Audit Report

MARINE FORCES RESERVE PREPARATION FOR YEAR 2000

Report No. 99-118   March 31, 1999

Office of the Inspector General
Department of Defense

Acronym

IT   Information Technology

March 31, 1999

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND,
CONTROL, COMMUNICATIONS, AND
INTELLIGENCE
ASSISTANT SECRETARY OF DEFENSE (RESERVE
AFFAIRS)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on the Marine Forces Reserve Preparation for Year 2000
(Report No. 99-118)

We are providing this report for information and use. This report is one of a
series, the primary purpose of which is to provide the DoD Chief Information Officer
and other senior DoD managers with an independent assessment of the DoD process
related to the year 2000 effort. Because this report contains no findings or
recommendations, no written comments were required, and none were received.

We appreciate the courtesies extended to the audit staff. For additional
information on this report, please contact Mr. Raymond A. Spencer at (703) 604-9071
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report distribution. Audit team members are listed inside the back cover.

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Office of the Inspector General, DoD

Report No. 99-118   March 31, 1999
  (Project No. 9AB-0075)

Marine Forces Reserve Preparation for 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 problem. For a listing of audit projects addressing the issue, see the year 2000 web page on the IGnet at http://www.ignet.gov.

Objectives. The audit objective was to determine whether the Marine Forces Reserve is adequately planning for and managing year 2000 risks to avoid undue disruption to its mission. Specifically, we reviewed year 2000 risk assessments, testing, and contingency plans for systems that support the Marine Forces Reserve mission.

Results. The Marine Forces Reserve is active in ensuring that its information systems and facility infrastructure would be year 2000 compliant. The Marine Forces Reserve uses the same systems for tactical systems as the active forces and therefore was not responsible for their year 2000 issues; however, the Marine Forces Reserve monitors year 2000 progress on these systems to determine their impact on its mission. In addition, the Marine Forces Reserve included the required clause in active contracts to ensure that it procured year 2000 compliant technology. As a result, all the Marine Forces Reserve systems should be year 2000 compliant if planned actions are accomplished.

Management Comments. We provided a draft of this report on February 26, 1999. Because the report contains no findings or recommendations, written comments were not required, and none were received. Therefore, we are publishing this report in final form.

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Background

Information technology systems have typically used two digits to represent the year, such as "98" representing 1998, to conserve electronic data storage and reduce operating cost. With the two-digit format, however, the year 2000 is indistinguishable from 1900. As a result of the ambiguity, computers, associated systems, and application programs that use dates to calculate, compare, and sort could generate incorrect results when working with years after 1999.

Marine Forces Reserve. The Marine Forces Reserve provides service to the community; augments and reinforces active Marine forces in wartime, national emergency, or contingency operations; and provides personnel and operational relief for the active Marine forces in peacetime. The Marine Forces Reserve, located in New Orleans, Louisiana, is the Headquarters Command for the Marine reservists and Reserve units throughout the United States. The four major subordinate commands of the Marine Forces Reserve are the 4th Marine Division, the 4th Marine Aircraft Wing, the 4th Force Service Support Group, and the Marine Corps Reserve Support Command.

Objectives

This audit objective was to determine whether the Marine Forces Reserve is adequately planning for and managing year 2000 risks to avoid undue disruption to its mission. Specifically, we reviewed year 2000 risk assessments, testing, and contingency plans for systems that support the mission and continuity of operations for the Marine Forces Reserve. Appendix A describes the audit scope, methodology, and prior audit coverage.

Status of the Marine Forces Reserve Year 2000 Program

The Marine Forces Reserve is active in ensuring that its information systems and facility infrastructure would be year 2000 compliant. The Marine Forces Reserve uses the same systems for tactical systems as the active forces and therefore was not responsible for their year 2000 issues; however, the Marine Forces Reserve monitors year 2000 progress on these systems to determine their impact on Marine Forces Reserve mission. In addition, the Marine Forces Reserve included the required clause in active contracts to ensure that it procured year 2000 compliant information technology. Therefore, the Marine Forces Reserve initiated actions to assess system compliance, implemented corrective actions, and accurately reported the status of issues concerning potential year 2000 related problems. As a result, the Marine Forces Reserve systems should be year 2000 compliant if planned actions are accomplished.

