

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

**ACQUISITION OF THE JOINT TACTICAL
INFORMATION DISTRIBUTION SYSTEM**

Report No. 94-059

March 18, 1994

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Acronyms

BMDO	Ballistic Missile Defense Organization
DFARS	Defense Federal Acquisition Regulation Supplement
DOT&E	Director, Operational Test and Evaluation
FYDP	Future Years Defense Program
JTIDS	Joint Tactical Information Distribution System
MOEs	Measures of Operational Effectiveness
OPTEVFOR	Operational Test and Evaluation Force
OPEVAL	Operational Evaluation
OT	Operational Test
TEMP	Test and Evaluation Master Plan
THAAD	Theater High Altitude Air Defense
USD(A)	Under Secretary of Defense for Acquisition
USD(A&T)	Under Secretary of Defense for Acquisition and Technology



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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March 18, 1994

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND,
CONTROL, COMMUNICATIONS AND
INTELLIGENCE)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, OPERATIONAL TEST AND EVALUATION
DIRECTOR, BALLISTIC MISSILE DEFENSE
ORGANIZATION
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Acquisition of the Joint Tactical Information
Distribution System (Report No. 94-059)

We are providing this final report for your review and comments. It discusses opportunities for program improvement on issues relating to system requirements, testing, component breakout, and cost estimating and analysis. Comments on a draft of this report were considered in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be promptly resolved. Therefore, we request that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence); the Director, Operational Test and Evaluation; the Assistant Deputy Chief of Theater Missile Defense, Ballistic Defense Missile Organization; and the Army Deputy Chief of Staff for Operations and Plans provide comments on the unresolved recommendations by May 17, 1994.

We appreciate the courtesies extended to the audit staff. If you have any questions on this audit, please contact Mr. John Meling, Program Director, at (703) 614-3994 (DSN 224-3994) or Mr. Thomas Bartoszek, Project Manager, at (703) 693-0481 (DSN 223-0481). The audit team members are listed inside the back cover. Appendix H lists the distribution of this report.

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Assistant Inspector General
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Office of the Inspector General, DoD

Report No. 94-059
(Project No. 3AS-0010)

March 18, 1994

THE ACQUISITION OF THE JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM

EXECUTIVE SUMMARY

Introduction. The Joint Tactical Information Distribution System (JTIDS) Class 2 family of terminals began development in the early 1980s to improve combat capability in fighter aircraft, command and control centers, and surface air defense units by providing near real-time netted, jam-resistant, secure data, and voice communications in a tactical theater. The JTIDS's program has an estimated cost of about \$3.7 billion (then-year dollars) for 971 terminals.

Objectives. The audit objective was to evaluate the overall acquisition management of the JTIDS program. Specifically, the audit determined the adequacy of efforts to develop an economical and efficient system and to prepare the various JTIDS terminals for production and deployment.

Audit Results. The Air Force was taking sufficient management actions in correction of deficiencies, design maturity, contracting, second sourcing, and acquisition planning. However, our audit identified four conditions requiring additional management actions.

- o The JTIDS Joint Program Office did not plan to make a comprehensive component breakout review before the Class 2 and 2H terminal full-rate production decisions planned for early 1995. As a result, the Joint Program Office may miss an opportunity to save from \$30.3 million to \$42.6 million over the Future Years Defense Program (FYs 1994 through 1999) (Finding A).

- o The Defense Acquisition Board will not be provided objective Navy operational test results in support of the Class 2 and 2H terminal full-rate production decision. Therefore, the Defense Acquisition Board will not be able to make an informed decision concerning the readiness of the terminals for full-rate production (Finding B).

- o The Class 2M terminal production requirements were not fully funded as required in the Future Years Defense Program. As a result, production of weapon systems in the theater missile defense system program may be delayed (Finding C).

- o The Joint Program Office did not plan to perform a cost and operational effectiveness analysis before the Class 2 and 2H full-rate production and deployment decision planned for early 1995. Without a cost and operational effectiveness analysis, the Joint Program Office cannot adequately assess the potential for meeting long-term Military Departments' interoperability requirements through a complementary mix of JTIDS and alternative data distribution systems and judge the impact of reported JTIDS test results on program cost and mission operational effectiveness (Finding D).

Internal Controls. The internal controls applicable to the JTIDS program were deemed to be effective in that no material control weaknesses were found during the audit. See Part I for the internal controls assessed.

Potential Benefits of Audit. We estimated that the Air Force could avoid from \$30.3 million to \$42.6 million in procurement costs in the Future Years Defense Program by implementing a component breakout program. Potential benefits of the audit are in Appendix F.

Summary of Recommendations. We recommended that:

- o the Director, Operational Test and Evaluation, not approve operational test plans until the Navy defines measures of operational effectiveness and suitability in quantifiable mission-level terms and verifies the correction of operational test deficiencies;

- o the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) hold a special Defense Acquisition Board Committee review of the JTIDS program before the Navy proceeds with the dedicated operational test;

- o the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) arbitrate negotiations between the Army and the Ballistic Missile Defense Organization concerning full funding of validated Class 2M terminal requirements if the Army and Ballistic Missile Defense Organization cannot reach agreement on program funding by the end of third quarter FY 1994; and

- o the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) inform the Air Force of the requirement to prepare and submit a cost and operational effectiveness analysis on Class 2 and 2H terminals and alternative programs before the program's full-rate production and deployment decision.

We did not make any recommendations for Finding A, Acquisition Planning for Component Breakout, because the Joint Program Office formally agreed to take corrective action in response to our planned recommendations.

Management Comments. The Joint Program Office agreed to provide comments on the potential monetary benefits from component breakout on the completion of the comprehensive component breakout review. The Director, Operational Test and Evaluation, assured us that the Navy would not be allowed to proceed with the dedicated operational test until the Navy corrected previous test deficiencies identified that would affect demonstrating JTIDS operational effectiveness and suitability. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) stated that Under Secretary of Defense for Acquisition and Technology involvement was not needed to resolve negotiations between the Army and the Ballistic Missile Defense Organization concerning full funding of Class 2M terminal requirements because the two parties planned to resolve the funding issue by the end of the third quarter of FY 1994. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) stated that an abbreviated cost and operational effectiveness analysis would be prepared before the JTID's full-rate production and deployment decision.

The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) provided coordinated comments on the findings and recommendations for the Office of the Secretary of Defense, Army, Navy, and Air Force. The Director, Ballistic Missile Defense Organization, provided separate comments. Part II contains a complete discussion of managements' comments to the report; Part IV contains the complete text of managements' comments.

Audit Response. In response to management comments, we revised the draft report recommendations concerning correction of all previously identified test deficiencies before the Navy proceeds with the dedicated operational test and Assistant Secretary of Defense (Command, Control, Communications and Intelligence) involvement in negotiations to resolve the Class 2M terminal full funding issue.

We request that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence); the Director, Operational Test and Evaluation; the Assistant Deputy Chief for Theater Missile Defense, Ballistic Defense Missile Organization; and the Army Deputy Chief of Staff for Operations and Plans respond to the unresolved issues in this final report by May 17, 1994.

Table of Contents

Executive Summary	i
Part I - Introduction	1
Background	2
Objectives	2
Scope and Methodology	3
Internal Controls	3
Prior Audits and Other Reviews	4
Part II - Findings and Recommendations	5
Finding A. Acquisition Planning for Component Breakout	6
Finding B. Navy Operational Testing	10
Finding C. Class 2M Terminal Funding	16
Finding D. Cost and Operational Effectiveness Analysis	21
Part III - Additional Information	27
Appendix A. Areas Not Requiring Further Review	28
Appendix B. Other Matters of Interest	29
Appendix C. Potential Savings Realized Through Component Breakout	31
Appendix D. Air Force Program Office Memorandum	32
Appendix E. Class 2M Terminal Requirements and Quantities Funded	34
Appendix F. Summary of Potential Benefits Resulting From Audit	35
Appendix G. Organizations Visited or Contacted	37
Appendix H. Report Distribution	39
Part IV - Management Comments	41
Office of the Assistant Secretary of Defense Comments	42
Director, Ballistic Missile Defense Organization, Comments	46

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

Part I - Introduction

Background

The Joint Tactical Information Distribution System (JTIDS) is a family of Class 2 terminals that will provide the Military Departments improved combat capabilities in aircraft, command and control platforms, and surface air defense units by providing secure, jam-resistant, real-time data and voice communication among the users. The family of JTIDS terminals consists of Class 2 (aircraft and ship platforms), Class 2H (command and control platforms) and Class 2M (mobile Army platforms). The Air Force is the lead Military Department for this joint program. The JTIDS Joint Program Office of the Electronic Systems Center, Hanscom Air Force Base, Massachusetts, manages the program.

In October 1989, the Defense Acquisition Board approved the Class 2 and 2H terminals for low-rate initial production. Through August 1993, the Joint Program Office has awarded annual firm-fixed-price low-rate initial production contracts, amounting to \$374.4 million, for a total of 252 Class 2 and 2H terminals. The Defense Acquisition Board approval was dependent on the Joint Program Office meeting specific exit criteria pertaining to performance and testing before the Joint Program Office awarded the annual low-rate initial production contracts. The Defense Acquisition Board plans to review the Class 2 and 2H terminal programs for readiness to enter full-rate production and deployment in early 1995. The Army Class 2M terminal program entered the engineering and manufacturing development phase of the acquisition process in December 1985. The Defense Acquisition Board plans to review the Class 2M terminal program for readiness to enter low-rate initial production in 1995.

