Audit Report

OFFICE OF THE INSPECTOR GENERAL

ACQUISITION AND MANAGEMENT OF MAINTENANCE AND DIAGNOSTIC AUTOMATIC TEST EQUIPMENT

Report Number 92-095

May 21, 1992

Department of Defense

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

May 21, 1992

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (PRODUCTION AND LOGISTICS)

SUBJECT: Summary Audit Report on the Acquisition and Management of Maintenance and Diagnostic Automatic Test Equipment (Report No. 92-095)

We are providing this summary report for your information and use. It addresses matters of DoD-wide concern on the acquisition and management of maintenance and diagnostic automatic test equipment by the Military Departments. Findings specific to the Military Departments were included in separate audit reports.

A draft of this report was provided to the addressee for comments on February 20, 1992. As of May 18, 1992, no comments were received. DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Assistant Secretary of Defense (Production and Logistics) provide comments to the final report by July 20, 1992. As required by DoD Directive 7650.3, the comments should indicate concurrence or nonconcurrence with the finding and recommendations. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, please state your specific reasons. If appropriate, you may propose alternative methods for accomplishing desired improvements. This report should assist in achieving the monetary benefits identified in the separate audit reports issued on each Military Department. No additional quantifiable monetary benefits are identified in this report. Recommendations are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment. We also ask that your comments indicate concurrence or nonconcurrence with the internal control weaknesses highlighted in Part I.

The courtesies extended to the audit staff are appreciated. If you have any questions on this audit, please contact

Mr. Dennis Payne at (703) 614-6227 (DSN 224-6227) or Mr. Tilghman Schraden at (703) 693-0624 (DSN 223-0624). The distribution of this report is listed in Appendix F.

Edward R. Jones
Deputy Assistant Inspector General
for Auditing

Enclosure

cc:
Secretary of the Army
Secretary of the Navy
Secretary of the Air Force

Office of the Inspector General, DoD

AUDIT REPORT NO. 92-095 May 21, 1992
(Project No. OLB-0087)

ACQUISITION AND MANAGEMENT OF MAINTENANCE AND DIAGNOSTIC AUTOMATIC TEST EQUIPMENT

EXECUTIVE SUMMARY

Introduction. As part of our DoD-wide Audit of the Acquisition and Management of Maintenance and Diagnostic Automatic Test Equipment, this report describes our evaluation of the effectiveness of DoD-wide guidance and procedures for monitoring the acquisition and management of the equipment. The report also summarizes findings specific to the Military Departments as detailed in separate audit reports. Although no complete records exist showing the value of the total inventory of maintenance and diagnostic automatic test equipment, in 1985, the then Assistant Secretary of Defense (Manpower, Installations, and Logistics) estimated that the total value of all test equipment, including automatic test equipment, was $31 billion.

Objectives. Our overall audit objectives were to evaluate the effectiveness of internal controls over the acquisition and management of maintenance and diagnostic automatic test equipment by the Military Departments. The specific objective of this part of the audit was to evaluate the effectiveness of DoD-wide guidance and procedures for monitoring the acquisition and management of maintenance and diagnostic automatic test equipment.

Audit Results. Management deficiencies by the Military Departments and the lack of uniform and comprehensive DoD-wide policy and guidance contributed to the continued proliferation of maintenance and diagnostic automatic test equipment and has seriously affected the cost-effectiveness of acquisitions.

Internal Controls. Material internal control weaknesses are described in the Finding. Additional details are provided in the internal controls section of Part I of this report.

Potential Benefits of Audit. The separate reports covering the results of audit within each Military Department identified $307.7 million in estimated savings over the 6-year Future Years Defense Program. Implementation of this report's recommendations should assist in achieving these savings. No additional quantifiable monetary benefits are claimed in this report.

Summary of Recommendations. We recommended that comprehensive and uniform DoD-wide policy and guidance on the acquisition and management of maintenance and diagnostic automatic test equipment be developed and implemented and that clear Office of the Secretary of Defense oversight responsibilities be made.

