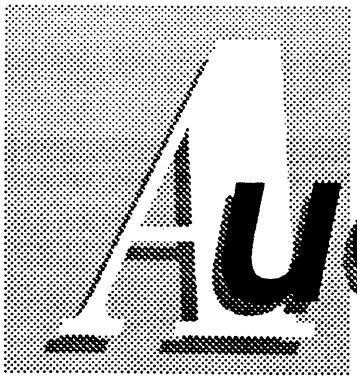


OFFICE OF THE INSPECTOR GENERAL

THE AVENGER FORWARD-LOOKING INFRA-RED SYSTEM

Report No. 96-221

September 16, 1996

Department of Defense

Additional Copies

To obtain additional copies of this audit report, contact the Secondary Reports Distribution Unit, Audit Planning and Technical Support Directorate, at (703) 604-8937 (DSN 664-8937) or FAX (703) 604-8932.

Suggestions for Future Audits

To suggest ideas for or to request future audits, contact the Planning and Coordination Branch of the Analysis, Planning, and Technical Support Directorate at (703) 604-8939 (DSN 664-8939) or FAX (703) 604-8932. Ideas and requests can also be mailed to:

OAIG-AUD (ATTN: APTS Audit Suggestions)
Inspector General, Department of Defense
400 Army Navy Drive (Room 801)
Arlington, Virginia 22202-2884

Defense Hotline

To report fraud, waste, or abuse, contact the Defense Hotline by calling (800) 424-9098; by sending an electronic message to Hotline@DODIG.OSD.MIL; or by writing the Defense Hotline, The Pentagon, Washington, D.C. 20301-1900. The identity of each writer and caller is fully protected.

Acronyms

EMRO	Electromagnetic Radiation Operation
FAR	Federal Acquisition Regulation
FLIR	Forward-Looking Infra-Red
PCO	Procuring Contracting Officer
PQT	Production Qualification Testing
WSMD	Weapon Systems Management Directorate

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

September 16, 1996

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Avenger Forward-Looking Infra-Red System (Report No. 96-221)

We are providing this final audit report for your information and use. This is the first in a series of audit reports resulting from our review of the management of contract waivers and deviations. We considered comments on the draft of this report in preparing this final report.

Comments on the draft of this report conformed to the requirements of DoD Directive 7650.3 and left no unresolved issues. Therefore, no additional response is necessary.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. John E. Meling, Audit Program Director, at (703) 604-9091 (DSN 664-9091) or Mr. Brian M. Flynn, Audit Project Manager, at (703) 604-9076 (DSN 664-9076). See Appendix D for the report distribution. Audit team members are listed inside the back cover.

David Steensma

David K. Steensma
Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 96-221 **September 16, 1996**
(Project No. 6AE-0033)

The Avenger Forward-Looking Infra-Red System

Executive Summary

Introduction. In August 1987, the Avenger Project Office contracted with the Defense Systems Division of Boeing Company to build and deliver the Avenger system. The Avenger system was developed to defend against helicopters and fixed-wing aircraft flying at low altitude, in day or night operations, and in clear or adverse weather conditions. On October 1, 1995, the Avenger Project Office was closed and responsibility for the Avenger Program was transferred to the Weapon System Management Directorate of the U.S. Army Missile Command. We are issuing this audit report because the operational deficiencies of the Avenger's Forward-Looking Infra-Red system impair the Avenger's capability to operate in various weather and battlefield conditions.

Audit Objectives. The primary audit objective was to evaluate the management of contract waivers and deviations for the Avenger system. Specifically, we assessed whether procedures for reviewing, approving, and obtaining equitable consideration for major waivers and deviations were adequately and consistently applied. We also reviewed the implementation of management controls applicable to waivers and deviations. The Avenger system is one program reviewed in our ongoing audit of contract waivers and deviations for Defense systems.