The Joint Program Office is using a leader and follower acquisition strategy to reduce JTIDS terminal costs through competition. The leader is GEC-Marconi and the follower is Rockwell-Collins (Rockwell). In total, the Military Departments plan to procure 971 JTIDS Class 2 terminals at an estimated cost of about \$3.7 billion (then-year dollars).

Objectives

The audit objective was to evaluate the overall acquisition management of the JTIDS program. We performed the audit following our critical program management elements approach. The objectives and scope of the audit were tailored to the status of the JTIDS program in the early production phase of the acquisition process. We reviewed system requirements, correction of

deficiencies, prime contractor's second sourcing actions, component breakout actions, testing, acquisition planning, contracting procedures, design maturity, cost estimating and analysis, and internal controls related to these objectives.

At the end of the survey, we determined that additional audit work was not warranted for correction of deficiencies and design maturity (Appendix A). During the audit, we identified issues in prime contractor's second sourcing actions, acquisition planning, and contracting procedures that are discussed in "Other Matters of Interest" (Appendix B). Part II discusses findings and recommendations pertaining to the program management elements of system requirements, component breakout, testing, and cost estimating and analysis.

Scope and Methodology

This performance audit was conducted from November 1992 through September 1993, in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD, and accordingly included such tests of internal controls as were considered necessary. We reviewed accounting and program data dated from January 1989 through September 1993 to accomplish our announced audit objectives. We interviewed DoD, contractor, and subcontractor personnel responsible for the JTIDS program. Appendix G lists the organizations visited or contacted.

The Technical Assessment Division of the Office of the Assistant Inspector General for Auditing assisted in our review of testing and design maturity. During the audit we did not use computer-based data.

Internal Controls

We assessed internal controls related to the critical program management elements of the JTIDS program. We evaluated internal control techniques, such as management plans and reports, written policies and procedures, recent vulnerability assessments, design reviews, and various means for independent review of the program. The internal controls applicable to the JTIDS program were deemed to be effective in that we found no material control weaknesses.

Prior Audits and Other Reviews

Since January 1988, the JTIDS program has been subject of two audits that were directly related to our audit objectives: one audit by the General Accounting Office and one audit by the Office of the Inspector General, DoD.

On November 12, 1992, the General Accounting Office issued Report No. NSIAD-93-16 (Office of the Secretary of Defense Case 8996), "Military Communications, Joint Tactical Information Distribution System Issues." The report stated that Class 2 and 2H terminal low-rate initial production was begun despite the lack of adequate testing and satisfactory test results. Although the report contained no recommendations, the report suggested that Congress deny funding for additional JTIDS terminal contracts until operational test results demonstrated that the system met its performance requirements. DoD nonconcurred with the implied recommendation and awarded the third Class 2 and 2H terminal LRIP contracts.

The Office of the Assistant Inspector General for Auditing issued Report No. 92-014, "Pacific Theater Air Defense Activities," November 19, 1991. The report stated that the Air Force did not plan to include JTIDS in its F-15 aircraft and recommended that the Air Force revise its F-15 requirements to include JTIDS. As a result of resolution action, the Air Force agreed to incorporate and test JTIDS on F-15 aircraft before making a decision as to whether to include JTIDS as part of the F-15 requirements. The Air Force expects to have the F-15 test results by December 1994.

Part II - Findings and Recommendations

Finding A. Acquisition Planning for Component Breakout

The Joint Program Office did not plan to make a comprehensive component breakout review before the Class 2 and 2H terminal full-rate production decisions planned for early 1995. The Joint Program Office based this decision on a subjective determination that breakout was not cost-effective because of the complexity of the equipment and the investment required to produce and test the items. As a result, the Joint Program Office could miss an opportunity to save from \$30.3 million to \$42.6 million over the FYs 1994 through 1999 Future Years Defense Program.

Background

Component breakout is the process whereby the Government purchases components directly from the manufacturer or supplier and furnishes them to the end-item prime contractor as Government-furnished equipment. The Government then eliminates the prime contractor's overhead and profit on those components and achieves savings for the Government.

DoD policy is to break out components whenever the Government anticipates that prime contracts will be awarded without adequate price competition; substantial net cost avoidance can be achieved; and the component breakout decision does not jeopardize the quality, reliability, performance, or timely delivery of the system. The Defense Federal Acquisition Regulation Supplement (DFARS), Appendix D, "Component Breakout," identifies candidates for breakout as components that have an annual acquisition cost of at least \$1 million. DFARS, Appendix D, further requires program managers to identify potential breakout candidates and to make and document breakout reviews.

On August 9, 1990, the Deputy Secretary of Defense directed that program managers perform component breakout reviews as part of their system acquisition strategies. The Deputy Secretary also directed Secretaries of the Military Departments to require program managers to complete component breakout reviews as a step in acquisition strategies and to ensure that program managers have the resources and expertise to perform adequate component breakout analyses.

Finding A. Acquisition Planning for Component Breakout

Component Breakout Planning

The Joint Program Office did not plan to conduct a comprehensive component breakout review. In the November 1991 acquisition plan, the Joint Program Office stated that it was unlikely that component breakout would be cost-effective because of the complexity of the equipment and the investment required for producing and testing the items. In the "Draft Integrated Program Summary for JTIDS Defense Acquisition Board Milestone III, April 6, 1993," the Joint Program Office also stated that component breakout would not be accomplished because of the high cost, technical complexity, and increased risk of integrating JTIDS line-replaceable units at the terminal level. After equipment deployment, the Joint Program Office indicated that the depot responsible for maintaining the equipment and procuring replenishment spares would be responsible for considering breakout of spares.

Component Breakout Candidates

We reviewed the only three JTIDS components that met the DFARS criteria as component breakout candidates. We visited the component manufacturers to evaluate design stability, evaluate the manufacturer's delivery history in relation to contract requirements, review the frequency and nature of components being returned because of defects, and determine the efforts required of the prime contractor before assembling supplied components into the JTIDS terminals. In addition, we interviewed quality assurance representatives to determine the quality of components being manufactured and to obtain their opinions on whether the components could be broken out.

The three components reviewed were the power supply, receiver synthesizer (receiver), and the ship cabinet assembly (cabinet). GEC-Marconi and Rockwell use the same subcontractors for the power supply and the cabinet. Eldec Corporation was the subcontractor for the power supply, and Falstrom Company was the subcontractor for the cabinet. GEC-Marconi subcontracted the receiver to Microsource using the Rockwell drawing while Rockwell manufactured this component in-house.

Our review showed that the three components could be supplied to the prime contractor as Government-furnished equipment beginning with the full-rate production buy in FY 1995 because the components will have a stable design, component reliability will be high, and the resultant savings should be substantial (although the Air Force will have additional management cost).

Finding A. Acquisition Planning for Component Breakout

Component Design Maturity and Stability. The three components were not technically complex, and no major design changes were planned for the three components. We did note that the receiver, because of a change in suppliers, will require some revisions of a printed wiring board, but this change is not critical and will not affect form, fit, or function.

Delivery Performance. Two of the three components were delivered on time on lot 2, the latest production lot. Microsource was late in delivering the receivers to GEC-Marconi due to Rockwell design changes that affected the end-item configuration. The late delivery did not cause GEC-Marconi to miss its JTIDS contract delivery date with the Air Force.

Component Reliability. Although the power supply and the receiver experienced high return rates from the prime contractors, those return rates were associated either with the usage of outdated testing procedures or with early design problems. Updated test procedures were later supplied; early design problems were corrected and have not reoccurred. Government quality assurance representatives agreed that the components were reliable and could be furnished as Government-furnished equipment.

Prime Contractor Value Added. Upon receipt of the power supply and receiver from the manufacturer, the prime contractors only examine and test the components before their assembly into the JTIDS terminals because the components are enclosed units. If components are believed to be defective during the examination or testing, the prime contractors return the component to the manufacturer for analysis and repair. Rockwell follows this same inspection and installation practice for the cabinet. However, GEC-Marconi installed wires and cables in the cabinet before loading other JTIDS components. GEC-Marconi informed us that it was considering acquiring the cabinets as a complete unit, similar to Rockwell's acquisition practice.

Estimated Savings From Component Breakout. Component breakout savings from \$30.3 million to \$42.6 million could be achieved during full-rate production of the terminals (Appendix C) because the prime contractors will add * percent markup to the cost of components acquired from component manufacturers. This * -percent markup is comprised of material-related overhead, general and administrative expenses, cost of money, and profit.

Conclusion

Component breakout planning must occur early in the acquisition cycle to identify potential component breakout candidates and to determine the cost-effectiveness of implementing a component breakout program. Although the Joint Program Office believes that competition has resulted in the lowest price

*Contractor proprietary data deleted.

possible to the Government, DoD regulations stress that competition does not prevent component breakout when net savings will result from greater quantity acquisition or factors such as logistics support and economics in operations.