Management Comments. No comments were received in response to the draft report issued on February 20, 1992. Comments are requested from the Assistant Secretary of Defense (Production and Logistics) by July 20, 1992.

TABLE OF CONTENTS

	Page
TRANSMITTAL MEMORANDUM	1
EXECUTIVE SUMMARY	i
PART I - INTRODUCTION	1
Background	1
Objectives	1
Scope	1
Internal Controls	2
Prior Audits and Other Reviews	2
PART II - FINDING AND RECOMMENDATIONS	5
Acquisition and Management of Maintenance and Diagnostic Automatic Test Equipment	5
PART III - ADDITIONAL INFORMATION	11
APPENDIX A - Summary of Results of Our Audit in Army	13
APPENDIX B - Summary of Results of Our Audit in Navy	15
APPENDIX C - Summary of Results of Our Audit in Air Force	17
APPENDIX D - Summary of Potential Benefits Resulting from Audit	19
APPENDIX E - Activities Visited or Contacted	21
APPENDIX F - Report Distribution	23

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

PART I - INTRODUCTION

Background

Maintenance and diagnostic automatic test equipment is used to support the electronic maintenance testing requirements of weapon systems at the depot, organizational, and field levels of maintenance, including maintenance provided at contractor facilities. It includes test programs sets (primarily computer software) used to adapt automatic test equipment systems to the unique testing requirements of specific weapon systems. Although no complete records exist showing the value of automatic test equipment, in 1985, the Assistant Secretary of Defense (Manpower, Installations, and Logistics), now the Assistant Secretary of Defense (Production and Logistics), estimated that the value of all test equipment, including automatic test equipment, was $31 billion. The Assistant Secretary established the DoD Test Equipment Management Improvement Program in 1985 to improve the acquisition and management of test equipment. Responsibilities within the Office of the Assistant Secretary of Defense (Production and Logistics) for the DoD Test Equipment Management Improvement Program were divided, during our audit, between the Director of Maintenance Policy and the Director of the Weapon Systems Improvement Group.

This report, the fourth in a series of four, addresses matters of DoD-wide concern on the acquisition and management of maintenance and diagnostic automatic test equipment. Findings specific to the Military Departments are detailed in separate audit reports (see Appendices A, B, and C for summaries of these reports).

Objectives

Our overall audit objective was to evaluate the effectiveness of internal controls over the acquisition and management of maintenance and diagnostic automatic test equipment by the Military Departments. The specific objective of this part of the audit was to evaluate the effectiveness of DoD-wide guidance and procedures.

Scope

Review of guidance and procedures. We reviewed DoD guidance and procedures for monitoring the acquisition and management of maintenance and diagnostic automatic test equipment covering the period from 1985 through 1991. We also interviewed key personnel within the Office of the Assistant Secretary of Defense (Production and Logistics) concerning procedures for overseeing the acquisition and management of the equipment.

Auditing standards. This economy and efficiency audit was made from September 1990 through January 1992 in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD, and accordingly, included such tests of internal controls as were considered necessary. Activities visited or contacted during the audit are listed in Appendix E.

Internal Controls

Controls assessed. We evaluated internal controls associated with DoD-wide guidance and procedures for monitoring the acquisition and management of maintenance and diagnostic automatic test equipment. This included an evaluation of whether controls were sufficient to prevent the proliferation of maintenance and diagnostic automatic test equipment and to ensure that acquisitions were cost-effective.

Internal control weaknesses. The audit identified material internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effective to prevent the proliferation of maintenance and diagnostic automatic test equipment and to ensure that acquisitions were cost-effective. These internal control weaknesses are discussed in detail in Part II of this report. All recommendations in this report, if implemented, will assist in correcting these weaknesses. As shown in Appendix D, implementation of the report's recommendations will assist in achieving the $307.7 million in estimated savings over the 6-year Future Years Defense Program, identified in the separate reports covering the results of audit performed at each Military Department. No additional quantifiable monetary benefits are identified in this report. A copy of the report will be provided to the senior official responsible for internal controls within the Office of the Secretary of Defense.