Marine Forces Reserve Year 2000 Approach

The Marine Forces Reserve followed the "DoD Year 2000 Management Plan" to address the year 2000 problem. In addition, the Marine Forces Reserve followed the "Marine Corps Facility Infrastructure Year 2000 (Y2K) Action Plan," October 1998, to evaluate each facility. The Commander, Marine Forces Reserve, issued a Letter of Instruction on August 26, 1998, that designated the Assistant Chief of Staff, Information Systems, to assume staff responsibility for Marine Forces Reserve year 2000 preparations and designated the Assistant Chief of Staff, Facilities, to assume supporting staff responsibility for building automation and security systems. The Letter of Instruction also established December 1998 as the target completion date for corrective action for mission-essential systems and March 1999 for mission-support systems.

Marine Forces Reserve Year 2000 Status

The responsibility for ensuring that the Marine Corps is year 2000 compliant rests with the system sponsors and the Headquarters, Marine Corps. The systems include centrally supported automated information systems; weapon and aircraft systems; and manpower, fiscal, supply, and maintenance systems. Marine Forces Reserve officials also monitor the year 2000 compliance efforts of systems for which the Marine Forces Reserve is not responsible, but upon which it relies. The Marine Forces Reserve is responsible for the Reserve Information Network (R-NET) and facilities systems.

Automated Information System. The R-NET is a mission-essential, automated information system supporting the Marine Forces Reserve. The R-NET provides the Marine Forces Reserve with interpersonal communications, access to organizational data, and the ability to accomplish many work processes and functions.

The R-NET system is connected to about 200 sites at various locations within the continental United States and has about 12,000 electronic mail accounts. The system architecture is based on commercial-off-the-shelf technology, which includes servers, routers, hubs, and computers. The following chart identifies the year 2000 status of the hardware systems.

Year 2000 Status of Hardware Systems

Hardware	On-hand	Compliant	Noncompliant
Routers	253	253	0
Servers	310	310	0
Hubs	424	422	2
80286 Computers	33	10	23
80386 Computers	134	95	39
80486 Computers	3202	2638	564
Pentium Computers	4273	3919	354
Laptop Computers	1581	1370	211

The Marine Forces Reserve updated the routers, switches, and servers to meet the year 2000 compliance requirement. In addition, the Marine Forces Reserve purchased commercial-off-the-shelf software to test and fix noncompliant computers and plan to replace or dispose of computers that remain non-compliant. Finally, the Marine Forces Reserve used a time test process to determine the year 2000 compliance of the R-NET system and found no significant problems.

In addition, the Marine Forces Reserve found no year 2000 related problems with 567 printers, 247 fax machines, and 181 key systems.

Facility Infrastructure. The Facility Infrastructure Year 2000 Program implements Marine Corps' policies, procedures, and other guidance to satisfy the year 2000 issues. The Assistant Chief of Staff for Facilities identified that fire alarm systems; heating, ventilation, and air conditioning systems; and elevators are year 2000 compliant. The armory intrusion detection systems at 4 of the 190 sites are noncompliant. Three of the four intrusion detection systems will become compliant when replacement systems and software are installed, which is planned for the end of May 1999. The fourth noncompliant intrusion detection system is located on an Army installation, and the Army plans to upgrade that site by August 1999.

The Marine Forces Reserve units were directed to develop redundant security measures as contingency plans in case the intrusion detection system and fire alarm system failed. The two sites that possessed elevators were directed to develop alternative entrances and exits, and in the event of heating, ventilation, and air conditioning system failure, units were directed to identify alternate work and storage facilities.

Tactical Weapon Systems. The Marine Forces Reserve uses the same tactical weapon systems as the active Marine Corps. The active Marine Corps is responsible for the year 2000 compliance of tactical weapon systems used by the Marine Corps including Marine Forces Reserve systems.

The Marine Forces Reserve uses 32 tactical weapon systems that have been identified as mission critical. Of the 32 systems, 31 were reported as year 2000 compliant. The noncompliant mission-critical system was the special security communications system (AN/MSC-63A). The security communications system is in renovation and should be year 2000 compliant by June 1, 1999. The Marine Forces Reserve monitors the year 2000 compliance status of tactical weapon systems and the development of contingency plans. The responsibilities for year 2000 compliance and contingency plan development belong to the Marine Corps and Military Department system managers.

