Audit Report

YEAR 2000 COMPLIANCE OF SELECTED
HEADQUARTERS STANDARD SYSTEMS GROUP SYSTEMS

Report No. 99-213 July 14, 1999

Office of the Inspector General
Department of Defense

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Acronyms

AFASI	Air Force Automated System Inventory
COMPES	Contingency Operations Mobility Planning Execution System
HQSSG	Headquarters Standard Systems Group
LOGMOD	Logistics Module
PACOM	U.S. Pacific Command

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

July 14, 1999

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE)
COMMANDER IN CHIEF, U.S. PACIFIC COMMAND
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)

SUBJECT: Audit Report on Year 2000 Compliance of Selected Headquarters Standard Systems Group Systems (Report No. 99-213)

We are providing this report for your review and comment. This is one in a series of reports being issued by the Inspector General, DoD, to monitor efforts to address the year 2000 computing challenge. The Air Force did not respond to the draft report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly and year 2000 conversion issues bear special urgency. Therefore, we request that the Air Force provide comments on the final report by July 28, 1999.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Wayne K. Million, at (703) 604-9312 (DSN 664-9312) (wmillion@dodig.osd.mil) or Ms. Judith I. Padgett, at (703) 604-9217 (DSN 664-9217) (jpadgett@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. 99-213 **July 14, 1999**
Project No. 9CC-0086.07

Year 2000 Compliance of Selected Headquarters Standard Systems Group Systems

Executive Summary

Introduction. 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. For a listing of audit projects addressing the issue, see the year 2000 webpage on the IGnet at www.ignet.gov.

Objectives. The overall audit objective was to assess the status of selected Military Department and Defense agency mission-critical systems identified by U.S. Pacific Command and U.S. Pacific Air Force as being of particular importance to them in attaining compliance with year 2000 conversion requirements. Specifically, we reviewed the progress of each system toward year 2000 compliance, testing and integration of modifications, and contingency plans. For this report, we reviewed two Headquarters Standard Systems Group managed systems, the Logistics Module and the Contingency Operations Mobility Planning Execution System used by the U.S. Pacific Air Force.

Results. The Headquarters Standard Systems Group Systems management implemented a certification process that verified and certified their systems. Headquarters Standard Systems Group program managers tested the Logistics Module and the Contingency Operations Mobility Planning Execution System to ensure that system and interface interoperability were year 2000 compliant. The Executive Director, Headquarters Standard Systems Group, certified compliance of the Logistics Module, October 8, 1998, and the Contingency Operations Mobility Planning Execution System, December 23, 1998. Headquarters Standard Systems Group reported and maintained the year 2000 status of their systems in the Air Force Automated Systems Inventory.

Headquarters Standard Systems Group year 2000 policy requires program managers to obtain independent verification of system testing and to prepare system contingency plans. However, the Logistics Module and the Contingency Operations Mobility Planning Execution System contingency plans were not effective in identifying actions to preserve and protect the system and data before, during, and after a year 2000-related failure. Consequently, the Logistics Module and the Contingency Operations Mobility Planning Execution System contingency plans do not provide the user with all necessary procedures that would expedite restoration of the systems and continuation of essential functions, should the systems fail.

Summary of Recommendations. We recommend that the Director, Headquarters Standard Systems Group, prepare contingency plans for the Logistics Module and the

Contingency Operations Mobility Planning Execution System in accordance with the DoD Year 2000 Management Plan guidance, validate that the contingency plans are executable, and distribute the plans to system users.

Management Comments. We provided a draft of this report on May 25, 1999. The Air Force did not provide official comments on the draft report; therefore, we request that the Air Force comment on the final report by July 28, 1999.

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Background

DoD Management Plan. As the DoD, Chief Information Officer, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence issued the "DoD Year 2000 Management Plan" (DoD Management Plan) in August 1997, a revised plan in June 1998, and the most current version in December 1998. The DoD Management Plan provides the overall DoD strategy and guidance for inventorying, prioritizing, fixing, or retiring systems, system contingency planning, and for monitoring progress. The DoD, Chief Information Officer has overall responsibility for overseeing the DoD solution to the year 2000 problem. The DoD Components implement the DoD Management Plan year 2000 process. DoD goals for mission-critical systems has been to complete deployments of compliant renovated and replacement systems by December 31, 1998, complete system contingency planning by December 30, 1998, and validate system contingency plans by June 30, 1999.