Prior Audits and Other Reviews

The results of the last DoD-wide review were presented in Inspector General, DoD, Report No. 84-002, "Automatic Test Equipment," October 25, 1983. The report concluded that Military Department managers did not have the authority or data needed to properly manage their automatic test equipment programs. None of the Military Departments had a viable system to record and report automatic test equipment location, condition, or use. These conditions occurred because automatic test equipment management responsibilities were fragmented in each of the Military Departments. As a result, $14.1 million of automatic test equipment included in the audit sample was underutilized and could have been used to satisfy more urgent requirements within the Military Departments. The full extent of underutilized

equipment was not determined. The report recommended that managers of fielded equipment be authorized to redistribute underused automatic test equipment. The report also recommended that an information system be developed to collect comprehensive status data about automatic test equipment.

PART II - FINDING AND RECOMMENDATIONS

ACQUISITION AND MANAGEMENT OF MAINTENANCE AND DIAGNOSTIC AUTOMATIC TEST EQUIPMENT

The DoD Test Equipment Management Improvement Program's objectives for improving the acquisition and management of maintenance and diagnostic automatic test equipment have not been fully achieved. This condition occurred primarily because of management deficiencies by the Military Departments. The lack of uniform and comprehensive DoD-wide policy and guidance also contributed to these deficiencies. As a result, the proliferation of maintenance and diagnostic automatic test equipment has continued and the cost-effectiveness of acquisitions has been affected. The separate audit reports issued on each of the Military Departments identified $307.7 million in savings that can be achieved over the 6-year Future Years Defense Program by reducing the proliferation of equipment and by increasing the cost-effectiveness of acquisitions.

DISCUSSION OF DETAILS

Background

The Assistant Secretary of Defense (Manpower, Installations, and Logistics), now the Assistant Secretary of Defense (Production and Logistics), established the DoD Test Equipment Management Improvement Program in 1985. As stated in the Assistant Secretary's June 26, 1985 memorandum, "DoD Test Equipment Management Improvement Program," the Program was established due to the increasing proliferation of test equipment, including automatic test equipment, and the large investment by DoD in this type of equipment. The Assistant Secretary reported that DoD had more than 80,000 different types of electronic test equipment that was supported by 14,000 different test program sets (primarily computer software that test and diagnose electronic equipment). The reported estimated total value of test equipment was $31 billion.

The Assistant Secretary's memorandum established the following objectives for improving the acquisition and management of automatic test equipment.

- Develop and implement DoD-wide policy on the management and support of test equipment.

- Institute a reporting process on automatic test equipment availability.

- Maximize the standardization of automatic test equipment.

o Increase consolidation of automatic test equipment procurements.

o Improve utilization of automatic test equipment.

DoD-wide Policy

Although an objective of the DoD Test Equipment Management Improvement Program was to develop and implement DoD-wide policy on the management and support of test equipment, no new policy was established to provide uniform and comprehensive guidance. Instead, reliance was placed on DoD regulations issued before 1985 and guidance issued by each Military Department. Each Military Department implemented and developed varying and differing approaches to the acquisition and management of maintenance and diagnostic automatic test equipment. For example, the Army and Navy developed standard automatic test equipment systems to be used for the maintenance of multiple weapon systems, while the Air Force relied on a set of standardized procedures, software, and tools to develop automatic test equipment. As described below and in the individual reports provided to each Military Department, none of these approaches were fully effective in meeting the objectives of the DoD Test Equipment Management Improvement Program.

As stated in a July 1986 study report issued by the Logistics Management Institute, "Management of Electronic Test Equipment," existing DoD regulations were inadequate because they lacked explicit policy on test equipment management, had confusing and inexact definitions of automatic test equipment, and were conflicting. During our review, these conditions still existed.