Audit Results. The Avenger Project Office accepted 325 deficient Avenger systems without requiring the prime contractor to subsequently correct critical Forward-Looking Infra-Red system operational performance deficiencies or to provide for an equitable contract cost reduction or other consideration for the Government waiving the Forward-Looking Infra-Red system performance requirement. As a result, the uncorrected Forward-Looking Infra-Red system will operate ineffectively when a radiation source is used nearby. The Forward-Looking Infra-Red system's target acquisition screen will be cluttered with interference. Therefore, the operating crews have difficulty identifying an actual target, making the system less effective.

To correct the problem, the Weapon Systems Management Directorate proposed that it compile a history of electromagnetic interference problems; list and prioritize corrective actions; request consideration from the contractor to implement the appropriate corrective actions; if unable to obtain consideration from the contractor, pursue budgeting and funding for the corrective actions; and resolve existing hardware problems either contractually or by field fixes.

Summary of Recommendations. We recommend that the Commander, U.S. Army Missile Command, develop time-phased milestones to facilitate completion of the plan of action the Weapons Systems Management Directorate proposed to correct the Avenger Forward-Looking Infra-Red system's operational performance anomalies for systems already accepted as well as systems under contract.

Management Comments. The Commander, U.S. Army Missile Command, concurred with the report and established time-phased milestones for the plan of action to correct the Avenger Forward-Looking Infra-Red system's operational performance anomalies for systems already accepted as well as systems under contract. The Assistant Secretary of the Army (Research, Development and Acquisition) concurred with the report and action taken by the U.S. Army Missile Command and advised that the unfunded requirement resulting from the Missile Command's actions would be reviewed and prioritized by Department of the Army Headquarters together with all other unfunded requirements for the FY 1999 mini-Program Objectives Memorandum. See Part I for a summary of management comments and Part III for the complete text.

Audit Response. We consider the management comments to be fully responsive and commend the Assistant Secretary of the Army (Research, Development and Acquisition) and the Commander, U.S. Army Missile Command, for their responsive actions.

Table of Contents

Executive Summary i

Part I - Audit Results

Audit Background 2
Audit Objectives 3
Electromagnetic Interference Affecting Avenger Performance 4

Part II - Additional Information

Appendix A. Scope and Methodology
Scope 10
Methodology 10
Management Control Program 11
Prior Audit Coverage 12
Appendix B. Definitions of Technical Terms 13
Appendix C. Organizations Visited or Contacted 14
Appendix D. Report Distribution 15

Part III - Management Comments

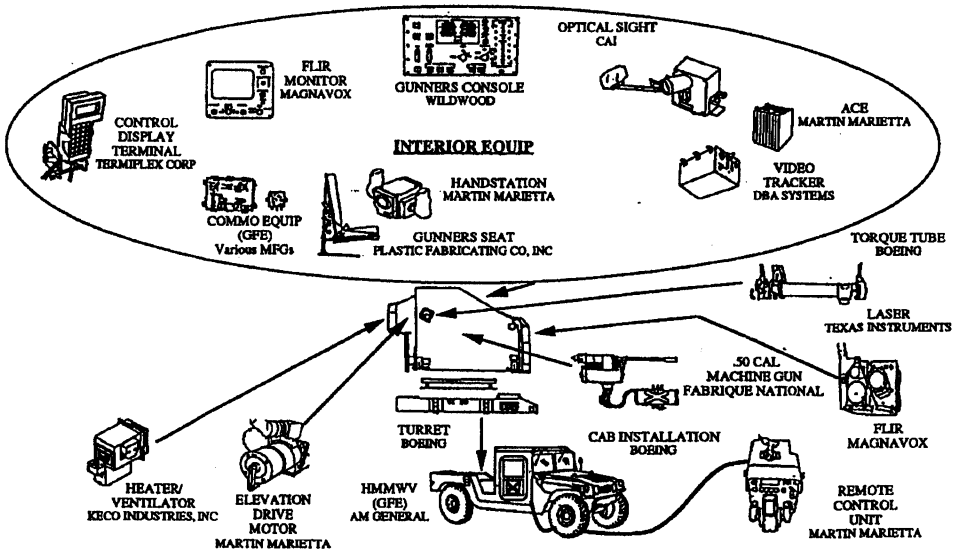
Assistant Secretary of the Army (Research, Development and Acquisition) Comments 18