The Marine Forces Reserve plans to test the year 2000 compliance of some of the command, control, and communications systems during an exercise in June 1999. Each of these systems was reported as year 2000 compliant and the exercise will determine whether the systems remain year 2000 compliant in an operational environment.

Contracting

The Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued a policy memorandum to the Secretaries of the Military Departments and the Directors of the Defense agencies on "Acquisition of Year 2000 Compliant Information Technology (IT) and Bringing Existing IT Into Compliance," December 18, 1997. The memorandum required the review of information technology (IT) contracts and other acquisition instruments to determine whether modifications were necessary. The memorandum states that orders for information technology shall not be placed on a contract or other acquisition instrument unless the information technology purchase is year 2000 compliant. A Secretary of Defense memorandum "Year 2000 Compliance," August 7, 1998, required that funds not be obligated for any information technology contract that does not contain the year 2000 requirements specified in the Federal Acquisition Regulation.

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The Marine Forces Reserve did not review IT contracts as required by the Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum and did not start including the year 2000 compliance clause in all IT contracts until June 1998.

The Marine Forces Reserve awarded 103 IT contracts from January 6 through October 15, 1998, that should have included the year 2000 clause. We reviewed 10 of the 103 IT contracts; four contracts awarded before June 1998 and six contracts awarded after June 1998. All six IT contracts awarded after June 1998 contained the required year 2000 language. Although contracting officials did not modify contracts awarded before June 1998 for inclusion of the year 2000 clause, the contract deliverables had been received at the time of the audit and the contracts were being closed out.

Conclusion

The Marine Forces Reserve are actively ensuring that its information systems and facility infrastructure are year 2000 compliant and are monitoring year 2000 efforts for tactical weapon systems. With continued efforts, the year 2000 risk to the Marine Forces Reserve mission capability should be low.

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 year 2000 computing challenge. For a listing of audit projects addressing this issue, see the year 2000 webpage on IGnet at <http://www.ignet.gov>.

Scope

Work Performed. We reviewed and evaluated the progress of the Marine Forces Reserve in resolving the year 2000 computing issue. We evaluated the year 2000 efforts of the Marine Forces Reserve; compared the actions with the DoD Year 2000 Management Plan; conducted discussions with technical, business, and contracting officials; and evaluated year 2000 documentation where available.

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

- **Objective:** Prepare now for the 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:

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 DoD information infrastructure. **(ITM-2.2)**

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

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General Accounting Office High-Risk Area. In its identification of risk areas, the General Accounting Office has specifically designated risk in resolution of the year 2000 problem as high. This report provides coverage of that problem and of the overall Information Technology Management high-risk area.

Methodology

Audit Type, Dates, and Standards. We performed this economy and efficiency audit from November 1998 through February 1999, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We did not rely on computer-processed data or statistical sampling procedures to develop conclusions on this audit.

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

Management Control Program. We did not review the management control program related to the overall audit objective because DoD recognized the year 2000 issue as a material management control weakness area in the FY 1998 Annual Statement of Assurance.

Summary of Prior Coverage

The General Accounting Office; the Inspector General, DoD; the Naval Audit Service; and the Marine Corps Inspector General have conducted multiple reviews related to year 2000 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. However, no prior reviews related to year 2000 have been conducted at the Marine Forces Reserve.

Appendix B. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
    Director, Defense Procurement
    Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
    Deputy Chief Financial Officer
    Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
    Deputy Assistant Secretary of Defense (Command, Control, Communications, and
      Intelligence)
    Deputy Chief Information Officer and Deputy Assistant Secretary of Defense (Chief
      Information Office Policy and Implementation)
      Principal Deputy Year – 2000
Assistant Secretary of Defense (Public Affairs)

Department of the Navy

Commandant of the Marine Corps
    Commander, Marine Forces Reserve
Assistant Secretary of the Navy (Financial Management and Comptroller)
Chief Information Officer, Department of the Navy
Inspector General, Department of the Navy
Auditor General, Department of the Navy
Inspector General, Marine Corps

Other Defense Organization

Defense Information Systems Agency
    United Kingdom Liaison, Defense Information Systems Agency

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Office of Management and Budget
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      Information Management Division, General Accounting Office

Chairman and Ranking Minority Member of Each 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
Senate Special Committee on the Year 2000 Technology Problem
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Government Reform
House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform
House Subcommittee on National Security, Veteran Affairs, and International Relations, Committee on Government Reform

Audit Team Members

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

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