I have assembled a Working Group with the Services, DSMC, DoD agencies, DoD-IG, industry, and key Office of the Secretary of Defense staff to review the current risk management practices and techniques and determine whether new approaches are needed to improve risk management. As a result, the DoD 5000 series documents, including the deskbook, Defense Acquisition University curriculum and other Service acquisition course materials will be updated to reflect the Department's latest policy and procedures. The preliminary results of the study will be given to USD(A&T) in June 1996.

If you have any questions, please contact my action officer, Mr. Burhan Adam, (703) 681-4534, (e-mail) Adamby@acq.osd.mil.

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