Reporting process. The objective to institute a reporting process on automatic test equipment availability has not been fully achieved. Only the Army maintained a centralized management system on maintenance and diagnostic automatic test equipment, including test program sets, being developed, being procured, or in the existing inventory. This centralized Army management system did not provide usage data. Both the Navy and the Air Force had inadequate reporting processes that did not provide accurate and complete information.

Standardization of automatic test equipment. The objective of maximizing the standardization of automatic test equipment has not been achieved. No substantial effort has been made by the Office of the Secretary of Defense or the Military Departments to increase the standardization of automatic test equipment between the Military Departments. The success of each Military Department's effort to increase the standardization of automatic test equipment within its respective Department has varied significantly.

Army. The Army's Integrated Family of Test Equipment Program has been partially successful in meeting its objective of developing and acquiring standard automatic test equipment to be used Army-wide. As summarized in Appendix A, additional improvements do, however, need to be made.

Navy. The Navy's Consolidated Automated Support System Program was intended to reduce the proliferation of unique automatic test equipment by developing and acquiring standardized automatic test equipment to be used for intermediate and depot level electronic maintenance throughout the Navy. However, divided responsibilities within the Navy for implementing the Consolidated Automated Support System Program have resulted in the standard equipment being acquired primarily by Naval Air Systems Command maintenance activities. Only one Naval Sea Systems Command maintenance activity and two Space and Naval Warfare Systems Command weapon system programs had developed plans to acquire the standardized automatic test equipment.

Air Force. The Air Force's Modular Automatic Test Equipment Program was so deficient in meeting its objective of reducing the proliferation of automatic test equipment by increasing standardization that the Program was canceled. The Air Force is developing a replacement program.

Consolidation of automatic test equipment procurements. The DoD objective to increase the consolidation of automatic test equipment procurements has not been fully achieved. Consolidation of procurements has been partially successful within the Army and the Navy; however, no substantial effort has been made to consolidate procurements between the Military Departments. This ties in directly with the lack of efforts to increase the standardization of automatic test equipment between the Military Departments. For example, both the Army, through its Integrated Family of Test Equipment Program, and the Navy, through its Consolidated Automated Support System Program, have developed standard automatic test equipment that is adaptable for use for electronic maintenance of several weapon systems, including those of the other Military Departments. However, there are no DoD-wide policies and procedures in place that would provide for this cross-service use. By maximizing the DoD-wide use of already developed standard equipment and related software, the Military Departments could reduce requirements and related costs of developing new standard equipment and software. Additionally, procurement savings through consolidated DoD-wide procurements may be realized.

Utilization of automatic test equipment. The objective to improve the utilization of automatic test equipment has not been fully achieved. For example, although the Army data base of automatic test equipment was generally adequate, it did not fully

reflect the utilization of existing equipment. As a result, the Army missed opportunities to avoid unnecessary acquisitions of new equipment by using available underutilized equipment. The Navy and the Air Force also may have missed opportunities to avoid unnecessary acquisitions because they lacked a centralized data base.

Office of the Secretary of Defense Oversight

Responsibilities within the Office of the Assistant Secretary of Defense (Production and Logistics) for oversight of the DoD Test Equipment Management Improvement Program were divided, at the time of our audit, between the Director of Maintenance Policy and the Director of the Weapon Systems Improvement Group. Neither of the directors had a clear mandate on the division of responsibilities. The lack of a clear mandate hampered the ability of the Office of the Secretary of Defense to provide the oversight needed to help maximize the standardization of automatic test equipment, to increase consolidations of automatic test equipment procurements, and to ensure efficient utilization of automatic test equipment.