At our exit conference, the JTIDS Deputy Program Manager agreed that a component breakout review should be performed and the results implemented before the Class 2 and 2H full-rate production decision planned for early 1995. On August 10, 1993, the Joint Program Office provided its written concurrence with our draft finding and recommendations (Appendix D). Since management has already agreed to take appropriate corrective actions in response to the finding, no recommendations for corrective action are being made in our audit report. However, we request that the Joint Program Office provide comments on the potential monetary benefits identified in the finding and in Appendix F.

Management Comments

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) stated that the Joint Program Office will provide comments on the potential monetary benefits identified in the finding on the completion of the comprehensive component breakout review. The review will be completed before the JTIDS full-rate production decision planned for early 1995. The complete text of management comments is in Part IV.

Finding B. Navy Operational Testing

The Navy operational tests will not provide the Defense Acquisition Board with objective operational test results in support of the Class 2 and 2H terminal full-rate production decision planned for early FY 1995. This condition was caused by:

- o the Test and Evaluation Master Plan (TEMP) not defining measures of operational effectiveness and suitability in quantifiable mission-level terms,

- o the Navy proceeding with successive phases of operational testing before correcting operational performance deficiencies identified during previous tests, and

- o the lack of Navy funding to correct JTIDS host platform interface problems that were not within the scope of the JTIDS program.

Without objective operational test results, the Defense Acquisition Board will not be able to make a properly informed decision concerning the readiness of the Class 2 and 2H terminals for full-rate production.

Background

Statutory Requirements. Title 10, United States Code, "Operational test and evaluation of Defense acquisition programs," section 2399, establishes statutory requirements for operational testing of major Defense acquisition programs. Title 10 requires the Director, Operational Testing and Evaluation (DOT&E), to approve the adequacy of operational test plans before operational tests. Further, the statute states that a decision to proceed with a major Defense acquisition program beyond low-rate initial production requires that the DOT&E submit a report to the Secretary of Defense and the Congress stating whether the results of operational test and evaluation confirmed that the system tested was effective and suitable for combat.

DoD Requirements. DoD incorporated the statutory requirements in DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991. In reference to test plans, the Instruction requires that test programs in the TEMP be structured to verify that systems are operationally effective and suitable for intended use. To accomplish this objective, the Instruction requires that the TEMP submitted to DOT&E for approval include test objectives, quantitative measures of effectiveness (MOEs), and planned operational scenarios needed to resolve critical operational issues. Critical operational issues are the operational effectiveness and suitability issues that must be examined to assess the system's capability to perform its mission. In reference to test conduct, the Instruction requires that the system developer

formally certify that the system is ready for operational testing to provide the operational tester assurance that planned operational test objectives can be demonstrated.

Operational Test Results

Navy Class 2 and 2H operational test plans, as structured and implemented, will not result in the Defense Acquisition Board being provided objective Navy operational test results at the full-rate production decision planned for early FY 1995. Subjective test results will be available because the TEMP did not define measures of operational effectiveness and suitability in quantifiable mission-level terms. Also, the Navy has proceeded with successive phases of operational testing before correcting operational performance deficiencies identified during previous tests, and other Navy program offices lacked funding to correct host platform interface problems that were not within the scope of the JTIDS program.

Measures of Operational Effectiveness. The JTIDS TEMP that was updated as of November 1, 1991, and approved February 16, 1993, identified 14 critical operational issues in the Navy annex that were to be examined to assess the system's capability to perform its mission. However, the TEMP did not include quantitative MOEs needed to resolve the critical operational issues. As a result, the designated Navy operational test organization, Operational Test and Evaluation Force (OPTEVFOR), developed its own MOEs to resolve the critical operational issues. The MOEs were based on the JTIDS Multi-Command Required Operational Capability document and four letters from the Navy Director of Space and Command, Control, Communications, and Computer System Requirements that identified JTIDS minimum operating thresholds and technical performance specification data.

The lack of MOEs in the TEMP has resulted in controversy between the Navy system developer and OPTEVFOR. On the latest Navy operational test (OT), OT-IIC, January 1993, the Commander, OPTEVFOR, reported that he could no longer attest to the potential operational effectiveness and suitability of JTIDS because of the large number of remaining major deficiencies from previous testing and the results of OT-IIC. The Joint Program Office and the Navy system developer disagreed with the reported test results because they felt that OPTEVFOR had tested beyond the systems requirements in measuring JTIDS operational effectiveness and suitability. In commenting on the OT-IIC test report, the DOT&E stated that without quantitative MOEs in the TEMP, the judgment of the testing organization was a valid substitute for these measures. We agree with this conclusion.

Finding B. Navy Operational Testing

On May 28, 1993, the DOT&E told the Under Secretary of Defense for Acquisition* (USD[A]) that the JTIDS TEMP needs to better define the measures of operational effectiveness and suitability in quantifiable, mission-level terms. The Director further advised that his office was working with the Navy to insert appropriate MOEs in the draft JTIDS TEMP dated May 21, 1993, so that appropriate MOEs could be agreed to before the start of the dedicated operational evaluation (OPEVAL) in the spring of 1994. In our opinion, the inclusion of quantitative MOEs in the TEMP to resolve JTIDS critical operational issues is essential to avoid misinterpretation of future test results and to provide the Defense Acquisition Board with a means to objectively assess the results of operational testing in the production decisionmaking process.

Conduct of Operational Tests. The Navy system developer certified that JTIDS was ready for successive stages of operational testing before deficiencies identified in previous stages of operational testing were corrected and before planned operational test objectives could be demonstrated.

Operational Test IIB. OT-IIB was scheduled and conducted during March 1992. The purpose of OT-IIB was to assess the potential effectiveness and suitability of JTIDS integrated in ship and aircraft platforms while operating in an electronic countermeasures environment during at-sea exercises. The Commander, OPTEVFOR, concluded in the OT-IIB report, June 17, 1992, that the number of significant deficiencies were alarming and recommended that the system not be introduced into the fleet until 5 major deficiencies were corrected and that 53 additional deficiencies be corrected and verified through additional operational testing. Also, the Commander stated that scope limitations identified in the system developer's certification that the system was ready for operational testing affected the ability of operational testers to fully resolve critical operational issues. In this regard, the Commander stated that many operational deficiencies could have been avoided had there been sufficient time between the end of developmental testing and the start of OT-IIB to correct deficiencies identified during developmental testing.

Operational Test IIC. OT-IIC was conducted in September and October 1992. The purpose of OT-IIC was to assess the potential operational effectiveness and suitability of JTIDS and its readiness for continued integration into the fleet. OPTEVFOR's report conclusions were presented earlier in our discussion of MOEs. In the report, the Commander identified 128 deficiencies, 107 major and 21 minor. The report recommended that 56 of the major deficiencies be corrected before the conduct of OPEVAL, the dedicated OT before the Class 2 and 2H terminal full-rate production decision. The 56 deficiencies impacted OPTEVFOR's resolution of 12 of the 14 critical

*Renamed Under Secretary of Defense for Acquisition and Technology (USD[A&T]) November 1993.

Finding B. Navy Operational Testing

operational issues identified in the TEMP. The Commander also recommended that the next operational testing phase be delayed and another operational test phase be added to the test program to verify the correction of deficiencies before OPEVAL.

Correction of Deficiencies. The Director, Space and Electronic Warfare, performed a review of the 128 deficiencies identified in the OT-IIC report to determine whether the deficiencies fell within the scope of JTIDS operational requirements and technical specifications. On April 28, 1993, the Director reported that 53 of 128 deficiencies were not within the scope of the JTIDS operational test program. He recommended that host platforms incorporate changes to correct 11 of these deficiencies and to consider making changes to correct another 19 deficiencies. For the remaining 23 deficiencies, he stated that 18 were not required capabilities of JTIDS and 5 were training issues. The Director concluded that the other 75 deficiencies were within scope of the JTIDS operational test program. On June 1, 1993, the Office of Navy Test and Evaluation and Technology Requirements stated that 53 of the 75 deficiencies had been corrected but not yet verified through testing, 19 had been corrected and verified through testing, and 3 required continual update.

We visited the Navy host platform program offices for the F-14D and E-2 aircraft to determine actions being taken to correct the 25 of the 30 deficiencies that were recommended for corrective action. We found that the F-14D Program Office had initiated a planned engineering change to correct 6 of the 21 JTIDS interface deficiencies associated with the F-14D host platform. Corrective actions were not planned for the remaining 15 deficiencies. The E-2 Program Office advised that no corrective action was planned for the four JTIDS interface deficiencies associated with the E-2 aircraft host platform because of funding constraints.

Verification of Corrective Action. As a result of the OT-IIC report, the Navy revised its test program structure to include two additional test phases before OPEVAL. During the first phase in June 1993, OPTEVFOR attempted to verify the correction of 42 of the 75 OT-IIC deficiencies that the system developer indicated were corrected. OPTEVFOR reported that 18 deficiencies were corrected, 12 were partially corrected, 6 were not corrected, and 6 were not verified during the test. The test also disclosed two new deficiencies.

The other test phase added was OT-IIID, begun in the fall of 1993. The purpose of OT-IIID is to assess JTIDS performance in a battle group multi-threat environment, determine progress made in correcting deficiencies identified during previous tests, and determine the system's readiness for OPEVAL.