Part I - Audit Results

Audit Background

The Avenger is a lightweight, highly mobile, transportable surface-to-air missile and 0.50 caliber machine gun system. The system is operated by a two-person crew. The crew defends against helicopters and fixed-wing aircraft flying at low altitude, in day or night operations, and in clear or adverse weather. The Avenger is expected to encounter possible aircraft attack and be subjected to nuclear, biological, and chemical threats. The system is mounted on a High Mobility Multipurpose Wheeled Vehicle and has an operator's position with controls and displays, fire control electronics, and a Standard Vehicle Mounted Launcher to support and launch Stinger missiles. The Avenger system crew acquires the target by direct vision using the optical sight or by using a Forward-Looking Infra-Red (FLIR) system for night and poor weather operation. The FLIR is equipped with an electrically operated optics cover and is mounted on the left launch arm beneath the missile pod. The following figure shows the location of the FLIR on the Avenger system.

Location of the FLIR on the Avenger System



In August 1987, the Avenger Project Office awarded a firm-fixed-price contract to the Defense Systems Division of Boeing Company to build and deliver the Avenger system. The initial contract totaled $16.2 million for the first option buy of 20 systems. The second option covering 39 systems was exercised in 1988, the third option for 70 units was exercised in 1989, the fourth option for 72 units in March 1990, and the fifth option for 72 units May 1991. This contract also included an option that was exercised in 1991 for an additional 52

units. After the exercise of the options, the contract value reached $232 million over the 5 years together with associated logistics support costs. During this contract, the Defense Acquisition Board approved the Avenger system for full-scale production in April 1990. In February 1992, the Avenger Project Office awarded a follow-on $436 million 5-year multiyear contract for 679 units. In total, the Army has contracted for 911 units and has an unfunded contract option for another 93 units. The Army is acquiring 237 of the 1,004 Avenger units for the Marine Corps. So, depending on whether the funding for the last year of the multiyear contract is appropriated, the Army will acquire from 674 to 767 Avenger units for its own use. The total estimated life-cycle cost of the program is about $1 billion in then-year dollars. See Appendix B for definitions of technical terms used in this report.

Audit Objectives

The primary audit objective was to evaluate the management of contract waivers and deviations for the Avenger system. Specifically, we assessed whether procedures for reviewing, approving, and obtaining equitable consideration for major waivers and deviations were adequately and consistently applied. We also reviewed the implementation of management controls applicable to contract waivers and deviations.

The Avenger system is one program reviewed in our ongoing audit of contract waivers and deviations for Defense acquisition systems, Project No. 6AE-0033, "Management of Contract Waivers and Deviations for Defense Systems." In Appendix A, we discuss the scope and methodology used to accomplish the objective as well as management controls and prior audit coverage.

Electromagnetic Interference Affecting Avenger Performance

From November 1, 1988, through May 21, 1992, the Avenger Project Office accepted 325 deficient Avenger systems valued at $232 million without requiring the prime contractor to subsequently correct Electromagnetic Radiation Operation (EMRO) problems causing critical FLIR system operational performance deficiencies or to provide an equitable contract cost reduction or other consideration for the Government waiving the FLIR performance requirement. This condition occurred initially because of the Army's urgency to field the Avenger in support of Operation Desert Storm. Subsequently, the Avenger Project Office delayed implementation of actions to correct EMRO performance deficiencies in the Avenger systems already accepted as it sought to minimize the $14.2 million estimated cost of the corrective actions. As a result, system effectiveness is degraded because of interference from radiation sources.