Secretary of Defense Guidance. On August 7, 1998, the Secretary of Defense issued the "Year 2000 Compliance'' memorandum, which defined the year 2000 computer problem as a critical national defense issue. The Secretary's memorandum also requires each of the Unified Commanders in Chief to report the status of year 2000 implementation within their commands and subordinate components after October 1998.

U.S. Pacific Command. The U.S. Pacific Command (PACOM) is the largest of the nine unified commands in the Department of Defense. The PACOM mission is to promote peace, deter aggression, respond to crises, and, if necessary, fight and win to advance security and stability throughout the Asian-Pacific region.

The Component commands from each Service (U.S. Army Pacific, U.S. Pacific Fleet, U.S. Pacific Air Force, and Marine Forces Pacific) support PACOM, which is headquartered at Camp Smith, Hawaii. In addition, PACOM exercises combatant controls over four subunified commands within the Pacific region. The subunified commands are the U.S. Forces Japan, U.S. Forces Korea, Alaskan Command, and Special Operations Command Pacific.

Headquarters Standard Systems Group Systems. Headquarters Standard Systems Group (HQSSG) located at Maxwell Air Force Base-Gunter Annex, Alabama, manages standard information systems commonly used by the Air Force and many Defense agencies. HQSSG provides acquisition, development, and maintenance services of standard information systems worldwide. Among the systems that HQSSG manages are the Logistics Module (LOGMOD) and the Contingency Operations Mobility Planning Execution System (COMPES). PACOM identified both of those systems as mission-critical. The LOGMOD and COMPES provide PACOM with planning and execution for joint deliberate and crisis operations. LOGMOD provides the user the capability for logistics mobility and reception planning and execution to support worldwide deployment of forces. COMPES provides personnel, operations, and logistics command and control for planning and executing deliberate and crisis operations.

Air Force Automated Systems Inventory. The Air Force Communications Agency developed the Air Force Automated Systems Inventory (AFASI) to inventory all Air Force automated information systems and weapons systems. AFASI is an internet-accessible database. To access AFASI, a user must establish an account with the Air Force Communications Agency.

AFASI Uses. The Air Force uses AFASI to track-inventoried systems' progress toward year 2000 compliance and to update the Defense Integration Support Tools. All major commands and field operating agencies use AFASI to maintain their systems' year 2000 status. The AFASI is also used to report the status of the Air Force year 2000 effort to the Air Force Combat Intelligence Operations Center, Information Technology, who in turn reports to the Office of the Secretary of Defense.

AFASI Information. HQSSG maintained the year 2000 status for all its managed information systems, including LOGMOD and COMPES, in AFASI. AFASI provides all users with detailed information on Air Force information systems' year 2000 status. AFASI provides users information regarding system certification, the compliance phase completed, compliance costs, system interfaces, and interface agreements. AFASI also provides the user a system description, data on the system's hardware and software components, and each system's points of contact.

Objectives

The overall audit objective was to assess the status of selected Military Department and Defense agency mission-critical systems identified by the U.S. Pacific Command and U.S. Forces Korea as being of particular importance to them in attaining compliance with year 2000 conversion requirements. Specifically, we reviewed the progress of each system towards year 2000 compliance, testing and integration of modifications, and contingency plans. For this report, we reviewed two HQSSG-managed systems, LOGMOD and COMPES, operated within the PACOM area of responsibility. See Appendix A for a discussion of the audit process and a summary of prior coverage.

Year 2000 Status of Headquarters Standard Systems Group Systems

The HQSSG management implemented a certification process that verified and certified their systems. HQSSG program managers tested LOGMOD and COMPES to ensure systems and interface interoperability were year 2000 compliant. The Executive Director, HQSSG, certified compliance of LOGMOD, October 8, 1998, and COMPES, December 23, 1998. HQSSG reported and maintained the year 2000 status of their systems in AFASI. HQSSG year 2000 policy requires program managers to obtain independent verification of system testing and to prepare system contingency plans. However, LOGMOD and COMPES program managers did not develop system contingency plans consistent with DoD policy. Therefore, LOGMOD and COMPES system contingency plans were not effective in identifying actions to preserve and protect the system and data before, during, and after a year 2000-related failure. Consequently, LOGMOD and COMPES contingency plans do not provide the user with all necessary procedures that would expedite restoration of the systems and continuation of essential functions should the systems fail.

Year 2000 Status

The HQSSG management implemented a certification process that verified and certified their systems. Both the LOGMOD and the COMPES program offices performed the necessary testing, obtained independent test validation, and obtained interface agreements to ensure their systems achieved year 2000 certification. The Executive Director, HQSSG, certified compliance of LOGMOD, October 8, 1998, and COMPES, December 23, 1998.