Finding B. Navy Operational Testing

Conclusion

Before the JTIDS OPEVAL, the Navy needs to define in the TEMP measures of operational effectiveness and suitability in quantifiable mission-level terms, to verify that previous deficiencies identified during operational testing have been corrected, and to fund and correct JTIDS interface deficiencies identified to host platforms that are not within the scope of the JTIDS operational test program. Unless these actions are taken, controversy over the results of OT-IIE is inevitable and the Defense Acquisition Board will be provided incomplete operational test results to make an informed decision concerning the readiness of the Class 2 and 2H terminals for full-rate production.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Director, Operational Test and Evaluation, not approve test plans for the dedicated operational test supporting the Class 2 and 2H terminal full-rate production decision until the Navy has:

a. Revised the Joint Tactical Information Distribution System Test and Evaluation Master Plan to define measures of operational effectiveness and suitability in quantifiable mission-level terms.

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) concurred, stating that the Director, Operational Test and Evaluation, will not approve the conduct of the Navy's OPEVAL until the Office of the Secretary of Defense approves a TEMP with measures of operational effectiveness and suitability in quantifiable mission-level terms. Management advised that the Navy plans to submit a revised TEMP to the Office of the Secretary of Defense for review and approval before July 1994. Full text of management comments is in Part IV.

b. Verified through operational testing that previous operational deficiencies identified that impact mission performance and affect the testers ability to determine whether the system is operationally effective and suitable have been corrected.

c. Funded and corrected interface deficiencies identified to host platforms that impact mission performance and affect the testers ability to determine whether the system is operationally effective and suitable.

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) did not agree that all

Finding B. Navy Operational Testing

existing test deficiencies must be corrected before OPEVAL or that all host platform interface problems require immediate correction. Management stated that the Director, Operational Test and Evaluation, and the Commander, OPTEVFOR, have clearly stated that OPEVAL will not be conducted unless the Navy corrects previous test deficiencies that impact mission performance and affect the testers' ability to determine whether the JTIDS is operationally effective and suitable. Management stated that a requirement to correct all existing test deficiencies was considered impractical and would unnecessarily delay the overall JTIDS implementation.

Audit Response. We consider management's comments to be responsive to the intent of Recommendations B.1.b. and B.1.c. In the final report, we revised Recommendations B.1.b. and B.1.c. in line with management comments. We request that the Director, Operational Test and Evaluation, provide comments on the revised recommendations in response to the final report.

2. We recommend that Assistant Secretary of Defense (Command, Control, Communications and Intelligence) conduct a special Defense Acquisition Board Committee review of the Joint Tactical Information Distribution System program before the conduct of the dedicated operational test supporting the Class 2 and 2H terminal full-rate production decision.

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) nonconcurred, stating that a special Defense Acquisition Board program review was not needed before the conduct of the Navy's OPEVAL. Management stated that a special program review was not needed because the Director, Operational Test and Evaluation, and the Commander, OPTEVFOR, have clearly stated that OPEVAL will not be conducted unless the Navy corrects previous test deficiencies that impact mission performance and affect the testers' ability to determine whether the JTIDS is operationally effective and suitable. The Assistant Secretary of Defense (Command, Control, Communications and Intelligence) provided the response instead of the Under Secretary of Defense for Acquisition and Technology since the finding is program-execution related.

Audit Response. We consider management's comments to be responsive to the intent of the recommendation. The Director, Operational Test and Evaluation, assured us that the Navy will not be allowed to conduct OPEVAL unless the Navy corrects previous test deficiencies that impact mission performance and affect the testers' ability to determine whether the JTIDS is operationally effective and suitable. This assurance satisfies the intent of Recommendation B.2. We redirected our recommendation to the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), in response to management comments.

Finding C. Class 2M Terminal Funding

The Class 2M terminal production requirements were not fully funded in the Future Years Defense Program (FYDP) for FYs 1994 through 1999. This condition occurred because of fluctuations in Army requirements and because the Army and the Ballistic Missile Defense Organization (BMDO) had not reached agreement on the funding of Class 2M terminal requirements for theater missile defense system programs. As a result, production of weapon systems in BMDO's theater missile defense system program may be delayed and funded terminal production quantities are insufficient to sustain competition during full-rate production.

Background

Army Requirements. Since 1985, Army Class 2M terminal requirements have fluctuated significantly. As late as July 1992, the Army's Training and Doctrine Command defined the Army's requirement as * terminals. In July 1993, the Command reduced the terminal requirements to * as a result of funding cuts and force structure changes. Army terminal requirements total *, and terminal requirements associated with the theater missile defense system program total *. Appendix E provides a breakout by weapon system platform of the * terminal requirements.

Theater Missile Defense Program Requirements. The BMDO (formerly the Strategic Defense Initiative Organization) is the central manager for the theater missile defense program. BMDO is responsible for developing system budgets and allocating resources so that the Military Departments can produce, deploy, and operate theater missile defense systems. The BMDO has supported development of the Class 2M terminal program because it offers theater missile defense system programs an interoperable media to transfer data through a standard Tactical Digital Information Link for the JTIDS. Army theater missile defense system programs for which the terminals are planned include the Theater High Altitude Area Defense (THAAD) and upgrades to the Patriot missile (Patriot PAC-3).

Funding Policy. In July 1991, the Deputy Secretary of Defense issued a memorandum to the Military Departments and Defense agencies on "Fiscal Discipline in Programs Reviewed by the Defense Acquisition Board." Before the Defense Acquisition Board reviews a program, the Deputy Secretary directed the DoD Components to identify funding for the program listed in the FYDP. If, after review, the USD(A&T) concludes that insufficient funds are in the FYDP to support the program as presented at the Defense Acquisition Board review, the DoD Components are required to advise the USD(A&T) of funding reductions to other programs to make funds for the program available.

*For Official Use Only data deleted.

Program Funding

Class 2M terminal production requirements have not been fully funded in the FYDP for FYs 1994 through 1999. This condition occurred because of fluctuations in Army requirements and because the Army and the BMDO had not reached agreement on funding Class 2M terminal requirements for theater missile defense system programs.

Program Instability. Army funding cuts and force structure changes have caused Army Class 2M terminal requirements to fluctuate widely from year to year. In the December 31, 1992, Selected Acquisition Report, the Joint Program Office declared the Army Class 2M terminal program as nonexecutable because of funding instability and indicated that the program would be removed from the JTIDS Acquisition Program Baseline unless the program was restructured. In August 1993, the Joint Program Office reinstated the Class 2M terminal program into the JTIDS Acquisition Program Baseline because the Army had identified BMDO out-year funding for the program. As of September 30, 1993, the Army has funded * of the * JTIDS Class 2M terminal requirements. The Army's earlier stated requirements were as much as *

Funding of Theater Missile Defense System Requirements. For FYs 1994 through 1999, the BMDO provided funding for * of the * JTIDS Class 2M terminals associated with theater missile defense system programs that require funding during the FYDP. Of the *, BMDO specified that * terminals were funded to support the THAAD program. The Joint Program Office satisfied * of the Patriot PAC-3 terminal requirements through BMDO funding. In addition, BMDO has indicated plans to fund another * terminals for the THAAD program during FY 2000 and FY 2001. Accordingly, theater missile defense system program requirements for * terminals (requirement of * terminals less * BMDO funded and * terminals BMDO plans to fund) are unfunded in the FYDP for FYs 1994 through 1999.

Funding of the remaining * terminals continues to be negotiated between the Army and BMDO. When we completed our audit field work, BMDO had not agreed to fund the * terminals, even though the terminals are required for weapon system programs that fall within BMDO's theater missile defense system program. Conversely, the Army does not believe it has responsibility for budgeting for the * terminals because BMDO's charter requires it to provide management oversight and funding for all weapon systems being developed by the Military Departments as part of the theater missile defense system program.

Available Funding. The FYs 1994 through 1999 FYDP provides funding for the following Class 2M terminals.

* FOR OFFICIAL USE ONLY DATA DELETED.

Finding C. Class 2M Terminal Funding

	<u>Funded 2M Terminal Requirements</u>						<u>Total</u>
	Fiscal Year						
	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	
THAAD	*		*			*	*
Forward Area							
Air Defense		*					*
Patriot PAC-3	—	*	—	*	*	—	*
Total	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>

Production quantities in the FYDP will enable the Joint Program Office to maintain competition between the two Class 2M terminal contractors through low-rate initial production. Class 2M terminal low-rate initial production is scheduled to begin in FY 1995 and end in FY 1999. Class 2M terminal full-rate production is scheduled to begin in FY 1999. To maintain competition between the two contractors during full-rate production, a minimum economical production quantity of * terminals per year must be funded. GEC-Marconi, one of the contractors, stated that it required a minimum of *, and Rockwell, the other contractor, required a minimum of *. As shown above, sufficient funded quantities exist from only one contractor during full-rate production after FY 1995 if minimum economical production quantities are to be ordered each year.