Waiver and Deviation Policy

Military Standard 973, "Configuration Management," April 17, 1992, requires contractors to initiate requests for waivers and deviations when contract items have not been or will not be built to contract requirements. The request must include any cost or schedule impact to the contract.

Federal Acquisition Regulation (FAR), subpart 46.407, "Nonconforming Supplies or Services," allows the procuring contracting officer (PCO) to accept nonconforming supplies when it is in the Government's best interest. The PCO can accept the nonconforming supplies based upon:

o advice from technical experts that the item is safe to use and will perform its intended purpose;

o information regarding the nature and extent of the nonconformance;

o a request from the contractor for acceptance of the item;

o a recommendation for acceptance or rejection with supporting documentation; and

o contract adjustment considered appropriate, including any adjustments offered by the contractor.

The cognizant contract administration office usually provides this information to the PCO. The FAR subpart also requires the PCO to modify the contract for which nonconforming items are accepted to provide for an equitable price

reduction or other consideration. The FAR does not define "other consideration." For this audit, we define "other consideration" as compensation or services that the contractor gave the Government in exchange for approving the waivers.

Testing of the Avenger FLIR System

On the initial Avenger system contract awarded in 1987, the Avenger Project Office accepted 325 Avenger systems without requiring the prime contractor to subsequently correct a critical FLIR system operational performance deficiency identified during testing.

Because the Avenger system could be exposed on the battlefield to electromagnetic interference from various sources of electrical signals, the Avenger contract specified that Avenger testing include the effects of such radiation on system performance. The Avenger contract segregated the sources of electromagnetic interference into five distinct frequency bands and specified that the effects of the electromagnetic interference on Avenger performance be tested. The contract further required that, depending on the frequency bands, the FLIR should be exposed to the electromagnetic interference resulting from radiation at 25 to 50 volts per meter.

Initial Testing in 1989. The White Sands Missile Range conducted the Electromagnetic Radiation Operation (EMRO) production qualification test (PQT) from October through December 1989. Among other things, these tests were conducted to determine whether the FLIR system could operate in an environment of electromagnetic interference as specified in the Avenger contract. During the PQT, however, the Avenger FLIR system was tested at 50 to 100 volts per meter for the specified frequency bands, twice the level required in the contract performance specifications.

The White Sands Missile Range tested at twice the field strengths specified in the Avenger contract because Military Standard 6051, "Electromagnetic Compatibility Requirements, System," July 5, 1968, recommended testing at least at such levels to establish a safety margin for equipment for which electromagnetic interference could have catastrophic results. Therefore, the White Sands Missile Range testers used the higher levels recommended in Military Standard 6051. Avenger crews operate in battlefield conditions that warrant use of the FLIR, such as at night or where dust, wind, rain, smoke, or mist are present. The test range results indicated that when a radiation source, such as high power electrical lines or other electrical equipment, was in use nearby, a FLIR target acquisition screen could be cluttered with interference. The amount of interference would depend on the frequency and power of the radiation source causing the electromagnetic interference. This interference would impede the Avenger crews' ability to operate at peak proficiency in such battlefield conditions.

At the time of the test, the Avenger Project Office speculated that most electromagnetic interference anomalies identified by the White Sands Missile Range testers would not have occurred had the FLIR system been tested at the performance levels specified in the contract. Accordingly, the Avenger Project Office and the contractor jointly decided that further EMRO testing of the FLIR system at the performance levels specified in the contract was needed before the Avenger Project Office would commit to extensive corrective actions.

Testing in 1990. In July 1990, the Redstone Technical Test Center at Redstone Arsenal conducted a limited electromagnetic frequency test of the FLIR system at performance levels specified in the Avenger contract. Those limited test results also showed FLIR system performance anomalies that would impede Avenger crews from accomplishing their mission when operating the FLIR when a radiation source was in use nearby. However, since the limited test did not address all electromagnetic frequencies that the Avenger would be exposed to, the testers were unable to quantify the extent of the FLIR system performance deficiency on Avenger operational performance.