The need for clearly assigned oversight responsibilities within the Office of the Secretary of Defense is illustrated by the automatic test equipment developed under the Army's Integrated Family of Test Equipment Program and the Navy's Consolidated Automated Support System Program. These programs had similar objectives, which resulted in the development of similar standardized automatic test equipment. The standard automatic test equipment developed under both programs can be adapted for use on several Army, Navy, and Air Force weapon systems. Considering the similarities between the Army and Navy standard automatic test equipment development programs, their consolidation may have resulted in significant savings in development costs. By adapting either the Army's or the Navy's standard automatic test equipment systems and related software, the Air Force should be able to avoid the cost of developing a third similar system. Clearly assigned Office of the Secretary of Defense oversight responsibilities can help to prevent future multiple developments of similar automatic test equipment and help to achieve multi-Service use of already developed automatic test equipment.

RECOMMENDATIONS FOR CORRECTIVE ACTIONS

We recommend that the Assistant Secretary of Defense (Production and Logistics):

1. Develop and implement uniform and comprehensive DoD-wide policy and guidance on the acquisition and management of maintenance and diagnostic automatic test equipment. The policy and guidance should include:

a. A requirement for each Military Department to assign clear and undivided management responsibility for overseeing the Military Department's acquisition, distribution, and utilization of maintenance and diagnostic automatic test equipment.

b. A requirement for each Military Department to maintain and share with the other Military Departments a complete and accurate data base of all maintenance and diagnostic automatic test equipment, including test program sets, being developed, being procured, or in the existing inventory. This should include utilization records that can be used to identify underutilized automatic test equipment that can be transferred to meet the requirements of other Military Departments.

c. The establishment of procedures for coordination between the Military Departments to maximize the opportunities for using already developed standard automatic test equipment and to maximize the opportunities for achieving savings through consolidated procurements. This should include procedures providing for sufficient authority to be exercised at the Office of the Secretary of Defense level to prevent the Military Departments from developing major new standard automatic test equipment systems that duplicate standard equipment and software already developed by another Military Department.

2. Assign clear Office of the Secretary of Defense responsibility for overseeing the Military Departments' acquisition and management of maintenance and diagnostic automatic test equipment and related software.

MANAGEMENT COMMENTS AND AUDIT RESPONSE

Management comments were requested from the Assistant Secretary of Defense (Production and Logistics) on February 20, 1992. As of May 18, 1992, no comments were received. Therefore, we request comments from the Assistant Secretary of Defense (Production and Logistics) by July 20, 1992.

PART III - ADDITIONAL INFORMATION

APPENDIX A - Summary of Results of Our Audit in Army

APPENDIX B - Summary of Results of Our Audit in Navy

APPENDIX C - Summary of Results of Our Audit in Air Force

APPENDIX D - Summary of Potential Benefits Resulting from Audit

APPENDIX E - Activities Visited or Contacted

APPENDIX F - Report Distribution

APPENDIX A: SUMMARY OF RESULTS OF OUR AUDIT IN ARMY

AUDIT REPORT NO. 92-031
DEVELOPMENT AND ACQUISITION OF DOD MAINTENANCE AND DIAGNOSTIC SYSTEMS-ARMY
(December 26, 1991)

Background. The Integrated Family of Test Equipment Program was initiated by the Army in 1986 to reduce the proliferation of unique automatic test equipment that was being procured for each of the Army's weapon systems. Standard equipment developed under the Integrated Family of Test Equipment Program was designed to provide multi-functional testing capability of electronic components for major weapon systems. Over the 6-year Future Years Defense Program (FY 1992 through FY 1997) the Army planned, at the time of audit, to spend $2.6 billion to transition to the new standard equipment. The Army advised us in responding to our draft report that the Army has revised the estimated 5-year expenditures for new standard equipment to $600 million.

Objectives. Our audit objectives were to evaluate the compatibility, cost, performance, and other characteristics of various maintenance test and diagnostic systems being procured or scheduled for procurement. Special emphasis was placed on evaluating the transitioning to new equipment developed under the Army's Integrated Family of Test Equipment Program.

