

Audit



Report

YEAR 2000 COMPLIANCE OF THE WORLDWIDE PORT SYSTEM

Report No. 99-190

June 18, 1999

Office of the Inspector General
Department of Defense

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Acronyms

MTMC	Military Traffic Management Command
WPS	Worldwide Port System
Y2K	Year 2000



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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ARLINGTON, VIRGINIA 22202

June 18, 1999

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE (LOGISTICS)
COMMANDER IN CHIEF, U.S. TRANSPORTATION
COMMAND
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Year 2000 Compliance of the Worldwide Port System
(Report No. 99-190)

We are providing this report for your information and use. 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 efforts to address the year 2000 computing challenge. Because this report contains no 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. Robert M. Murrell at (703) 604-9210 (DSN 664-9210) (rmurrell@dodig.osd.mil) or Mr. Joseph M. Austin at (703) 604-9178 (DSN 664-9178) (jaustin@dodig.osd.mil). See Appendix B for the report distribution. Audit team members are listed inside the back cover.

A handwritten signature in cursive script, reading "Robert J. Lieberman", is positioned above the typed name.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 99-190
(Project No. 9LH-5039.03)

June 18, 1999

Year 2000 Compliance of the Worldwide Port System

Executive Summary

Introduction. This 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 efforts to address the year 2000 (Y2K) computing challenge. For a list of audit projects addressing the issue, see the Y2K webpage on the IGnet at <http://www.ignet.gov/>

The Worldwide Port System (WPS) is a mission-critical automated information system designed to support the operational requirements of DoD for tracking and documenting the movement of DoD ocean cargo through water ports. It is fielded at 72 Army and Navy organizations worldwide.

Objectives. The overall audit objective was to evaluate whether DoD was adequately planning for and managing Y2K risks for selected logistics systems to avoid disruption of the DoD mission. Specifically, we reviewed the Y2K risk assessments, testing, and contingency planning for selected logistics systems that support the DoD mission. For this report, we reviewed the WPS.

Results. WPS had a low risk of failure associated with Y2K processing. The WPS program manager implemented a certification process that verified and certified WPS in accordance with DoD and Army Y2K guidance. The program manager documented test plans and test results, established interface agreements for systems with which WPS interfaced, and prepared contingency plans before system certification. Furthermore, a contracted independent assessment concluded that WPS faces a low risk of Y2K-related disruptions. As a result, WPS should be able to support operational requirements for tracking and documenting the movement of DoD ocean-bound cargo through water ports in a Y2K environment.

Management Comments. We provided a draft of this report on May 6, 1999. 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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Background

This report is one in a series of reports resulting from our audits of selected logistics systems that support the DoD mission. This report discusses year 2000 (Y2K) issues for the Worldwide Port System (WPS).

Executive Order. The Executive Order, "Year 2000 Conversion," February 4, 1998, mandates that Federal agencies do what is necessary to ensure that no critical Federal programs experience disruption because of the year 2000 computing problem. The Executive Order requires that the head of each agency ensure that efforts to address Y2K issues receive the highest priority in the agency.

DoD Y2K Management Plan. The "DoD Year 2000 Management Plan," (DoD Management Plan) version 2, December 1998, provides guidance for testing and certifying systems and preparing contingency plans for those systems, and stipulates the criteria that DoD Components must use to meet reporting requirements.

Army Y2K Action Plan. The "Army Year 2000 Action Plan," (Army Action Plan) revision II, June 1998, outlines the Army Y2K management strategy; provides guidance, and defines roles, responsibilities, and reporting requirements. The plan applies to all systems supported by information technology, their technical environment, and their communications devices.

Military Traffic Management Command. The U.S. Military Traffic Management Command (MTMC), located in Falls Church, Virginia, is the surface transportation component of the U.S. Transportation Command. MTMC provides management control over international surface cargo bookings and cargo movement, ocean carrier contract administration, worldwide water terminal participation in field training exercises, and functional requirements for transportation automated systems to support international surface cargo operations and management. The WPS Program Management Office is responsible for all development and implementation activities associated with the MTMC automated cargo traffic management information system.

Worldwide Port System. WPS is a mission-critical automated information system designed to support the operational requirements of DoD for tracking and documenting the movement of DoD ocean cargo through water ports. It is fielded at 72 Army and Navy organizations worldwide.

Objectives

The overall audit objective was to evaluate whether DoD was adequately planning for and managing Y2K risks for selected logistics systems to avoid disruption of the DoD mission. Specifically, we reviewed Y2K risk assessments, testing, and contingency planning for selected logistics systems that support the DoD mission. For this report, we reviewed the WPS. See Appendix A for a discussion of the scope and methodology and for a summary of prior coverage.