Fielding System. Based on the Army's urgency to field the Avenger in support of Operation Desert Storm, the Avenger Project Office continued to accept Avenger systems with FLIR system operational problems pending more complete electromagnetic frequency tests.

Testing in Early 1992. From December 1991 through February 1992, the Redstone Technical Test Center at Redstone Arsenal performed a complete and conclusive EMRO test of the FLIR system at all performance levels specified in the contract. The test results showed that most FLIR system performance anomalies identified earlier still remained.

Correcting Performance Anomalies. The prime contractor estimated that modifying the 1,004 Avenger systems the Government had accepted or had under contract would cost $14.2 million to correct the five most significant FLIR system performance anomalies identified during the EMRO test. The Avenger Project Office neither required the contractor to provide for an equitable contract cost reduction or other consideration for the Government's waiving the FLIR performance requirement while continuing to accept Avenger systems nor did the Project Office conditionally accept the systems with an explicit agreement with the contractor that they would be corrected later. Also, the Avenger Project Office did not fund the $14 million estimated cost of correcting FLIR system performance anomalies.

Avenger Contract Award in 1992

On February 20, 1992, the Avenger Project Office awarded a 5-year multiyear contract to Defense Systems Division of the Boeing Company totaling $436 million for 679 additional Avenger systems. While this multiyear contract was being negotiated, complete and conclusive EMRO testing of the FLIR had not yet been completed and the significance of the test results were unknown.

However, during negotiations, the contractor sought a significant unit cost increase if the new contract were to retain the FLIR performance standards as in the original production contract. Thus, in awarding the contract, the Avenger Project Office sought to avoid an increase in unit costs by not requiring that the FLIR system be subjected to electromagnetic interference testing as a condition for accepting the additional Avenger systems. Consequently, for all Avenger systems acquired and accepted through May 1996, Avenger crews using the FLIR near a radiation source have a FLIR target acquisition screen that is cluttered with interference.

Dissolution of Avenger Project Office

On October 1, 1995, the Avenger Project Office was dissolved and management of the Avenger Program transitioned to the Weapon System Management Directorate (WSMD) of the U.S. Army Missile Command. At that time, the Avenger Project Office had exercised four of the five possible awards under the 1992 multiyear contract. In making the transition, the Program Executive Officer did not provide WSMD any funds for correcting the EMRO anomalies estimated to cost $14.2 million for 674 Army Avenger systems. No estimate has been made for the cost of correcting the 237 Marine Corps units. On September 25, 1995, 6 days before the dissolution of the Avenger Project Office, $7.2 million in Avenger funds were transferred to the Stinger Program to provide testing and Government matrix support to adapt the Stinger for use on the Bradley Fighting Vehicle.

The Assistant Secretary of the Army (Research, Development and Acquisition) noted in response to the draft of this report that the Army has a number of unfunded requirements in its short range air defense systems program. The $7.2 million taken from EMRO for Bradley Stinger Fighting Vehicle - Enhanced, a high priority requirement, was used to provide a forward area armored air defense platform, with the capability to fire Stinger missiles from inside the turret, for Task Force XXI.

Management Actions

WSMD management acknowledged the existence of the FLIR system operational problems and agreed to take immediate action on all known or suspected system deficiencies. In this regard, WSMD personnel prepared a plan of action to solve the FLIR system EMRO problems. The WSMD proposed that it:

o compile a mini-history of electromagnetic interference and EMRO problems on the Avenger,

o compose a closure letter for the history summary and request consideration from the contractor to bring the electromagnetic interference and EMRO issue to closure,

o list and prioritize the particular details of fixes to EMRO problems,

o pursue budgeting and funding for the above fixes, and

o initiate appropriate corrective action to resolve existing hardware problems either contractually or by field fixes.

This plan satisfies the problems identified. However, time-phased milestones for its implementation were not developed.