Audit Results. The Army was not effectively planning the acquisition and distribution of automatic test equipment.

o The Army planned to prematurely replace its simplified test equipment for the Abrams tank and Bradley fighting vehicle with new equipment developed under its Integrated Family of Test Equipment Program. Additionally, planned procurements of simplified test equipment exceeded requirements. As a result, the Army will not obtain full utility from existing test equipment and will incur unneeded interest cost to support premature procurements of the replacement equipment. Actions have been taken by the Army to reduce procurements of simplified test equipment.

o The Army planned to prematurely replace electro-optical automatic test equipment for the Tube-launched Optically-tracked Wire-guided (TOW) missile with new equipment developed under its Integrated Family of Test Equipment Program. As a result, the Army will not obtain full utility from existing test equipment and will incur unneeded interest cost to support premature procurements of the replacement equipment.

o The Army did not adequately justify the need for new electro-optical test equipment for the Abrams tank. As a result, there was no assurance that the equipment was needed.

o Government contractors and Army maintenance depots did not fully use commercial equivalent automatic test equipment. As a result, requirements for commercial equivalents were overstated.

Internal Controls. Internal controls were not sufficient to provide for full compliance with Army planning requirements for justifying the development and acquisition of automatic test equipment.

Potential Benefits of Audit. We estimated that savings of $307.7 million are achievable over the 6-year Future Years Defense Program from implementing the report's recommendations.

Summary of Recommendations. We recommended that the Army delay the replacement of automatic test equipment for the Abrams tank, Bradley fighting vehicle, and TOW missile; not procure electro-optical test equipment for the Abrams tank unless it can be economically justified; and cancel unneeded procurements of commercial equivalent test equipment. We also recommended that the Army improve its overall planning procedures for transitioning to new automatic test equipment under its Integrated Family of Test Equipment Program.

Management Comments. In responding to the final report, the Army disagreed with the recommendation to delay the replacement of automatic test equipment for the Abrams tank, Bradley fighting vehicle, and TOW missile based on an economic life expectancy for existing equipment of 7 years instead of 20 years. Army also disagreed with the recommendation not to procure electro-optical test equipment for the Abrams tank unless it can be economically justified based on the absence of an electro-optical testing capability at the organizational level of maintenance.

Audit Response. The Army should optimize the investment in existing test equipment and field new equipment only when it can be economically justified. We believe it was imprudent for the Army to change the life expectancy of existing test equipment from 20 years to 7 years (65 percent reduction) to justify the procurement of new equipment. We also believe it was imprudent, considering the absence of any significant documented maintenance deficiency, to proceed with plans to invest $554 million for new electro-optical test equipment for the Abrams tank. We requested mediation on these recommendations by the Assistant Inspector General for Analysis and Followup.

APPENDIX B: SUMMARY OF RESULTS OF OUR AUDIT IN NAVY

AUDIT REPORT NO. 92-022
DEVELOPMENT AND ACQUISITION OF DOD MAINTENANCE AND DIAGNOSTIC SYSTEMS-NAVY
(December 17, 1991)

Background. The Consolidated Automated Support System Program was initiated by the Navy to reduce the proliferation of unique automatic test equipment being procured for each of the Navy's weapon systems. In 1985, the Secretary of the Navy designated Consolidated Automated Support System equipment as the standard automatic test equipment for intermediate and depot level electronic maintenance throughout the Navy. The Navy plans to spend $2.5 billion to transition to the new standard equipment.

Objectives. Our audit objectives were to evaluate the compatibility, cost, performance, and other characteristics of various maintenance test and diagnostic systems being procured or scheduled for procurement. Special emphasis was placed on evaluating the plans for transitioning to the Consolidated Automated Support System test equipment.

Audit Results. The Navy's plans for transitioning to the standard automatic test equipment developed under its Consolidated Automated Support System Program have not been fully effective. As a result, potential savings opportunities have been missed because work load and economic analyses were not performed by several Navy activities to determine if it was feasible and economical to transition from existing test equipment for their weapon systems to Consolidated Automated Support System test equipment.

Internal Controls. Internal controls were not sufficient to adequately control the acquisitions of automatic test equipment.

Potential Benefits of Audit. Savings opportunities should be achieved by improving internal controls over the acquisitions of automatic test equipment.

