Audit Report

PREPARATION OF THE SENSE AND DESTROY ARMOR MUNITION FOR THE YEAR 2000

Report No. 99-130 April 12, 1999

Office of the Inspector General
Department of Defense

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Acronyms

FAR	Federal Acquisition Regulation
SADARM	Sense and Destroy Armor
Y2K	Year 2000

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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ARLINGTON, VIRGINIA 22202

April 12, 1999

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Preparation of the Sense and Destroy Armor Munition for the Year 2000 (Report No. 99-130

We are providing this report for information and use. This report is one of a series being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the year 2000 computing challenge. Because this report contains no findings or recommendations, no written comments were required, and none were received. Therefore, we are publishing this report in final form.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Charles M. Santoni at (703) 604-9051 (DSN 664-9051) <CSantoni@dodig.osd.mil> or Mr. Sean Mitchell at (703) 604-9034 (DSN 664-9034) <SMitchell@dodig.osd.mil>. See Appendix B for the report distribution. The audit team members are listed inside the back cover.

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Office of the Inspector General, DoD

Report No. 99-130 **April 12, 1999**
Project No. 8AL-0041.01

Preparation of the Sense and Destroy Armor Munition for the Year 2000

Executive Summary

Introduction. This report is one of a series being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the year 2000 computing challenge. This report addresses year 2000 issues that pertain to the Sense and Destroy Armor munition.

Objectives. The overall audit objective was to determine whether planning and management are adequate to ensure that the Sense and Destroy Armor munition will operate effectively on January 1, 2000.

Results. The program office was actively planning and managing year 2000 issues. The program office initiated action to ensure that contracts and solicitations for the Sense and Destroy Armor munition include year 2000 compliance language. The algorithms in the Sense and Destroy Armor munition contain no date references, and the contractor warranted that each hardware, software, and firmware product delivered under the contract would be able to accurately process date and time data from, into, and between the 20th and 21st centuries. No interface agreements were applicable. We are making no recommendations in this report.

Management Comments. We provided a draft of this report on March 17, 1999. Because this report contains no adverse findings or recommendations; written comments are not required, and none were received.

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Background

The Year 2000. Because there is a potential for computers to fail to run or function throughout the Government commencing January 1, 2000, the President issued an Executive Order, "Year 2000 Conversion," February 4, 1998. The Executive Order makes it policy that Federal agencies ensure that no critical Federal program experiences disruption because of the year 2000 (Y2K) problem and that the head of each agency ensures that efforts to address the Y2K problem receive the highest priority attention in the agency.

DoD Y2K Management Plan. The Assistant Secretary of Defense (Command, Control, Communications and Intelligence), in his role as the DoD Chief Information Officer, initially issued the "DoD Year 2000 Management Plan" (DoD Management Plan) in April 1997. The latest version was released in December 1998. The DoD Management Plan provides the overall DoD strategy and guidance for inventorying, prioritizing, repairing or retiring systems and monitoring progress. The DoD Management Plan states that the DoD Chief Information Officer has overall responsibility for overseeing the DoD solution to the Y2K problem.

Also, the DoD Management Plan makes the DoD Components responsible for implementing the five-phase Y2K management process. The DoD Management Plan includes a description of the five-phase Y2K management process. The target completion date for implementation of mission-critical systems was December 31, 1998, and for nonmission-critical systems was March 31, 1999.

Y2K Implications for DoD Weapon Systems. DoD weapon systems are becoming increasingly advanced through the extensive use of computers and software. The development and acquisition of software, information technology systems, and software embedded in weapon systems that accommodate the century change are essential to future mission effectiveness. The weapon systems include smart munitions, missiles, armored vehicles, ships, aircraft, communication, and navigation systems. Critical DoD missions could be affected if their computers and software are unable to accurately process date and time data after December 31, 1999.

Army Y2K Compliance Checklist. The Army developed its Y2K Compliance Checklist to aid system and device program, product and project managers in ensuring that their systems or devices are tested and documented to be Y2K compliant.

Objective

The overall audit objective was to determine whether planning and management are adequate to ensure that the Sense and Destroy Armor munition will operate effectively in the year 2000. See Appendix A for a discussion of the audit scope and methodology and prior audit coverage.

Status of the Sense and Destroy Armor Munition Year 2000 Compliance

The Sense and Destroy Armor munition Program Office was actively planning and managing Y2K issues. All documentation was being prepared as required by the DoD Management Plan and the Army Y2K Compliance Checklist. The Sense and Destroy Armor munition contract had language from Federal Acquisition Regulation (FAR) 39.106, "Year 2000 Compliance," and contained Y2K warranties of commercial and non-commercial supply items at no additional cost to the Government.