Recommendation, Management Comments, and Audit Response

We recommended that the Commander, U.S. Army Missile Command, develop time-phased milestones to facilitate completion of the plan of action the Weapon System Management Directorate proposed to correct the Avenger Forward-Looking Infra-Red system operational performance anomalies for systems already accepted as well as systems under contract.

Management Comments. The Commander, U.S. Army Missile Command, concurred with the report and established time-phased milestones for the plan of action to correct the Avenger Forward-Looking Infra-Red system's operational performance anomalies for systems already accepted as well as systems under contract. The Assistant Secretary of the Army (Research, Development and Acquisition) concurred with the report and action taken by the U.S. Army Missile Command and advised that the unfunded requirement resulting from the Missile Command's actions would be reviewed and prioritized by Department of the Army Headquarters together with all other unfunded requirements for the FY 1999 mini-Program Objectives Memorandum.

Audit Response. We consider the management comments to be fully responsive and commend the Assistant Secretary of the Army (Research, Development and Acquisition) and Commander, U.S. Army Missile Command, for their responsive actions.

Part II - Additional Information

Appendix A. Scope and Methodology

This appendix discusses the scope and methodology used to accomplish the audit objective as well as management controls and prior audit coverage.

Scope

We conducted this audit from March 25 through May 3, 1996, and reviewed data dated from December 1987 through April 1996. To accomplish the objective, we:

o examined Avenger production contracts DAAHO1-86-C-AO77, valued at $232 million, and DAAHO1-92-C-0023, valued at $436 million, with the Defense Systems Division of Boeing Company, including statements of work, contract data requirements lists, contract line items, and related correspondence;

o reviewed configuration management documentation, engineering change proposals, requests for waivers and deviations, contract modifications, technical data packages, deficiency notices, system specifications, program test results, electromagnetic interference data, and Army configuration regulations; and

o discussed issues relating to the management of contract waivers and deviations for the Avenger system with program, technical, and contracting personnel from the U.S. Army Missile Command and Boeing Aircraft Systems, Huntsville, Alabama. See Appendix C for a list of the organizations we visited or contacted.

Methodology

We conducted this program audit 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 management controls as we deemed necessary. We did not use computer-processed data or statistical sampling procedures for this audit.

Management Control Program

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

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

Consequently, our review of management controls was limited to those related to contract waivers and deviations for the Avenger Program. Our review of management controls for the Avenger Program was also limited by the dissolution of the Avenger Project Office and transfer of the management of the Avenger Program to WSMD during the first quarter of FY 1996. The dissolution of the Avenger Project Office necessitated that our review of management controls for contract waivers and deviations be further limited to the management controls of the WSMD.

Adequacy of Management Controls. At WSMD, we did not identify any material management control weakness applicable to our primary audit objective.

Prior Audit Coverage

During the past 5 years, the General Accounting Office; the Inspector General, DoD; and the Army Audit Agency have not issued reports on the Avenger system addressing waiver and deviation issues.

Appendix B. Definitions of Technical Terms

Configuration Management. Technical and administrative direction and surveillance actions taken to identify and document functional and physical characteristics of an item, to control changes to an item and its characteristics, and to record and report change processing and implementation status.

Deviation. A written authorization, granted before the manufacture of an item, to depart from a particular performance or design requirement of a specification, drawing, or other document for a specific number of units or specified period.

Electromagnetic Interference. An engineering term used to designate interference in a piece of electronic equipment caused by another piece of electronic or other equipment. The term sometimes refers to interference caused by nuclear explosion.

Engineering Change Proposal. A proposal to the responsible authority recommending that a change to an original item of equipment be considered and the design or engineering change be incorporated into the article to modify, add to, delete, or supersede original parts.

Technical Data Package. A technical description of an item adequate for supporting an acquisition strategy, production, engineering, and logistics support. The description defines the required design configuration and procedures to ensure adequacy of item performance. It consists of all applicable technical data such as drawings, associated lists, specifications, standards, performance requirements, quality assurance provisions, and packaging details.