Conclusion

The Class 2M terminal program is not fully funded in the FYDP for FYs 1994 through 1999. An additional * terminals, costing approximately * , need to be funded to satisfy validated Army requirements for weapon systems in BMDO's theater missile defense system program. Before the Class 2M terminal low-rate initial production review planned for FY 1994, the Army needs to finalize negotiations with BMDO to ensure program stability and realistic production planning as required in the 1991 memorandum from the Deputy Secretary of Defense. Without full program funding, production of weapon systems in BMDO's theater missile defense system program will be delayed. In addition, the Army may not be able to maintain competition for future procurements because the production rate will be less than the minimum quantities required by two competing contractors.

* FOR OFFICIAL USE ONLY DATA AND CONTRACTOR PROPRIETARY DATA DELETED.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) oversee and resolve negotiations between the Army and the Ballistic Missile Defense Organization to fully fund Class 2M terminal requirements in the FY 1994 through FY 1999 Future Years Defense Program if the Army and the Ballistic Missile Defense Organization cannot reach agreement on program funding by the end of the third quarter of FY 1994.
2. We recommend that the Army Deputy Chief of Staff for Operations and Plans provide Class 2M terminal funds in the FY 1994 through FY 1999 Future Years Defense Program in accordance with the funding agreement reached with the Ballistic Defense Missile Organization.
3. We recommend that the Assistant Deputy Chief for Theater Missile Defense, Ballistic Defense Missile Organization, provide Class 2M terminal funds in the FY 1994 through FY 1999 Future Years Defense Program in accordance with the funding agreement reached with the Army.

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) and the Director, Ballistic Defense Missile Organization, agreed that the Army and BMDO need to reach agreement on the funding of Class 2M terminal requirements but nonconcurred with the three recommendations made to resolve the funding issue. Management stated that the issue requiring resolution between the Army and BMDO was isolated to the funding of Class 2M terminals needed to satisfy Patriot PAC-3 requirements. The Army and BMDO have concerns over Patriot PAC-3 requirements below battalion level based on the Army's reduced data requirements at that level. Management stated that the Army was reevaluating this requirement. BMDO stated that its decision to commit additional funds for Class 2M terminals was pending the results of the Army review that is anticipated to be completed in the third quarter of FY 1994. The Assistant Secretary of Defense (Command, Control, Communications and Intelligence) provided a response instead of the Under Secretary of Defense for Acquisition and Technology since the finding is program-execution related.

Since the Army and BMDO were actively trying to reach closure on the JTIDS funding and requirements issue, the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) stated that the Under Secretary of Defense for Acquisition and Technology does not need to oversee and resolve Army and BMDO negotiations at this time as recommended in the draft report. The full text of management comments is in Part IV.

Finding C. Class 2M Terminal Funding

Audit Response. We are encouraged by the Army's and BMDO's stated intent to resolve the Class 2M terminal funding issue by the end of the third quarter of FY 1994. However, we believe that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) needs to get involved to ensure that the Class 2M terminal requirements are fully funded in the Future Years Defense Program as required if the Army and BMDO cannot reach agreement by the end of the third quarter of FY 1994. We, therefore, modified the three recommendations in line with this revised audit position. We request that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence); the Army Deputy Chief of Staff for Operations and Plans; and the Assistant Deputy Chief for Theater Missile Defense, Ballistic Defense Missile Organization, provide comments on the revised recommendations in response to the final report.

Finding D. Cost and Operational Effectiveness Analysis

The Joint Program Office did not plan to perform a cost and operational effectiveness analysis (Analysis) before the full-rate 1995 production and deployment decision for the Class 2 and 2H terminals. The Joint Program Office believed that the Analysis was not required because Class 2 and 2H terminals entered low-rate initial production before an Analysis was required. Further, Joint Program Office officials stated that the Analysis would not be needed unless the Air Force decided to outfit F-15 aircraft with JTIDS and that the Joint Program Office already examined alternative distribution systems. Without the Analysis, the Joint Program Office cannot adequately assess the potential for meeting long-term Military Departments' interoperability requirements or judge the effects of reported JTIDS test results on program cost and mission operational effectiveness.

Background

The Cost and Operational Effectiveness Analysis evaluates the costs and benefits of alternative actions to meet recognized Defense needs and determines the total life-cycle cost of alternative programs and the associated cost for acquiring each alternative. DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," part 4, section E, February 23, 1991, establishes policies and requirements for developing analyses to support milestone decision reviews.

Policies. DoD Instruction 5000.2 states that an analysis is intended to aid in decisionmaking, facilitating communications, and documenting acquisition decisions by highlighting the advantages and disadvantages of the alternatives being considered. An analysis also shows the sensitivity of each alternative to possible changes in key assumptions (such as threat and the interrelationship of systems) or changes in variables, including selected performance capabilities. Further, an analysis provides early identification of reasonable alternatives to the decision makers. Additionally, an analysis must include the maximum monetary threshold or the minimum acceptable performance that can be tolerated before other program alternatives are determined to be more cost-effective.

In a March 9, 1992, memorandum, the USD(A) clarified the policy on developing an analysis to require DoD Components to explain in a quantitative evaluation how and to what extent analysis results would be expected to vary as

Finding D. Cost and Operational Effectiveness Analysis

a result of test limitations. Using the test results in an analysis enables the Defense Acquisition Board to reaffirm the decision that the selected alternative is the most cost-effective approach to satisfying an operational requirement.

Requirement. DoD Instruction 5000.2 requires that an analysis be prepared and considered at all milestone decision reviews for major Defense acquisition programs beginning with Milestone I, Concept Demonstration Approval.

Performance of a Cost and Operational Effectiveness Analysis

The Joint Program Office did not plan to perform an analysis in support of the full-rate production and deployment decision for the Class 2 and 2H terminals. The Joint Program Office believed that the Analysis was not required because the Class 2 and 2H terminals entered low-rate initial production before the requirement for an analysis was established. Further, the low-rate initial production Acquisition Decision Memorandum did not require an analysis for the full-rate production decision review unless the Air Force decided to outfit F-15 aircraft with JTIDS. Additionally, the Joint Program Office in the Decision Coordinating Paper already examined alternative systems.

New Requirement. The Joint Program Office believed that an analysis was not required in support of the full-rate production and deployment decision because the Analysis requirement was not in effect when the Class 2 and 2H terminal low-rate initial production decision was made in October 1989. That opinion is incorrect. When issued in 1991, DoD Instruction 5000.2 stated that Defense acquisition programs scheduled for milestone reviews 6 months after the date of publication of the Instruction were subject to the new review procedures and documentation requirements identified in the Instruction.

We discussed the Analysis requirement with USD(A&T) officials. The officials confirmed that the Joint Program Office would be required to submit the Analysis as part of the program documentation needed to support the Class 2 and 2H terminal full-rate production and deployment decision as required by DoD Instruction 5000.2. In addition, the officials stated they would not grant a waiver of the Analysis requirement.

Class 2 Terminals for F-15 Aircraft. The Joint Program Office stated that the low-rate initial production Acquisition Decision Memorandum did not require that the Analysis be prepared and submitted for the full-rate production and deployment decision review unless the Air Force decided to outfit F-15s with JTIDS. In the October 1989 Acquisition Decision Memorandum, the USD(A) directed the Air Force to decide by June 1991 whether to retain its F-15 terminals or to transfer all terminals to the Navy. Further, the USD(A) stated that if the Air Force decided to retain the terminals, it must submit the Analysis to the Defense Acquisition Board that justifies the basis for the decision.

Finding D. Cost and Operational Effectiveness Analysis

On May 13, 1991, the Assistant Secretary of the Air Force (Acquisition) advised the USD(A) that the Air Force did not have a requirement for Class 2 terminals on its F-15s. Instead, the Assistant Secretary stated that the Air Force planned to divert Class 2 terminals planned for the F-15s to the Airborne Battlefield Command and Control Center and to the Tactical Air Control Center.

On April 7, 1992, the Deputy USD(A), in a memorandum to the Secretary of the Air Force, stated that the Air Force's decision to divert Class 2 terminals planned for the F-15s to command and control platforms was not supported by an analysis and did not relieve the Air Force from the requirement to prepare and submit an analysis. Accordingly, the Deputy requested that the Air Force provide the cost-versus-effectiveness rationale for its use of the JTIDS terminals, whether on command or control platforms or on the F-15.

On June 23, 1992, the Air Force responded to the Deputy USD(A), stating that it had a clear understanding of the costs inherent in specific JTIDS applications, benefits to be realized, and potential alternatives, even though the formal Analysis was not prepared. Further, the Air Force stated that, in most cases, the decision to use JTIDS or a special-purpose data link was obvious after reviewing the results of the Air Force qualitative analysis.

The Joint Program Office was unable to provide documentation to support its decision on the Class 2 terminal. Nonetheless, DoD Instruction 5000.2 requires that all earlier analyses be updated in support of Milestone III, Production and Deployment Decision.

Decision Coordinating Paper. The Joint Program Office stated that alternatives to the Class 2 terminal were adequately addressed in its JTIDS Decision Coordinating Paper, June 6, 1989, which was prepared to support the Class 2 terminal low-rate initial production decision. In the Decision Coordinating Paper, the Joint Program Office discussed two alternatives to the Class 2 terminal. The first alternative was to wait until the Multi-Information Distribution System, a product improvement upgrade of the JTIDS, was deployed. The second alternative was to renew production of an upgraded JTIDS Class 1 terminal. The Joint Program Office dismissed both alternatives because the Multi-Information Distribution System would not be fielded until 1997 and an upgraded Class 1 terminal would require substantial time and money.