Summary of Recommendations. We recommended that the Navy develop and implement an effective internal control management system to monitor the Navy-wide development, acquisition, and distribution of test, measurement, and diagnostic equipment. This included recommendations to assign clear management oversight responsibilities and to maximize the reuse of Consolidated Automated Support Systems used initially for test program set development.

Management Actions. The Navy has agreed to implement the recommendations.

APPENDIX C: SUMMARY OF RESULTS OF OUR AUDIT IN AIR FORCE

AUDIT REPORT NO. 92-037
EFFECTIVENESS OF THE AIR FORCE'S INTERNAL CONTROLS OVER THE DEVELOPMENT AND ACQUISITION OF MAINTENANCE AND DIAGNOSTIC SYSTEMS
(January 23, 1992)

Background. We evaluated the effectiveness of the Air Force's principal program for monitoring the development and acquisition of maintenance and diagnostic systems, the Modular Automatic Test Equipment (MATE) Program. The Air Force established the MATE Program in 1976 to help reduce the proliferation of automatic test equipment. This reduction was to be accomplished by limiting the need to develop unique test equipment for Air Force weapon systems by providing a set of standardized procedures, software, and tools for Air Force activities to use in developing automatic test equipment. During the audit, the Office of the Secretary of Defense determined that the MATE Program was ineffective and the Air Force planned to replace it with a new program.

Objectives. Our audit objectives were to evaluate the effectiveness of the Air Force's internal controls over the development and acquisition of maintenance and diagnostic systems.

Audit Results. Air Force Systems Command's product divisions and Air Force Logistics Command's logistics centers were not complying with Air Force guidance for acquiring standardized automatic test equipment. As a result, there was continued proliferation of equipment and no assurance that the Air Force was acquiring automatic test equipment cost-effectively.

Internal Controls. Internal controls were not sufficient to adequately control the acquisitions of automatic test equipment.

Potential Benefits of Audit. Implementation of the report's recommendations should result in the Air Force reducing acquisition and development costs by acquiring standardized automatic test equipment and related software. We were not able to quantify the monetary benefits.

Summary of Recommendations. We recommended that the Air Force develop and implement an effective internal control management system for monitoring the development and acquisition of automatic test equipment. We also recommended that the Air Force approve developments of new automatic test equipment only if the Army's Integrated Family of Test Equipment and the Navy's Consolidated Automated Support System prove not to be cost-effective acquisitions for Air Force weapon systems.

Management Comments. The Air Force agreed to implement an effective internal control management system. However, the Air Force disagreed that it should acquire the Army's Integrated Family of Test Equipment or the Navy's Consolidated Automated Support System whenever it was cost-effective to do so because the Air Force believed the Army and Navy's systems were too primitive.

Audit Response. The Air Force should evaluate the Army's Integrated Family of Test Equipment and the Navy's Consolidated Automated Support System on a case-by-case basis for applications to each of the Air Force's weapon systems. The Army and Navy's systems offer the Air Force an excellent opportunity to use the most recent standard automatic test equipment and related software while saving the Air Force the research, development, and procurement costs related to new automatic test equipment acquisitions. We requested mediation on this recommendation by the Assistant Inspector General for Analysis and Followup.

APPENDIX D: SUMMARY OF POTENTIAL BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefit	Type of Benefit
1.	Internal Control. Effective DoD-wide policy and guidance on the acquisition and management of maintenance and diagnostic automatic test equipment will be developed.	Funds Put to Better Use. No quantifiable monetary benefits are claimed in this report ($307.7 million in estimated savings over the 6-year Future Years Defense Program was identified in the separate reports issued on the results of this audit for each Military Department).
2.	Internal Control. Establishes clear responsibility for Office of the Secretary of Defense oversight of the Military Departments' acquisition and management of maintenance and diagnostic automatic test equipment.	Included in 1.