Waiver. A written authorization to accept a configuration item that departs from specified requirements. The item may be considered suitable "as is" or after rework by an approved method.

Appendix C. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology, Washington, DC

Department of the Army

U.S. Army Missile Command, Redstone Arsenal, AL
  Weapon Systems Management Directorate, Redstone Arsenal, AL

Other Defense Organizations

Defense Logistics Agency, Fort Belvoir, VA
  Defense Contract Management Command, Fort Belvoir, VA

Contractor

Boeing Aircraft Systems, Huntsville, AL

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Director, Defense Logistics Studies Information Exchange
  Director, Defense Procurement
  Director, Strategic and Tactical Systems
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program and Budget)
Assistant to the Secretary of Defense (Public Affairs)

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Assistant Secretary of the Army (Research, Development and Acquisition)
  Program Executive Officer, Tactical Missiles
Commander, U.S. Army Missile Command
  Weapon Systems Management Directorate
Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

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

Non-Defense Federal Organizations and Individuals

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

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 National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Assistant Secretary of the Army (Research, Development and Acquisition) Comments

Final Report Reference

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
RESEARCH DEVELOPMENT AND ACQUISITION
103 ARMY PENTAGON
WASHINGTON DC 20310-0103

REPLY TO ATTENTION OF

SARD-SM

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

SUBJECT: Audit Report on the Avenger Forward-Looking Infra-Red (FLIR) System (Project No. 6AE-0033) (AMC No. D9615)

The Assistant Secretary of the Army (Research, Development and Acquisition) response to the subject DODIG report is contained at Encl 1. The Army Materiel Command/Weapon systems Management Directorate (AMC/WSMD) response to the subject report is at Encl 2.

It should be noted that the Army has a number of unfunded requirements in its short range air defense systems (SHORADS) program. The $7.2M taken from EMRO for Bradley Stinger Fighting Vehicle - Enhanced (BSFV-E), a high priority requirement, was used to provide a forward area armored air defense platform, with the capability to fire Stinger missiles from inside the turret, for Task Force XXI. 7

Point of Contact for Avenger programmatics at Headquarters, Department of the Army, is Joe Potts, (703) 697-8646.

Richard D. Morris
Lieutenant Colonel (P), GS
Director, Missile Systems

Encls

ASA(RDA) Command Response to DODIG Audit

DODIG Recommendation for Corrective Action: "We recommend that the Commander, U.S. Army Missile Command, develop time-phased milestones to facilitate completion of the plan of action the Weapon Systems Management Directorate proposed to correct the Avenger Forward-Looking Infra-Red system operational performance anomalies for systems already accepted as well as systems under contract."

Action Taken: Concur. U.S. Army Missile Command (MICOM) has submitted a plan of action (Encl 2). Upon completion of MICOM's review, the resultant unfunded requirement will be forwarded to this Headquarters. HQDA will review all of the Army's unfunded requirements in 2QFY97. This effort will be prioritized, together with other unfunded requirements, during the FY99 mini-Program Objectives Memorandum (POM) build starting in 2QFY97.

Enclosure 1

Assistant Secretary of the Army (Research, Development and Acquisition) Comments

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333 - 0001

REPLY TO ATTENTION OF

AMCIR-A (36-2b) 02 August 1996

MEMORANDUM FOR MR. JOHN BOURGAULT, PROGRAM DIRECTOR, POLICY, FOLLOWUP AND TRAINING, U.S. ARMY AUDIT AGENCY, 3101 PARK CENTER DRIVE, 13TH FLOOR, ALEXANDRIA, VA 22302-1596

SUBJECT: DODIG Draft Report, The Avenger Forward-Looking Infra-Red System, Project 6AE-0033.00 (AMC No. D9615)

1. We are enclosing our position on subject report IAW AR 36-2. We concur with the actions being taken by the U.S. Army Missile Command.

