Audit Report

YEAR 2000 CONTRACT LANGUAGE FOR WEAPON SYSTEMS

Report No. 98-207 September 22, 1998

Office of the Inspector General
Department of Defense

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Acronyms

FAR	Federal Acquisition Regulation
Y2K	Year 2000

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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September 22, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY

SUBJECT: Audit Report on Year 2000 Contract Language for Weapon Systems (Report No. 98-207)

We are providing this report for information and use. This report is one of a series of reports 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.

We provided you with a draft of this report on August 14, 1998. Because the report contains no recommendations, written comments were not required, and none were received.

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) or Mr. Michael T. Hill at (703) 604-9019 (DSN 664-9019). See Appendix C for the report distribution. The audit team members are listed inside the back cover.

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Report No. 98-207 **September 22, 1998**
Project No. 8AS-0032.09

Year 2000 Contract Language for Weapon Systems

Executive Summary

Introduction. This report is one of a series of reports 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 summarizes the efforts of DoD Program Management Offices to incorporate year 2000 compliance language into contracts and solicitations for their weapon systems.

The year 2000 problem is the term most often used to describe the potential failure of information technology systems to process or perform date-related functions before, on, or after the turn of the next century.

Audit Objectives. Our overall audit objective was to determine whether planning and management within selected components of DoD are adequate to ensure that continuity of operations are not unduly disrupted by year-2000-related issues. Specifically, we evaluated the actions of the DoD Program Management Offices to include year 2000 contract language in weapon systems contracts.

Audit Results. We reviewed 16 weapon systems that had contracts or solicitations for contracts that required year 2000 contract language. We alerted DoD management that of the 16 weapon systems, 9 weapon systems had contracts or solicitations for contracts that did not contain the year 2000 compliance language. The Program Management Offices immediately initiated action to ensure that the contracts and solicitations for the nine weapon systems will include year 2000 compliance language. In addition, on August 7, 1998, the Secretary of Defense directed the Services and Defense Agencies to report on each major acquisition system under their purview. Each report should address areas of year 2000 compliance or noncompliance for each system, to include all related logistics and support systems. The Secretary of Defense also directed that funds not be obligated for any contract that was for information technology or national security systems that process date-related information and that does not contain Y2K requirements specified in Section 39.106 of the Federal Acquisition Regulation. Because the actions taken by the Secretary of Defense should correct the problems identified by the audit, we are making no recommendations in this report.

Management Comments. We provided a draft of this report on August 14, 1998. Because this report contains no recommendations, written comments were not required, and none were received. Therefore, we are publishing this report in final form.

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Part I - Audit Results

Audit Background

Year 2000. The year 2000 (Y2K) problem occurs because of the way dates are recorded and computed in information technology systems. For the past several decades, computer systems have typically used two digits to represent the year to conserve on electronic data storage and reduce operating costs. For example, the year 1998 is represented as "98" in a computer system. With the two-digit format, however, the year 2000 is indistinguishable from the year 1900.

DoD Guidance. In April 1997, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued the DoD Y2K Management Plan. The DoD Y2K Management Plan requires DoD to use Y2K compliance language in all new contracts and modifications as appropriate. Additionally, the DoD Y2K Management Plan contains guidance for software, to include commercial-off-the-shelf products, and appropriate checklists to use for determining Y2K compliance. On December 18, 1997, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued a memorandum that stated that all information technology acquired for national security systems must be Y2K compliant. The Federal Acquisition Regulation (FAR) 39.002, "Definitions," states that a national security system is any telecommunications or information system operated by the Government that, among others, involves command and control of military forces, equipment that is an integral part of a weapon or weapons system, or equipment that is critical to the direct fulfillment of military or intelligence missions.

Y2K Implications for DoD Weapon Systems. The 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 is essential to future mission effectiveness. The weapons include missile systems, armored vehicles, ships, aircraft, and communication and navigation systems. Critical DoD missions could be impacted if the computers and software that the DoD weapon systems use are unable to accurately process the date and time after the year 2000. In the context of this report, we use information technology to include the computer resources that are critical to the functioning and performance of Defense weapon systems.

Audit Objectives

The overall audit objective was to determine whether planning and management within selected components of DoD are adequate to ensure that continuity of operations are not unduly disrupted by Y2K-related issues. The specific objective was to consolidate the information on DoD Program Management Office use of Y2K contract language from ongoing or recently completed audits. See Appendix A for a discussion of the scope and methodology and prior audit coverage.

Weapon Systems Year 2000 Contract Language

Of the 16 weapon systems reviewed, 9 weapon systems had contracts or solicitations for contracts that did not contain the language from FAR 39.106, "Year 2000 Compliance." After we alerted management, the Program Management Offices initiated action to ensure that the contracts and solicitations for the nine weapon systems will include Y2K compliance language. At the time of the audit, the Under Secretary of Defense for Acquisition and Technology had not issued Y2K guidance for weapon systems. In addition, the DoD Program Management Offices did not follow the Y2K guidance from the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) on information technology for national security systems by incorporating compliance language into the contract clauses. On August 7, 1998, the Secretary of Defense directed the Services and Defense Agencies to report on each major acquisition system under their purview. Each report should address areas of Y2K compliance or noncompliance for each system. The Secretary of Defense also directed that funds not be obligated for any contract for information technology or national security systems that process date-related information and that does not contain Y2K requirements specified in Section 39.106 of the Federal Acquisition Regulation. The actions directed by the Secretary of Defense should correct the problems we identified.