In assessing alternatives in the Decision Coordinating Paper, the Joint Program Office assumed that the entire Class 2 terminal program would be terminated in favor of either the Multi-Information Distribution System or the upgraded Class 1 terminal. As a result of that assumption, the Joint Program Office did not assess the feasibility of a complementary and cost-effective mix of JTIDS and the Multi-Information Distribution System to satisfy mission requirements. As of February 28, 1994, the JTIDS was planned for fielding in 1995; the Multi-Information Distribution System was planned for 1997.

Finding D. Cost and Operational Effectiveness Analysis

An analysis would be useful to decision makers in judging the advantages and disadvantages of all alternatives, including a complementary mix of JTIDS and the Multi-Information Distribution Systems to satisfy mission requirements. An Analysis would also provide decision makers with a quantitative evaluation of how and to what extent analysis results would be expected to vary as a result of test limitations reported by Air Force and Navy operational test organizations. That information was not available when the Decision Coordinating Paper was prepared in 1989.

Effect of Performing a Cost and Operational Effectiveness Analysis

DoD regulations and sound program management require that an analysis be prepared and submitted to support the Class 2 terminal full-rate production and deployment decision planned for early 1995. The objective of an analysis is not to support the procurement of a particular system but to examine how to best fulfill requirement objectives. Therefore, an analysis would provide the Joint Program Office an opportunity to adequately assess the potential for meeting the Military Departments' long-term interoperability requirements through a complementary mix of JTIDS Class 2 terminals and alternative data distribution systems and to judge the effects of reported JTIDS test results on program cost and mission operational effectiveness.

Recommendation, Management Comments, and Audit Response

We recommend that the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) require the Air Force to prepare and submit a cost and operational effectiveness analysis on Class 2 and 2H terminals and alternative programs as required by DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," before the program's full-rate production and deployment decision planned for early 1995.

Management Comments. The Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) concurred, stating that the Air Force has initiated meetings with the Office of the Secretary of Defense to determine the scope of the cost and operational effectiveness analysis needed to support the program's full-rate production and deployment decision planned for early 1995. The Assistant Secretary of Defense (Command, Control,

Finding D. Cost and Operational Effectiveness Analysis

Communications and Intelligence) provided the response instead of the Under Secretary of Defense for Acquisition and Technology since the finding is program-execution related. The full text of management comments is in Part IV.

Audit Response. We redirected our recommendation to the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) in response to management comments.

Part III - Additional Information

Appendix A. Areas Not Requiring Further Review

During the survey phase of the audit, we determined that additional audit work was not warranted for the following program management elements.

Correction of Deficiencies. The Joint Program Office had established a self-inspection program to ensure compliance with Office of Management and Budget Circular A-123, "Internal Control Systems." As deficiencies were identified, the Joint Program Office initiated or planned appropriate corrective actions.

Design Maturity. The Joint Program Office and GEC-Marconi had established and implemented effective configuration management of the development of JTIDS. Specifically, a system of tracking and resolving open items from functional and physical configuration audits existed, a configuration management plan was approved, and a system of tracking engineering changes was utilized to enhance configuration visibility and accounting.

Appendix B. Other Matters of Interest

We identified potential audit issues relating to acquisition planning and second sourcing, testing, cost estimating and analysis, and contracting procedures for which corrective action was taken during the audit but for which continued management oversight is needed.

Acquisition Planning and Second Sourcing Actions. The JTIDS acquisition plan provided for the award of production contracts to the leader and the follower contractors when full-rate production commences. The plan states that the additional cost to maintain two separate production lines was justified based on expected competition savings. Since the acquisition plan was developed, both contractors have won JTIDS terminal production contracts from foreign customers (non-Foreign Military Sales). We were informed that a foreign market may require as many as 160 Class 2 terminals.

Foreign customer orders preclude the need to split JTIDS production quantities between the leader and the follower contractors to maintain future competition. In this regard, we believe that it makes good business sense for the Joint Program Office to revise the acquisition plan for full-rate production so that an option is included that would permit the award of all production quantities to one contractor. That opinion is predicated on both contractors having sufficient foreign customer orders to produce the minimum economical production quantities needed to keep their JTIDS production lines open. By revising the acquisition plan, the Joint Program Office could avoid the cost of maintaining two production lines. The Joint Program Office agreed with our conclusion and plans to revise the acquisition plan for full-rate production accordingly. (Appendix D).

Testing. In October 1992, the Air Force Operational Test and Evaluation Center (Center) completed phase two of the multi-Service operational test of Class 2 and 2H terminals. The test objectives were to determine JTIDS' operational effectiveness and suitability in a joint Air Force and Navy electronic warfare environment, to determine JTIDS' interoperability between Navy and Air Force platforms, and to assess JTIDS' ability to support control of tactical aircraft in joint military operations and air battle scenarios. The Navy issued its test report on January 22, 1993.

As of February 28, 1994, the Air Force Test Center Commander still had not issued the Air Force test report, pending additional analysis of reliability and maintainability data. It is important for testing organizations to issue timely reports after the completion of tests to ensure that identified deficiencies are corrected and to effect the results of subsequent planned operational tests. Accordingly, we believe that the Center needs to expedite the issuance of its JTIDS phase two report.

Appendix B. Other Matters of Interest

Cost Estimating and Analysis (Selected Acquisition Report). The Joint Program Office was not reporting the total JTIDS program cost in the Selected Acquisition Report. The Joint Program Office reported program costs that were within its control but not JTIDS' procurement costs that were controlled by program offices for host platforms. On January 21, 1993, we reported this same condition in Audit Report No. 93-043, "Acquisition of the Advanced Tactical Air Reconnaissance System." In response to report recommendations, the Director, Acquisition Policy and Program Integration, agreed to include specific guidance regarding how to report subsystem procurement costs in the next update to DoD Manual 5000.2, "Defense Acquisition Management Documentation and Reports." Because corrective action is under way, we are not making additional recommendations in this report.

Contracting Procedures. The Federal Acquisition Regulation, subpart 15-805, "Proposal Analysis," requires that the Government make a price analysis to ensure that consideration (some form of reimbursement) offered by contractors is reasonable. However, we were unable to determine the reasonableness of consideration received for JTIDS contract waivers and deviations because the Joint Program Office had not documented the reasonableness of consideration provided when granting GEC-Marconi and Rockwell contract relief from delivery schedule and technical requirements. The Joint Program Office had received consideration from the contractors, when appropriate, for the 51 waivers and deviations we reviewed. Consideration included extended warranties for noncompliant parts, additional testing and engineering support, and additional design work. However, we found no evidence that the Joint Program Office performed a price analysis when assessing the reasonableness of consideration offered. The Joint Program Office acknowledged that its files did not include the required price analysis and agreed to document the price analysis for future JTIDS contract waivers and deviations as required (Appendix D).

During the audit survey, we noted several deficiencies with GEC-Marconi's control over Government-furnished property. Specifically, Government-furnished property in GEC-Marconi's property records were not priced, and GEC-Marconi had established no segregation of duties in conducting and reporting physical inventory results. In addition, since 1990, the Defense Contract Management Area Operations provided limited Government property oversight. During our audit, the Defense Contract Management Area Operations conducted a Government property control system analysis at GEC-Marconi. The report identified deficiencies in contractor property management, acquisition, receiving, property identification, records, movement, storage, physical inventory reports, consumption, utilization, maintenance, subcontractor control, disposition, and contract property closeout. Appropriate recommendations were made, and follow-up actions were planned. In the future, continuous Defense Contract Management Area Operations oversight should ensure that Government-furnished property is adequately protected.

Appendix C. Potential Savings Realized Through Component Breakout

	<u>Cabinet Assembly</u>	<u>Power Supply</u>	<u>Receive Synthesizer</u>	<u>Total</u>
Material	*	*	*	
Overhead and Profit	*	*	*	
Gross Savings	*	*	*	
Less:				
Administrative Breakout Cost (* percent)	*	*	*	
Total Potential Savings per Terminal	*	*	*	
<u>Funded Requirements for FY 1995 through FY 1999</u>				
Quantity	*	*	*	
Estimated Savings (\$ in millions)	\$4.9	+ \$7.2	+ \$18.2	= <u>\$30.3</u>
<u>Total Requirement (Funded and Unfunded) for FY 1995 through FY 1999</u>				
Quantity	*	*	*	
Estimated Savings (\$ in millions)	\$4.9	+ \$10.7	+ \$27	= <u>\$42.6</u>

Conclusion: Potential savings to be realized through component breakout will range from \$30.3 million to \$42.6 million depending on whether all JTIDS validated requirements are funded.

* FOR OFFICIAL USE ONLY DATA AND CONTRACTOR PROPRIETARY DATA DELETED.