2. Point of contact for this action is Mr. Robert Kurzer, (703) 617-9025.

3. AMC -- America's Arsenal for the Brave.

FOR THE COMMANDER:

Encl
as

BILLY K. SOLOMON
Major General, USA
Chief of Staff

Enclosure 2

DEPARTMENT OF THE ARMY
UNITED STATES ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA 35898-5740

AMSMI-IR (36-2b) 23 Jul 96

MEMORANDUM FOR Commander, U.S. Army Materiel Command,
ATTN: AMCIR-A, 5001 Eisenhower Avenue,
Alexandria, VA 22333-0001

SUBJECT: DODIG Draft Report, The AVENGER Forward-Looking Infra-Red System, Project 6AE-0033 (AMC No. D9615)

1. Reference memorandum, AMCIR-A, 20 Jun 96, subject as above.

2. Our comments to the subject report are enclosed.

3. The POC for this action is Mr. David Prince at DSN 788-6945.

Encl

JAMES M. LINK
Major General, USA
Commanding

AN EQUAL OPPORTUNITY EMPLOYER

Enclosure 2

Final Report
Reference

MICOM COMMENTS

DODIG Audit of the AVENGER Forward-Looking
Infra-Red System

MICOM submits the following comments to the subject draft report:

1. Reference: Page 3. First paragraph. "In total, the Army plans to acquire 1,004 units ...."

3 Response: The current plan is to acquire 674 to 767 units.

2. Reference: Page 4. First paragraph. "...$14.2 million estimated cost of the corrective actions."

4 Response: The Boeing estimated cost to fix the Electramagnetic Radiation Operation (EMRO) considered five areas and a contingency cost for unknown areas which amounted to over $32 million for 1,004 systems. The government cost for EMRO reduced the area of concern to three of the five areas, adjusted the system to 674 and eliminated the contingency cost factor for a total of ~~$14~~ $14.2 million for all EMRO areas. The fix for Flir EMRO portion was $1 million of the total EMRO costing factor.

3. Reference: Page 7, paragraph 2. "...funds for correcting the Flir anomalies ...."

7 Response: Change Flir to EMRO.

4. Reference: Page 7, paragraph 2. "...$14.2 million for the 1,004 AVENGER systems...."

Response: Change 1,004 to 674 AVENGER systems.

5. Reference: Management actions.

8 Response: Management actions as recorded on page 8 of subject report have been included in MICOM's plans, with the exception of Item 5. Once efforts have reached this point, the corrections become part of MICOM's normal mission of system evolution. Item numbers of the management actions will determine the funding required and consideration received. Subsequently, MICOM will determine the most effective engineering implementation of EMRO fixes.

Enclosure 2

6. Recommendation: "That the Commander, U.S. Army Missile Command, develop time-phased milestones to facilitate completion of the plan of action the Weapon System Management Directorate proposed to correct the AVENGER Forward-Looking Infra-Red system operational performance anomalies for systems already accepted as well as systems under contract."

Action Taken: Concur. Milestones have been established for the Plan of Action as follows:

PLAN OF ACTION	TARGET COMPLETION DATE
1. Compile Mini-History EMRO problems (Resp. Engineering)	July 1996
2. Develop letter to Contractor (Resp. PMO)	July 1996
3. Contractor's response and discussion (Resp. PMO/Contracts	September 1996
4. Prioritize EMRO fixes (Resp. PMO)	September 1996
5. Obtain funding/ consideration (Resp. PMO/Contract.	February 1997

Enclosure 2

Audit Team Members

This report was prepared by the Systems Acquisition Division Directorate, Office of the Assistant Inspector General for Auditing, DoD.

Patricia A. Brannin
John E. Meling
Brian M. Flynn
Verne F. Petz
Keith A. Sullenberger
Mary Ann Hourclé
Teresa D. Bone