FAR Requirement for Y2K Compliance

FAR 39.002 states that information technology is Y2K compliant when it is capable of accurately processing date and time data (such as calculation, comparing, and sequencing) in both the twentieth and twenty-first centuries as well as in leap years. FAR 39.106, "Year 2000 Compliance," states that agencies acquiring information technology that requires date and time processing after December 31, 1999, must ensure that contracts and solicitations require Y2K compliance. FAR 39.106 also states that agencies must ensure that noncompliant information technology is upgraded to be Y2K compliant.

Weapon Systems Use of Y2K Contract Language

We reviewed 16 weapon systems to determine whether the contracts issued for those weapon systems contained a requirement for Y2K compliance. Of the 16 weapon systems, 9 had contracts that did not have language requiring the contractor to comply with Y2K requirements. Appendix B provides a list of the

weapon systems included in this review and a detailed summary of the audit results on each. The National Missile Defense Program and the Advanced Amphibious Assault Vehicle are two examples of weapon systems that had contracts without a requirement for Y2K compliance.

National Missile Defense Program. The Inspector General, DoD, Report No. 98-180, "Ballistic Missile Defense Organization Year 2000 Initiatives," July 16, 1998, states that Y2K compliance language was not in the existing contracts for all four elements of the National Missile Defense Program as of March 1998. The mission of the National Missile Defense Program is to protect the 50 States from a ballistic missile attack. The National Missile Defense Program is composed of the Ground-Based Radar; the Battle Management Command, Control, and Communications; the Ground-Based Interceptor; and the Upgrade Early Warning Radar. The report also states that after being informed of the deficiencies, officials from the Ballistic Missile Defense Organization initiated actions to include a Y2K compliance clause in the integration and development contract.

Advanced Amphibious Assault Vehicle. The Y2K compliance language also was not in the demonstration and validation contract for the Advanced Amphibious Assault Vehicle. Under the contract, the contractor is required to deliver the first prototypes of the Advanced Amphibious Assault Vehicle, which will be tested in the 1999 and 2000 timeframe. The function of the Advanced Amphibious Assault Vehicle is to provide the Marine Corps with its principal means of water and land mobility; direct fire support during combat operations; and protect marines in a nuclear, chemical, and biological environment. Before the audit, officials from the Program Management Office for the Advanced Amphibious Assault Vehicle conducted discussions with the contractor concerning the Y2K implications for the program. After our inquiries on Y2K, the Program Management Office for the Advanced Amphibious Assault Vehicle initiated action to incorporate a provision in the system specification that addresses the requirement for Y2K compliance.

Corrective Action Taken by Program Management Offices. The Program Management Offices for the nine weapon systems without Y2K contract language initiated action during our audits to comply with Y2K contract requirements. We commend the Program Management Offices for taking prompt action to ensure that the contracts for the weapon systems contain Y2K compliant language. That action should help DoD in its efforts to ensure that no system is adversely affected by Y2K problems.

Y2K Guidance for Weapon Systems

At the time of our audit, officials from the Office of the Under Secretary of Defense for Acquisition and Technology stated that they had not issued any guidance addressing Y2K compliance for weapon systems. One official explained that the Program Management Offices should be following the guidance from the Assistant Secretary of Defense (Command, Control,

Communications, and Intelligence). However, the guidance from the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) focuses on information technology for national security systems, not weapon systems. Based on our review of the 16 weapon systems, that guidance is not providing any assurance that Program Management Offices are taking action to make the weapon systems Y2K compliant.

Effects of Noncompliance

The development and acquisition of software, information technology systems, and software embedded in weapons system that accommodate the century change is essential to future mission effectiveness. Without the required Y2K contract language, DoD has no assurance that the weapon systems it is buying are Y2K compliant. The purchase of noncompliant weapon systems may seriously hamper the ability of DoD to perform its warfighting mission. Further, the failure of the Program Management Offices to address the Y2K requirements in the contracts for weapon systems could result in greater costs to correct the problem in the future.

Corrective Action Taken By Management

Following our audit, the Secretary of Defense, in an August 7, 1998, memorandum, directed the Services and Defense Agencies to report on each major acquisition system under their purview. Each report will address areas of Y2K compliance or noncompliance for each system, to include all related logistics and support systems. The Secretary of Defense also directed that funds not be obligated for any contract that was for information technology or national security systems that process date-related information and that does not contain Y2K requirements specified in Section 39.106 of the Federal Acquisition Regulation. Because the new guidance from the Secretary of Defense should correct the problems identified during the audit, we are making no recommendations in this report.