Appendix D. Air Force Program Office Memorandum



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS ELECTRONIC SYSTEMS DIVISION (AFSC)
HANSCOM AIR FORCE BASE, MASSACHUSETTS 01731-5000

10 August 1993

MEMORANDUM FOR PROGRAM DIRECTOR, AIR AND SPACE PROGRAM
DIVISION, DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: Audit of the Acquisition of Joint Tactical Information
Distribution System (JTIDS) (Project No. 3AS-0010)

The JTIDS Program provides the following information in
response to Action Item #64 dated 6 July 1993:

Acquisition Planning/Second Sourcing

The JTIDS Joint Program Office (JPO) agrees with the observation that the impact of other customers (e.g., 60 terminals for the RAF and 20 terminals for NATO AWACS) was not specifically taken into consideration during acquisition planning for the JTIDS Lot III and Lot IV contracts. The impact of these other customers is being evaluated with respect to the contractors' production capabilities. We concur that these other customer procurements should be addressed in the development of acquisition strategies for future procurements, to the maximum extent practicable.

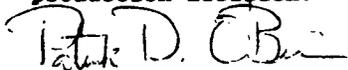
The JPO agrees to use contractor proposals to update the calculation of competition savings (i.e., the "threshold") in determining the benefits of continuing our dual source strategy. While this was not done during the Lot III source selection (as the Threshold to Premium ratio was high), the calculations after the fact substantiated our decision to continue with the dual source strategy. We have used the Lot IV proposals to update the threshold calculations. If the threshold is greater than the Dual Source Premium, we will proceed to award two contracts.

Contracting

The JPO continually performs a thorough analysis to ensure that the Government receives adequate consideration equal to the value allowed to the contractor as a result of deviation/waiver or rebaseline activity. We concur that the documentation in the contract files was not always sufficient to provide an audit trail to substantiate the adequacy of the consideration. We will ensure future contract activity is adequately documented in the official contract files in accordance with FAR criteria.

Component Breakout

The JPO has agreed to conduct a Component Breakout Study to identify all potential candidates for breakout. The study will be completed and results fully implemented prior to a full-rate production decision.



PATRICK D. O'BRIEN, Colonel, USAF
Deputy Program Director
JTIDS Joint Program Office

Appendix E. Class 2M Terminal Requirements and Quantities Funded

Weapon System	Requirements			Quantities Funded		Quantities Unfunded
	Theater Missile Defense	Other Army	Total	BMDO	Army	
BTOC ¹						
FAAD ²						
HIMAD ³						
JTAGS ⁴						
Patriot PAC-3 ⁵						
THAAD ⁶						
Total						

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Legend

- ¹BTOC - Brigade Tactical Operation Center
- ²FAAD - Forward Area Air Defense
- ³HIMAD - High-to-Medium Altitude Air Defense
- ⁴JTAGS - Joint Tactical Ground Station
- ⁵PAC-3 - Patriot Missile Upgrade
- ⁶THAAD - Theater High Altitude Air Defense

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Type of Benefit
A.	Compliance with Regulations. Will ensure that the Air Force performs a component breakout review and implement results before the full-rate production decision.	Monetary. The Air Force could avoid from \$30.3 million to \$42.6 million in procurement costs in the Future Years Defense Program. (FYs 1994-1999 in various Military Department platform procurement funds). The exact amounts will be determined after complete component breakout reviews are completed and the savings resulting from any breakout decisions will be tracked in the audit followup process.
B.1.	Compliance with Regulations. Will ensure that the Defense Acquisition Board is provided objective test results for the Class 2 and 2H terminal full-rate production decision planned for early 1995.	Nonmonetary.
B.2.	Compliance with Regulations. Will ensure that the Navy's dedicated operational test of the Class 2 and 2H terminals is not performed until objective test results can be obtained and reported by the Navy's operational test organization.	Nonmonetary.

Appendix F. Summary of Potential Benefits Resulting from Audit

Recommendation Reference	Description of Benefit	Type of Benefit
C.1.	Compliance with Regulations. Will ensure that the Class 2M terminal full funding issue is resolved between the Army and the Ballistic Missile Defense Organization.	Nonmonetary.
C.2.	Compliance with Regulations. Will ensure that Class 2M terminals are fully funded in the Future Years Defense Program.	Nonmonetary.
C.3.	Compliance with Regulations. Will ensure that Class 2M terminals are fully funded in the Future Years Defense Program.	Nonmonetary.
D.1.	Compliance with Regulations. Will ensure that the Joint Program Office prepares a cost and operational effectiveness analysis in support of the Class 2 and 2H terminal full-rate production decision.	Nonmonetary.

Appendix G. Organizations Visited or Contacted

Office of the Secretary of Defense

Office of the Under Secretary of Defense for Acquisition and Technology, Washington, DC
Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence), Washington, DC
Office of the Assistant Secretary of Defense (Program Analysis and Evaluation), Washington, DC
Director, Operational Test and Evaluation, Washington, DC
Ballistic Missile Defense Organization, Washington, DC

Department of the Army

Assistant Secretary of the Army (Research, Development and Acquisition), Army Data Distribution Systems, Fort Monmouth, NJ
Deputy Chief of Staff for Operations and Plans, Washington, DC
Office of the Director of Information Systems for Command, Control, Communications, and Computers, Washington, DC
Army Training and Doctrine Command, Fort Gordon, GA
Army Defense Artillery School, Fort Bliss, TX
Combined Arms Command, Fort Leavenworth, KS

Department of the Navy

Office of the Chief of Naval Operations, Washington DC
Operational Test and Evaluation Force, Norfolk, VA
Marine Corps Combat Development Command, Quantico, VA
Space and Naval Warfare Systems Command, Washington, DC

Department of the Air Force

Air Force Chief of Staff, Washington, DC
Air Force Operational Test and Evaluation Center, Kirkland Air Force Base, NM
Office of the Assistant Secretary of the Air Force (Acquisition), Washington, DC
Office of the Assistant Secretary of the Air Force (Financial Management and Comptroller), Washington, DC
Air Force Cost Analysis Agency, Washington, DC
Air Force Cost Analysis Improvement Group, Washington, DC
Air Force Materiel Command, Hanscom Air Force Base, Bedford, MA
Electronic Systems Center, Hanscom Air Force Base, Bedford, MA

Appendix G. Organizations Visited or Contacted

Other Defense Organizations

Defense Logistics Agency, Alexandria, VA
Defense Contract Management Area Operations, Cedar Rapids, IA
Defense Contract Management Area Operations, San Bruno, CA
Defense Contract Management Area Operations, Seattle, WA
Defense Plant Representative Office, Wayne, NJ
Defense Contract Audit Agency Resident Office, Cedar Rapids, IA
Defense Contract Audit Agency Resident Office, Wayne, NJ

Other Government Organizations

Department of State, Washington, DC

Contractors

Eldec Corporation, Lynnwood, WA
Falstrom Company, Passaic, NJ
GEC-Marconi, Wayne, NJ
Microsource, Santa Rosa, CA
Rockwell-Collins, Cedar Rapids, IA

Appendix H. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
Assistant to the Secretary of Defense for Public Affairs
Comptroller of the Department of Defense
Director, Operational Test and Evaluation
Director, Ballistic Missile Defense Organization

Department of the Army

Secretary of the Army
Deputy Chief of Staff for Operations and Plans
Auditor General, Department of the Army

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Chief of Naval Operations
Space and Naval Warfare Systems Command
Comptroller of the Navy
Naval Audit Service

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Acquisition)
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Air Force Materiel Command
 Headquarters, Electronic Systems Center
 Joint Tactical Information Distribution System Program Office
Auditor General, Air Force Audit Agency

Other Defense Organizations

Director, Defense Logistics Agency
Defense Logistics Studies Information Exchange
National Security Agency

Appendix H. Report Distribution

Non-Defense Organizations

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

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 Assistant Secretary of Defense Comments



COMMAND CONTROL
COMMUNICATIONS
AND INTELLIGENCE

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON DC 20301-3040

FEB 04 1994

MEMORANDUM FOR DoD INSPECTOR GENERAL
Attention Deputy Director, Acquisition Management
Directorate

SUBJECT Draft Audit Report on the Acquisition of the Joint Tactical Information
Distribution System (JTIDS) -- (Project No 3AS-0010)

This memorandum is our response to your draft audit report on the JTIDS program. JTIDS has not had a DAB review since September 1989 and is currently completing its Low Rate Initial Production (LRIP) phase. This office is providing you a response instead of OUSD (A&T), since the report findings are oriented towards program execution rather than to the effectiveness of the DAB process.

Our attached comments have been coordinated with Army, Navy, Air Force, Ballistic Missile Defense Organization (BMDO) and appropriate OSD offices. Thank you for the opportunity to comment on the draft report.


Richard G. Howe
Director, Theater and Tactical C3

Attachment

CC OUSD (A&T) / API
DoD (C) / PB
DoD (C) / PA&E
DDP
DOT&E
DDT&E
Army AE
Navy AE
Air Force AE
BMDO TMD

Comments on the DoD Draft Audit Report on the Acquisition of the Joint Tactical Information Distribution System (JTIDS) - (Project No. 3AS-0010)

FINDING A. - Acquisition Planning for Component Breakout. The Air Force led JTIDS Joint Program Office (JPO) did not plan to make a comprehensive component breakout review before the Class 2 / 2H terminal full rate production decision

DoD RESPONSE: Concur.