APPENDIX E: ACTIVITIES VISITED OR CONTACTED

Office of the Secretary of Defense

Deputy Assistant Secretary of Defense (Logistics), Office of the Assistant Secretary of Defense (Production and Logistics), Washington, DC

Department of the Army

Office of the Deputy Chief of Staff for Logistics, Washington, DC
Army Armament, Munitions, and Chemical Command, Rock Island, IL
Army Aviation Systems Command, St. Louis, MO
Army Materiel Command, Alexandria, VA
Army Missile Command, Huntsville, AL
Army Tank and Automotive Command, Warren, MI
Army Central Test, Measurement, and Diagnostic Equipment Activity, Lexington, KY
Army Program Manager for Test, Measurement, and Diagnostic Equipment, Fort Monmouth, NJ
Army Test, Measurement, and Diagnostic Equipment Support Group, Huntsville, AL
Army Ordnance Center and School, Aberdeen Proving Ground, MD
Army Armor Center and School, Fort Knox, KY
Army Ordnance Missile and Munitions Center and School, Redstone Arsenal, Huntsville, AL
Anniston Army Depot, Anniston, AL
Tobyhanna Army Depot, Tobyhanna, PA

Department of the Navy

Office of the Assistant Secretary of the Navy (Research, Development and Acquisition), Washington, DC
Naval Air Systems Command, Arlington, VA
Naval Sea Systems Command, Arlington, VA
Space and Naval Warfare Systems Command, Arlington, VA
Naval Air Test Center, Patuxent River, MD
Shore Intermediate Maintenance Activity, Norfolk, VA
Naval Weapons Support Center, Crane, IN
Naval Undersea Warfare Engineering Station, Keyport, WA
Naval Aviation Depot, Jacksonville, FL
Naval Air Station, Lemoore, CA
Marine Corps Air Station, El Toro, CA
Aviation Intermediate Maintenance Depot, San Diego, CA
Naval Aviation Depot, San Diego, CA

APPENDIX E: ACTIVITIES VISITED OR CONTACTED (cont'd)

Department of the Air Force

Office of the Deputy Chief of Staff for Logistics and Engineering, Washington, DC
Air Force Logistics Command, Wright-Patterson Air Force Base, OH
Air Force Systems Command, Andrews Air Force Base, MD
San Antonio Air Logistics Center, Kelly Air Force Base, TX
Warner Robins Air Logistics Center, Robins Air Force Base, GA
Air Force Aeronautical Systems Division, Wright-Patterson Air Force Base, OH
Air Force Electronic Systems Division, Hanscom Air Force Base, MA

Non-DoD Activities

Boeing Corporation, Huntsville, AL
General Dynamics, Land Systems Division, Warren, MI
General Electric Corporation, Huntsville, AL
Softech Corporation, Dayton, OH

APPENDIX F: REPORT DISTRIBUTION

Office of the Secretary of Defense

Assistant Secretary of Defense (Production and Logistics)
Assistant Secretary of Defense (Public Affairs)
Comptroller of the Department of Defense

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Financial Management)
Army Audit Agency

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Naval Audit Service

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Air Force Audit Agency

Defense Agencies

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

Non-DoD Activities

Office of Management and Budget
  National Security Division, Special Projects Branch
U.S. General Accounting Office
  NSIAD Technical Information Center
  NSIAD Director for Logistics

Congressional Committees

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Government Affairs
Ranking Minority Member, Senate Committee on Armed Services
House Committee on Appropriations

APPENDIX F: REPORT DISTRIBUTION (cont'd)

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

LIST OF AUDIT TEAM MEMBERS

Shelton R. Young, Director, Logistics Support Directorate
Dennis E. Payne, Program Director
Tilghman A. Schraden, Project Manager
Laveta C. Charity, Team Leader
Hassan A. Soliman, Team Leader
Michael A. Tarlaian, Team Leader
Douglas M. Warish, Team Leader
Henry V. Adu, Auditor
Jed L. Harrison, Auditor
Luis B. Marcano Roman, Auditor
Milton Kaufman, Engineering Specialist