Part II - Additional Information

Appendix A. Audit Process

This report is one in a series of reports 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 listing of audit projects addressing this issue, see the Y2K webpage on IGnet at <http://www.ignet.gov>.

Scope

As part of ongoing and completed audits, we evaluated 16 weapon systems to determine whether the contracts issued for those weapon systems contained a requirement for Y2K compliance. This audit consolidated the results from those ongoing and completed audits that reviewed the 16 weapon systems. In evaluating the 16 weapon systems, we interviewed officials from the DoD Program Management Offices, as well as contracting officials. Documents that we reviewed included contracts, system specifications, and contract solicitations. We also interviewed officials from the Office of the Under Secretary of Defense for Acquisition and Technology.

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 the 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 objective and goal:

Information Technology Management Functional Area.

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

General Accounting Office High-Risk Area. In its identification of risk areas, the General Accounting Office has specifically designated risk in the resolution of the Y2K problem as high. This report provides coverage of that problem and of the overall Information Management and Technology high-risk area.

Methodology

Audit Type, Dates, and Standards. We performed this economy and efficiency audit in July 1998, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We did not use computer-processed data or statistical sampling procedures for this audit.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD and the Services. Further details are available on request.

Management Control Program. We did not review the self-assessment aspects of the management control program as it relates to the audit objectives because the Secretary of Defense Letter of Assurance for FY 1997 recognizes Y2K as a material management control weakness area. In addition, the scope was limited in that the audit consisted of consolidating the results from other ongoing and completed audits that covered the 16 weapon systems.

Summary of Prior Coverage

The General Accounting Office and the Inspector General, DoD, have conducted multiple reviews related to Y2K issues. 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

Appendix B. Weapon Systems Reviewed for Year 2000 Contract Language

Weapon System	Contracts with Y2K language	Contracts without Y2K language
Advanced Amphibious Assault Vehicle[1]		X
AEGIS Baseline Capability 3	X	
Air Force Special Access Program 1	X	
Air Force Special Access Program 3[2]		X
Air Force Special Access Program 4[2]		X
Airborne Warning and Control System[3]	X	X
Comanche Helicopter[4]		X
Joint Services Imagery Processing System	X	
Medium Extended Air Defense System[5]		X
Navy Special Access Program 1[6]	X	X
Navy Special Access Program 4	X	
National Missile Defense Program[7]		X
Patriot Advanced Capability 3	X	
SH-60R LAMPS[8] MK III Block II Upgrade[9]		X
Standard Missile II Block IV/IVA	X	
Standard Missile III Lightweight Exo-Atmosphere Projectile	X	

[1]The demonstration and validation contract for the Advanced Amphibious Assault Vehicle did not contain a requirement for Y2K compliance. Before the audit, officials from the Program Management Office had conducted discussions with the contractor concerning Y2K. After our inquiries on Y2K, the Program Management Office initiated action to incorporate a requirement in the system specification for Y2K compliance.

[2]Air Force Special Access Programs 3 and 4 need to include a requirement for Y2K compliance in their contracts. As a result of our audits, the Program Management Offices initiated action to comply with the Y2K requirement.

[3]The Airborne Warning and Control System did not have a requirement for Y2K compliance in all of its contracts. The Airborne Warning and Control System had

four contracts and one request for proposal that needed a requirement for Y2K compliance. The Program Management Office planned to place Y2K compliance language in three of the contracts. As a result of our audit, the Program Management Office initiated action to insert the Y2K compliance language in the remaining contract and the request for proposal.

[4]The contract for the Comanche helicopter did not contain a requirement for compliance with Y2K. According to officials from the Comanche Program Management Office, the contractor is currently preparing a Y2K plan. After the Comanche Program Management Office reviews and approves the Y2K plan, it will be incorporated into the contract.

[5]The current contract for the Medium Extended Air Defense System did not contain a requirement for Y2K compliance. In March 1998, we informed the program officials of the Y2K deficiency, and they agreed to incorporate a Y2K clause in the contract.

[6]The Navy Special Access Program 1 had one contract that was Y2K compliant and two contracts that did not have a requirement for Y2K compliance. On one of the contracts, the Program Management Office planned to include Y2K language if the contractor was granted an option for maintenance services. As result of our audit, the Program Management Office initiated action to comply with the Y2K requirements.

[7]The Y2K-compliance language was not in the existing contracts for all four elements of the National Missile Defense Program as of March 1998. The National Missile Defense Program is composed of the Ground-Based Radar; the Battle Management Command, Control, and Communications; the Ground-Based Interceptor; and the Upgrade Early Warning Radar. After we identified the deficiency, officials from the Ballistic Missile Defense Organization initiated actions to include a Y2K-compliance clause in the integration and development contract.

[8]Light airborne multi-purpose system.

[9]The contracts for the upgrade of the SH-60 helicopter did not contain a requirement for Y2K compliance. Officials from the SH-60 Program Management Office informed us that they are incorporating a requirement for Y2K compliance into their contracts for the upgrade of the SH-60 helicopter.

Appendix C. Report Distribution

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House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology, 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

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