Since the JPO Deputy Program Manager has agreed to the DoD IG suggestion to perform a component breakout review prior to the JTIDS Class 2/2H full rate production decision and no DoD IG recommendations were made for this finding, no comments are given. The DoD IG requested JTIDS JPO comments on the potential monetary benefits identified in the finding and in Appendix C. JPO comments will be provided when the component breakout review is completed prior to the Full Rate Production decision in early 1995.

FINDING B. - Navy Operational Testing. The Navy operational tests will not provide the DAB with objective operational test results in support of the Class 2/2H terminal full rate production (FRP) decision

DoD RESPONSE: Partially concur.

Recommendation B.1.a. We concur with the DoD IG finding that Measures of Effectiveness (MOEs) should be included in the JTIDS Test and Evaluation Master Plan (TEMP). The Navy acquisition staff has been working closely with the Navy and OSD test communities (DT&E and OT&E) over the last six months to establish traceability of MOEs to critical test parameters in the test plan. DOT&E informed the Navy on October 14, 1993, that approval to enter OT-IE (OPEVAL July 1994) will not occur until there is an OSD approved TEMP with the required mission-level measures of operational effectiveness and suitability. The current Navy program schedule proposes a TEMP submission to OSD in February 1994.

Recommendations B.1.b. and B.1.c. We do not concur that all existing test deficiencies must be corrected prior to OPEVAL or that all host platform interface problems require immediate correction. The Navy test community and the OSD test communities have clearly stated that OPEVAL will not be conducted unless the Navy corrects those deficiencies which impact mission performance and affect the test communities ability to determine whether JTIDS is operationally effective and operationally suitable. Neither the test communities nor the TEMP require all deficiencies to be corrected prior to OPEVAL, since to do so was viewed as impractical or unnecessary and that such a requirement would unnecessarily delay the overall JTIDS implementation.

Recommendations B.2. We do not concur that a special DAB is required prior to the Navy OPEVAL testing. The Navy and OSD test communities have clearly stated that OPEVAL will not be conducted unless the Navy corrects those deficiencies which impact mission performance and affect the test communities ability to determine whether JTIDS is operationally effective and suitable.

FINDING C. - JTIDS Class 2M Terminal Funding. The Class 2M terminal production requirements were not fully funded in the FYDP for FYs 1994-1999

DoD RESPONSE: Partially concur.

We concur with DoD IG that Army and BMDO acquisition problems associated with the Class 2M terminal must be resolved as soon as possible. The Ballistic Missile Defense Organization (BMDO) has encouraged the use of JTIDS as the Theater Missile Defense (TMD) internetting standard. BMDO will fund JTIDS terminals for those systems over which they have responsibility. Currently, BMDO has funding responsibility for the Army TMD programs Theater High Altitude Defense (THAAD), upgrade to the PATRIOT missile (PATRIOT PAC-3), and CORPS SAM. BMDO will fully fund 89 Class 2M terminals required for THAAD. THAAD requires only 45 terminals in the FY95-99 FYDP, the remainder will be funded in the outyears. BMDO has funded 48 JTIDS terminals for PATRIOT PAC-3 requirements in FY97-98. It is too early to establish firm Class 2M terminal requirements for CORPS SAM, since CORPS SAM has not completed Milestone I. The PATRIOT PAC-3 requirements for 206 terminals may be overstated at this time. In summary, the BMDO has identified and funded a requirement for a total of 93 JTIDS Class 2M terminals for FY94-99.

Brigade Tactical Operation Centers (BTOC) and the Joint Tactical Ground Stations (JTAGS) are Army programs for which BMDO is not responsible. The BMDO and the Army have concerns regarding the requirements for JTIDS Class 2M terminals below battalion level considering the Army's recently reduced data throughput requirements at that level. The Army has been asked to reevaluate this requirement and is in the process of doing so. Both the Army and BMDO are waiting for the results of this study before committing additional funds. The Army and BMDO will determine the valid PATRIOT Class 2M terminal requirement based upon sound engineering and operational analysis, which is anticipated to be completed in the third quarter of FY94.

Recommendation C.1. and C.2. and C.3. Since the Army and BMDO are actively trying to reach closure on many complex TMD JTIDS Class 2M funding and requirements issues by the third quarter of FY94, and since the JTIDS Class 2M program is an ACAT ID designated program, we do not concur that the USD (A&T) needs to oversee and resolve these negotiations at this time as recommended in the draft report.

FINDING D. - Cost and Operational Effectiveness Analysis (COEA). The Joint Program Office (JPO) did not plan to perform a COEA for the JTIDS Class 2/2H Milestone III Full Rate Production (FRP) DAB decision.

DoD RESPONSE: Concur.

A COEA was not required of the overall JTIDS program at Milestone II in December 1981 nor in September 1989, when the program prepared for the Milestone IIIA Low Rate Initial Production (LRIP) DAB decision. During the 1989 DAB discussions, however, PA&E made an issue of the Air Force reluctance to equip its fighters with JTIDS. As a result of these discussions, the Air Force was directed by the ADM to equip its fighters with the 34 JTIDS terminals it had purchased OR put the terminals into other Air Force platforms (provided a COEA was developed for each platform) OR turn the 34 terminals over to the Navy to reduce overall JTIDS program costs.

Recently, the Air Force began conducting Operational Utility Evaluations (OUEs) at Mountain Home AFB, Idaho, to evaluate JTIDS in a squadron of F-15s using the available JTIDS terminals. As a result, the Air Force is in the process of complying with the 1989 DAB direction, although belatedly. Currently, the JTIDS program has awarded the last of four LRIP lots and is preparing to request a full rate production (FRP) decision of the DAB in FY95 for various Service Command and Control (C2) platforms.

In the recent Multifunctional Information Distribution System (MIDS) - Low Volume Terminal (MIDS-LVT) Milestone II DAB decision, the USD (A&T) accepted the PA&E recommendation to recognize JTIDS / LINK-16 in policy as DoD's primary data link system for Joint C2 and Intelligence applications and to enforce that policy in order to reduce the proliferation of data links. The Air Force has initiated meetings with OSD offices as a result of this DAB guidance to investigate the scope of a COEA needed for the JTIDS program as it enters a Milestone III DAB decision for FRP.

Director, Ballistic Missile Defense Organization, Comments



DEPARTMENT OF DEFENSE
BALLISTIC MISSILE DEFENSE ORGANIZATION
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

GTI

January 30, 1994

MEMORANDUM FOR DEPUTY DIRECTOR, ACQUISITION MANAGEMENT
DIRECTORATE, DODIG

SUBJECT: DODIG Draft Audit Report on the Acquisition of the
Joint Tactical Information Distribution System (Project
No. 3AS-0010)

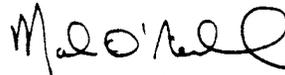
This memorandum provides comments requested in your November 9, 1993 memorandum. Ballistic Missile Defense Organization (BMDO) nonconcur with the recommendation and some of the background information in Finding C. The following is provided as clarification:

- a. The BMDO is committed to the use of Joint Tactical Information Distribution System (JTIDS) as the theater missile defense (TMD) internetting standard. Joint Tactical Information Distribution System is a DOD standard data link which supports the TMD data throughput requirements and also meets the interoperability needs of the Services and our NATO allies. The BMDO concurs that they have the responsibility to fund the corresponding communications equipment required by weapon system developments for which they have funding responsibility, including JTIDS. For the Army TMD programs, the BMDO currently only has funding responsibility for Theater High Altitude Air Defense (THAAD), upgrade to Patriot missile (Patriot PAC-3) and Corps SAM. We do not have the funding responsibility for the Brigade Tactical Operation Center (BTOC), and the Joint Tactical Ground Station (JTAGS).
- b. The BMDO intends to fund the 89 JTIDS terminals required for THAAD. The THAAD overall program cost estimate includes the terminal costs. Theater High Altitude Air Defense is currently in DEM/VAL and will not enter EMD until 1997. Most of the terminals will not be required until after 1999. The BMDO has funded 45 JTIDS terminals in FY 94-99. The remainder of the THAAD terminal requirements will be funded in the outyears beyond the FYDP. This funding profile is consistent with the THAAD program schedule.
- c. The BMDO does not concur that the other requirements listed in Appendix E of the report are accurate, currently valid, or a BMDO responsibility. As in the THAAD case above, not all the terminals are required in FY 94-99. BTOC and

JTAGs are Army programs and are not a BMDO responsibility. Corps SAM has not completed Milestone I and therefore it is too early to establish firm JTIDS requirements.

d. The BMDO recognizes a Patriot PAC-3 requirement for 48 terminals and has funded these terminals in FY 97-98. The BMDO has legitimate concerns regarding the requirement for JTIDS terminals below battalion level considering the reduced data throughput requirements at that level. The Army has been asked to reevaluate this requirement and is in the process of doing so. BMDO is waiting on the results of this study before committing to additional funds.

The BMDO has identified a firm FY 94-99, Class 2M JTIDS requirement for 93 terminals. The Army and BMDO will determine the valid Patriot requirement based on sound engineering and operational analysis to be completed 3Q FY 94. The USD(A) does not need to resolve these negotiations as recommended in the draft audit report.



MALCOLM R. O'NEILL
Lieutenant General, USA
Director

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