Year 2000 Compliance of the Worldwide Port System

WPS had a low risk of failure associated with Y2K processing. The WPS program manager implemented a certification process that verified and certified WPS in accordance with DoD and Army Y2K guidance. The program manager documented test plans and test results, established interface agreements for systems with which WPS interfaced, and prepared contingency plans before system certification. Furthermore, a contracted independent assessment concluded that WPS faces a low risk of Y2K-related disruptions. As a result, WPS should be able to support operational requirements for tracking and documenting the movement of DoD ocean-bound cargo through water ports in a Y2K environment

Compliance Milestone

The DoD Management Plan provides guidance for testing and certifying systems and preparing contingency plans for those systems, and stipulates the criteria that DoD Components must use to meet reporting requirements

MTMC met the DoD Management Plan milestone of December 31, 1998, for completion of the implementation phase for mission-critical systems. WPS was certified by the Army Deputy Chief of Staff for Logistics (Director of Transportation, Energy and Troop Support) on December 2, 1998

Army Certification Process

The WPS program manager followed the certification process outlined in the Army Action Plan. WPS certification was supported by documented test plans and test reports and by compliance checklists and matrixes that summarized the results of Y2K compliance assessments and tests. Interface agreements and contingency plans also supported the certification process

Testing Y2K Compliance. From September 14, 1998, through October 23, 1998, Lockheed Martin Support Services, under contract with MTMC, verified the ability of WPS to successfully process data containing Y2K dates with no adverse affect on the end users. Lockheed Martin Support Services created test scenarios that reflected actual WPS operations and ran them in four time periods, with data used in and maintained from one phase to the next. Specific dates tested included dates in the 20th and 21st centuries, dates crossing 1999 and 2000, and leap year dates. Problems noted during the compliance test were fixed and regression testing* was conducted. Regression testing was conducted from October 26 through October 30, 1998. The testing validated that problems associated with Y2K issues had been fixed.

Interface Agreements. The WPS Program Management Office identified all external interfaces and had signed interface agreements with the organizations

* Selective retesting to detect faults introduced during modification of a system

that were responsible for maintaining systems with which WPS interfaced. The agreements described interface configuration management and program management issues. If the sending or receiving system made any changes to the interface, each system manager would notify the other as soon as the change was determined. During testing, interface data were generated and passed into and out of the WPS in a simulated environment with data captured and analyzed.

WPS Y2K Contingency Plans. The WPS Program Management Office developed both system and operational contingency plans for WPS. The plans identified Y2K risk contingencies and provided preparatory, execution, and recovery actions to minimize the affect of Y2K-related disruption.

Contingency plans included the probability and the consequences of the identified Y2K-related risks on WPS. The plans described specific actions that the functional users, the operations manager, system managers, system administrators, database administrators, and help desk personnel would take to minimize potential Y2K interruptions or failures of WPS operations.

Certification of WPS. WPS was certified in accordance with the DoD Management Plan and Army Action Plan. The Commander, MTMC certified the WPS as Y2K compliant on November 5, 1998. On December 2, 1998, the Army Deputy Chief of Staff for Logistics (Director of Transportation, Energy and Troop Support) also certified the WPS. MTMC and the Army certified WPS to

- validate the effectiveness of Y2K solutions,
- provide a consolidated document to record organizations demonstrating due diligence, and
- provide a clear and complete audit trail.

Those purposes were adequately supported by documented test plans and test reports, compliance checklists and matrixes that summarized the results of compliance assessments and tests, interface agreements, and contingency plans.

Independent Assessment. MTMC hired Computer Sciences Corporation to conduct an independent assessment of the WPS certification process and documentation. The contractor evaluated the certification testing procedures and test results and compared the test strategy to the critical functions of WPS to ensure that all functions were appropriately tested. The Computer Sciences Corporation also tested for the adequacy and coverage of Y2K technical risks. It concluded that WPS had a low risk for Y2K failure and that the WPS met the requirements of the Army Certification Checklist.

Conclusion

The WPS Program Management Office complied with DoD and Army guidance in processing the WPS Y2K certification. Specifically, the certification of WPS, the development of contingency plans, and the independent assessment minimize the risk of a WPS failure associated with Y2K processing. Therefore, we are making no recommendations in this report.

Appendix A. Audit Process

This 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 list of audit projects addressing the issue, see the Y2K webpage on the IGnet at <http://www.ignet.gov/>.

Scope and Methodology

We reviewed documented efforts that Headquarters, Department of the Army, the U.S. Transportation Command; MTMC; and contractor representatives made to ensure that Y2K problems would not disrupt operations of WPS. We obtained and reviewed the DoD Management Plan and the Army Action Plans for policy guidance on Y2K program management and reporting. We obtained and reviewed documentation on the WPS status, interface agreements, test plans, test reports, contingency plans, and the Army certification process. We reviewed and analyzed documents dated from October 1997 through April 1999. Also, we interviewed key personnel from the organizations that were responsible for management of the WPS to determine its Y2K status. We used the information from the documents and interviews to assess the Y2K compliance status of the WPS. Data reviewed were current as of April 1999.

DoD-Wide Corporate Level Goals. In response to the Government Performance and Results Act, DoD 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 war fighting 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 objectives and goals in the 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)

High-Risk Area. In its identification of high-risk areas, the General Accounting Office has specifically designated risk in 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.

Use of Technical Assistance. A computer engineer from our Technical Assessment Division assisted in analyzing the WPS certification test plan and test results.

Audit Type, Dates, and Standards. We performed this program audit from March through April 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 use computer-processed data to perform this audit.

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

Management Control Program. We did not review the management control program related to the overall audit objective because DoD recognized the Y2K issue as a material management control weakness area in the FY 1998 Annual Statement of Assurance.

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. Report Distribution

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Commander in Chief, U.S. Central Command
Commander in Chief, U.S. Transportation Command
Commander, Military Traffic Management Command

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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 Armed Services
House Committee on Government Reform
House Subcommittee on Government Management, Information, and Technology,
Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International Relations,
Committee on Government Reform
House Subcommittee on Technology, Committee on Science

Audit Team Members

The Readiness and Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD, prepared this report.

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