System Description

The Sense and Destroy Armor munition (SADARM) was designed for use against self-propelled howitzers, armored personnel carriers and other stationary armored threat vehicles encountered in counterfire, close support, suppression of enemy air defense, and interdiction. The system is comprised of the following major components: dual-mode millimeter wave and infrared sensor, with an explosively formed penetrator; parachutes that control deceleration, spin, and descent velocity; fusing, safe, and arm devices; and appropriate carrier hardware. The 155-millimeter SADARM projectile carries two 5.8-inch SADARM submunitions. Aerojet is the main contractor for the system.

Year 2000 Program Guidance

FAR Requirement for Y2K Compliance. The FAR addresses Y2K compliance issues in Part 39, "Acquisition of Information Technology." FAR 39.002 states that information technology is Y2K compliant when it is capable of accurately processing date and time data in the 20th and 21st centuries, as well as in leap years. FAR 39.106, "Year 2000 Compliance," states that agencies acquiring information technology that require date and time processing language must ensure that contracts and solicitations contain Y2K compliance language.

DoD Guidance. The DoD Management Plan requires DoD to use Y2K compliance language, as proscribed in the FAR, in all new contracts and in modifications to existing contracts, as appropriate.

Y2K Program Management

The SADARM program office was actively planning and managing Y2K issues to ensure that the SADARM would operate effectively in the year 2000. The program office has complied with the requirements of the DoD Management Plan. The Program Executive Officer certified the program as Y2K compliant

on May 28, 1998. No testing was conducted because the SADARM contains no date references; however, contract warranty provisions protecting the Government's interest are in place.

Army Y2K Compliance Checklist. The SADARM program office used the Army's Y2K Compliance Checklist to ensure that the munition was properly documented and determined to be Y2K compliant. The program office's analysis showed that the algorithms in the SADARM contain no date references.

Contract Language. Although the munition is not date sensitive, representatives of the SADARM program office modified the production contract to ensure contractor liability in the event that the SADARM is not Y2K compliant. In sections H.14 and H.15 of the contract, the contractor warranted that each hardware, software, and firmware product delivered under the contract would be able to accurately process date and time data for commercial and noncommercial supply items. The munition would process date and time data from, into, and between the 20th and 21st centuries to the extent that other information technology used in combination with the information technology being acquired can properly exchange date and time data with it.

Appendix A. Audit Process

This report is one in a series being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the Y2K computing challenge. For a list of audit projects addressing this issue, see the Y2K webpage on IGnet at <http://www.ignet.gov>.

Scope

We determined whether the SADARM munition contract contained a requirement for Y2K compliance. In evaluating the SADARM, we interviewed officials from the Office of the Project Manager, Artillery Munitions Systems. We reviewed documents including the contract and the Army's Y2K compliance checklist. We determined whether planning and management of the SADARM munition program was adequate to ensure that the munition would operate effectively after December 31, 1999.

DoD-Wide Corporate Level Government Performance and Results Act Goals. In response to the Government Performance and Results Act, the Department of Defense has established 6 DoD-wide corporate level performance objectives and 14 goals for meeting these objectives. This report pertains to achievement of the following objective and goal:

- **Objective:** Prepare now for an uncertain future.
- **Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. **(DoD-3)**

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement of the following functional area objectives and goals:

Acquisition Functional Area.

- **Objective:** Internal reinvention.
- **Goal:** Minimize cost growth in major defense acquisition programs to no greater than 1 percent annually. **(ACQ-3.4)**

Information Technology Management Functional Area.

- **Objective:** Become a mission partner. **Goal:** Serve mission information users as customers. **(ITM-1.2)**
- **Objective:** Provide services that satisfy customer information needs. **Goal:** Modernize and integrate Defense information infrastructure. **(ITM-2.2)**

- **Objective:** Provide services that satisfy customer information needs. **Goal:** Upgrade technology base. **(ITM-2.3)**

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the Defense Weapons Systems Acquisition high-risk area.

Methodology

We interviewed officials from the Office of the Project Manager, Artillery Munitions Systems. We obtained and reviewed the SADARM prime contract, the Army Y2K Compliance Checklist, the SADARM Y2K certification, and other supporting documentation to determine whether the SADARM Program Office was actively planning and managing Y2K issues to ensure that the munition would operate effectively in the year 2000.

Use of Computer-Processed Data. We did not use computer-processed data to perform this audit.

Audit Type, Dates, and Standards. We performed this economy and efficiency audit from August 1998 through January 1999, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

Contacts During the Audit. We visited or contacted individuals and organizations within the Department of the Army. Further details are available upon request.

Management Control Program Review

The audit scope was limited in that we did not review the management control program because DoD recognized the Y2K computing problem as a material management control weakness in the FY 1997 and FY 1998 Annual Statements of Assurance.

Summary of Prior Coverage

The General Accounting Office and the Inspector General, DoD, have conducted multiple reviews related to Y2K issues. No reports specifically concerning the SADARM have been issued. General Accounting Office reports can be accessed over the Internet at http://www.gao.gov. Inspector General, DoD, reports can be accessed over the Internet at http://www.dodig.osd.mil.

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House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform

Audit Team Members

The Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, produced this report.

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