Systems Descriptions. LOGMOD provides logistics planners and deployment managers with a relational database that is crucial for planning and executing the deployment, reception, and redeployment of forces supporting combat exercises, contingencies, and tasks worldwide. As of December 28, 1998, LOGMOD was fielded at 367 sites worldwide. COMPES provides the users with personnel, operations, and logistics command and control for planning and executing deliberate and crisis operations. COMPES directly supports the Global Command and Control System, and allows the Air Force to support service and joint crisis operations.

Certification Process. The HQSSG management implemented a certification process that verified and certified their systems. HQSSG Instruction 33-5, "Year 2000 Policy," June 19, 1998, implements the Air Force year 2000 compliance requirements and establishes the certification process for HQSSG managed systems. The process requires program managers to verify their system compliance and submit a certification package to HQSSG, Test and

Evaluation Division. The package includes the system test plan, test results, and the Air Force year 2000 checklist in support of compliance certification. The Test and Evaluation Division is an independent testing organization in the system program office. The Test and Evaluation Division performs test validation either by independently testing the system or auditing the program office's testing procedures and results. The Test and Evaluation Division validates the program office's package. After validation, the Test and Evaluation Division forwards the package to the Year 2000 Project Office. The Year 2000 Project Office processes the certification package for coordination and signatures.

Year 2000 Testing. HQSSG program managers tested LOGMOD and COMPES to ensure that systems and interface interoperability were year 2000 compliant. The HQSSG, Test and Evaluation Division independently tested LOGMOD year 2000 compliance and audited COMPES test procedures and results.

LOGMOD. On September 1, 1998, the LOGMOD program office completed initial year 2000 testing. The test included procedures for testing interoperability with LOGMOD interfaces. The program office tests demonstrated that LOGMOD could successfully process data containing dates. On September 22, 1998, the Test and Evaluation Division validated LOGMOD passed qualification validation testing for year 2000 scenarios. The HQSSG, Test and Evaluation Division independently tested LOGMOD year 2000 compliance. The independent test validated the program office September 1998 results. During February 1999, the program office performed a year 2000 end-to-end test of LOGMOD to verify the operational readiness of the primary functions. HQSSG performed the end-to-end testing as a prelude to operations evaluation tests scheduled for July 1999.

COMPES. On September 10, 1998, the COMPES program office completed year 2000 testing. The COMPES tests included all date-related interfaces. The tests demonstrated that COMPES is capable of formatting, converting, and storing all date field attributes. The Logistic Feasibility Analysis Capability module of COMPES is not date sensitive. The HQSSG, Test and Evaluation Division performed an independent validation of the program office testing procedures and results. On October 2, 1998, the Test and Evaluation Division validated that COMPES passed qualification validation testing for year 2000 scenarios. As of April 19, 1999, HQSSG and the Electronic Systems Center, Hanscom Air Force Base, Massachusetts, were performing end-to-end testing of COMPES.

System Interfaces. The LOGMOD and COMPES program managers obtained interface agreements with information systems that communicate with their systems. The agreements provide the technical aspects and specify the message-level electronic data interchange among the systems that interface with COMPES and LOGMOD. The agreements specify:

- the review and acceptance process,
- the description of the system interface,

- the interface strategy for both sending and receiving systems, and
- information to contact the managers for each interfacing system.

Contingency Planning

The LOGMOD and COMPES program managers did not develop contingency plans consistent with DoD policy. Therefore, LOGMOD and COMPES system contingency plans were not effective in identifying actions to preserve and protect the system and data before, during, and after a year 2000-related failure.

DoD Policy. The DoD Management Plan defines system contingency planning as the primary management tool to prepare for unanticipated disruptions. No guarantee exits that DoD systems that were renovated and tested will be risk-free by January 1, 2000. Therefore, effective contingency planning lessens the threat of year 2000 failures and ensures that essential functions continue to operate. The DoD Management Plan requires managers of mission critical systems to prepare contingency plans that identify:

- system support actions, primary roles, and responsibilities;
- potential risks, effects, and likelihood of occurrence;
- impacts to hardware, software, communications, and system interfaces;
- contingencies, solutions, and workarounds for each identified risk;
- additional training and personnel requirements to accomplish manual workarounds;
- contingent actions and appropriate trigger or start dates;
- potential impact on users;
- necessary actions to ensure that the proper coordination activities are accomplished; and
- procedures for plan maintenance, review, and updates to ensure that the plan accurately reflects current information.

The DoD Management Plan also requires that system managers validate their contingency plans by June 1999 to ensure mitigating actions are executable. A contingency plan establishes, organizes, and documents risk assessments, responsibilities, policies, and procedures, as well as agreements and understandings for all internal and external organizations. Personnel should be trained to execute contingency plans, and the plans should be tested and updated periodically to ensure that they remain current and valid. Relevant contingency

information should be exchanged between program or system managers of interfaced systems and with all system users.

LOGMOD and COMPES Contingency Plans. The LOGMOD and COMPES contingency plans did not effectively identify technical aspects of year 2000 disruptions and mitigating actions to sustain the systems' mission critical capabilities. The contingency plans discussed general scenarios to follow in the event the systems fail or are unavailable, regardless of the reason. However, neither plan specifically identified actions to preserve and protect the system and data before, during, and after a year 2000-related failure. For example, neither plan identified the impact of interface, software, data corruption, communication, hardware, or power failures upon the systems nor identified related workaround scenarios.

Neither plan specifically identified the personnel required during a contingency situation or recovery action. Although both plans discussed roles and responsibility in general, they did not provide detailed year 2000 emergency responses or help desk procedures. The contingency plans did not include procedures to maintain, review, or update the plans. According to HQSSG management, they had not tested the plans to validate that the actions were executable and had not distributed the plans to system users. The LOGMOD and COMPES contingency plans were ineffective in providing the user with predetermined actions that would streamline decisionmaking to continue essential functions during a year 2000 contingency.

HQSSG management acknowledged the lack of essential procedures in the two contingency plans. Management planned procedural changes that would enhance the current process of developing, assessing, implementing, validating, and distributing contingency plans. HQSSG also planned to review all systems contingency plans and to select mission critical systems' plans for validation.

Conclusion

HQSSG program managers tested LOGMOD and COMPES to ensure systems and interface interoperability were year 2000 compliant. The Executive Director, HQSSG, certified compliance of LOGMOD October 8, 1998, and COMPES December 23, 1998. However, LOGMOD and COMPES program managers did not develop contingency plans consistent with DoD policy. Therefore, LOGMOD and COMPES system contingency plans were ineffective in providing the user with predetermined actions that would streamline decision-making during a year 2000 contingency.

Recommendations

We recommend the Director, Headquarters Standard Systems Group:

1. Prepare contingency plans for the Logistics Module and the Contingency Operations Mobility Planning Execution System in accordance with the DoD Year 2000 Management Plan.

2. Validate that the contingency plans are executable.

3. Distribute the contingency plans to system users.

Management Comments Required

The Air Force did not comment on a draft of this report. We request that the Air Force provide comments on the final report by July 26, 1999.

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 web pages on the IGnet at www.ignet.gov.

Scope

We reviewed and assessed the year 2000 compliance status of the HQSSG LOGMOD and COMPES. PACOM identified both of those systems as critical to their mission. We interviewed HQSSG program officials and reviewed interface documents, test plans, test reports, contingency plans, and the HQSSG certification process to obtain year 2000 compliance status of the systems.

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 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 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)**

- **Information Technology Management Functional Area. Objective:** Provide services that satisfy customer information needs. **Goal:** Modernize and integrate DoD information infrastructure. **(ITM-2.2)**

- **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 resolution of the year 2000 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 program audit from March to May 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 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 and the Inspector General, DoD, have conducted multiple reviews related to year 2000 issues. General Accounting Office reports can be accessed over the Internet at www.gao.gov. Inspector General, DoD, reports can be accessed at www.dodig.osd.mil.

Appendix B. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Logistics)
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
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  Deputy Comptroller (Program/Budget)
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  Deputy Chief Information Officer and Deputy Assistant Secretary of Defense (Chief Information Officer Policy and Implementation)
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Commander in Chief, U.S. Pacific Command
Commander in Chief, U.S. Atlantic Command
Commander in Chief, U.S. Central Command
Commander In Chief, U.S. Special Operations Command
Commander In Chief, U.S. Transportation Command

Defense Organizations

Director, Defense Information Systems Agency
  Chief Information Officer, Defense Information Systems Agency
  Inspector General, Defense Information Systems Agency
  United Kingdom Liaison Officer, Defense Information Systems Agency
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency
Inspector General, National Imagery and Mapping Agency
Inspector General, National Reconnaissance Office

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
  Office of Information and Regulatory Affairs
General Accounting Office
  National Security and International Affairs Division
    Technical Information Center
  Director, Defense Information and Financial Management Systems
    Accounting and Information Management Division

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

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 Committee on Armed Services
House Subcommittee on National Security, Committee on Appropriations
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