

Audit

Report



STATUS OF RESOURCES AND TRAINING SYSTEM
YEAR 2000 ISSUES

Report No. 99-197

June 29, 1999

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Acronyms

AFSORTS	Air Force Status of Resources and Training System
ASORTS	Army Status of Readiness and Training System
GCCS	Global Command and Control System
GCCS-A	Global Command and Control System-Army
GCCS-Maritime	Global Command and Control System-Maritime
GOMERS	Global Online Marine Edit and Report System
GSORTS	Global Status of Resources and Training System
SORTS	Status of Resources and Training System
Y2K	Year 2000



INSPECTOR GENERAL
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June 29, 1999

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR PERSONNEL
AND READINESS
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL
MANAGEMENT AND COMPTROLLER)
ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, DEFENSE INFORMATION SYSTEMS
AGENCY
DIRECTOR, JOINT STAFF
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Status of Resources and Training System Year 2000 Issues
(Report No. 99-197)

We are providing this report for review and comment. We considered management comments on a draft of this report in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly and there is special urgency regarding year 2000 conversion issues. We did not receive comments from the Army and the Air Force in response to the draft report. Therefore, we request that the Army provide comments on Recommendation A.2. and the Air Force provide comments on Recommendation A.3. We request the comments by July 15, 1999.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Ms. Evelyn R. Klemstine at (703) 604-9172 (DSN 664-9172) (eklemstine@dodig.osd.mil) or Mr. Timothy E. Moore at (703) 604-9633 (DSN 664-9633) (tmoore@dodig.osd.mil). See Appendix E for the report distribution. Audit team members are listed inside the back cover.

A handwritten signature in black ink, reading "Robert J. Lieberman", is positioned above the printed name.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 99-197
(Project No. 9LG-9019)

June 29, 1999

Status of Resources and Training System Year 2000 Issues

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

The Status of Resources and Training System is an automated system within DoD that provides the National Command Authorities and the Joint Chiefs of Staff with authoritative data for registered units. The Status of Resources and Training System provides readiness data used in the Chairman's [of the Joint Chiefs of Staff] Readiness System, the Senior Readiness Oversight Council, and the Quarterly Readiness Report to Congress. As of February 7, 1999, the number of units reporting readiness data, by Service, was 5,154 for the Army; 1,179 for the Navy; 2,560 for the Air Force; 379 for the Marine Corps; and 123 for the Coast Guard and other DoD and international organizations. Each Service uses a different system or tool to report readiness data.

Objectives. The overall audit objective was to evaluate whether DoD had adequately planned for and managed Y2K risks to avoid problems in reporting the readiness status of military units. The specific objective was to evaluate whether DoD had assessed the mission criticality and Y2K compliance of readiness reporting systems and developed testing and contingency plans for those systems.

Results. The Defense Information Systems Agency appropriately certified and reported the Global Status of Resources and Training System as Y2K compliant. However, the Defense Information Systems Agency inappropriately certified and reported the Status of Resources and Training System database as Y2K compliant. The Army met the Y2K certification criteria for the Global Command and Control System-Army, but the system was not certified in accordance with the Army certification criteria. The Navy did appropriately certify the Global Command and Control System-Maritime as Y2K compliant. The Air Force did not include the Air Force Status of Resources and Training System Data Entry Tool on the DoD Y2K reporting database. The Defense Information Systems Agency did not include the Global Online Marine Edit and Report System on the DoD Y2K reporting database. As a result, the Services' ability to report unit resources and training status in a Y2K environment was not assured (finding A).

Neither the Joint Staff nor the Office of the Under Secretary of Defense for Personnel and Readiness had conducted or planned to conduct end-to-end Y2K testing of the readiness reporting function. As a result, neither the Joint Chiefs of Staff nor the Office of the Under Secretary of Defense for Personnel and Readiness knew whether unit readiness information reported to the National Command Authorities and contained in the Joint Operation Planning and Execution System database would be complete and accurate after January 1, 2000. In addition, the Status of Resources and Training System users may not have access to the readiness status of combatant units after calendar year 1999 (finding B).

The Joint Staff did not initiate development of an operational contingency plan for the DoD readiness reporting function and the Army, the Air Force, and the Defense Information Systems Agency did not prepare adequate system contingency plans for systems used to report military readiness. Without adequate contingency plans, DoD could not minimize the adverse effects of Y2K disruptions such as loss of data or communications, and ensure that it had alternative ways to continue military planning operations (finding C).

Summary of Recommendations. We recommend that the Director, Defense Information Systems Agency recertify the database of the Status of Resources and Training System; prepare system contingency plans for the Status of Resources and Training System and the Global Status of Resources and Training System; designate the Global Online Marine Edit and Report System as a mission-essential system and prepare a system contingency plan for that system. We recommend that the Director, U.S. Army Information Systems for Command, Control, Communications, and Computers certify that all required tests have been performed on the Global Command and Control System-Army. We recommend that the Director, Air Force Air and Space Operations Directorate of Operations and Training designate the Air Force Status of Resources and Training System Data Entry Tool as a mission-essential system and prepare a system contingency plan for that system. We recommend that the Under Secretary of Defense for Personnel and Readiness and the Director, Joint Staff coordinate the planning and execution of the readiness reporting end-to-end tests with the Defense Information Systems Agency and the Services. We recommend that the Director, Joint Staff, in coordination with the Defense Information Systems Agency and the Services, prepare an operational contingency plan for the readiness reporting function. We recommend that the Project Manager, U.S. Army Strategic and Theater Command and Control Systems incorporate the requirements of the DoD Year 2000 Management Plan into the Global Command and Control System-Army system contingency plan.

Management Comments. The Defense Information Systems Agency stated that the draft recommendation to decertify the Status of Resources and Training System was moot. It stated that certification of Y2K compliance for the Status of Resources and Training System was complete as of April 30, 1999. The Defense Information Systems Agency concurred with the recommendation to designate the Global Online Marine Edit and Report System as a mission-essential system and perform all tests and certifications recommended by the DoD Year 2000 Management Plan. It stated that it had submitted Global Online Marine Report and Edit System test documentation to the Joint

Interoperability Test Command for their assessment, which is ongoing. The Defense Information Systems Agency partially concurred with the recommendations to prepare system contingency plans for the Global Online Marine Edit and Report System, the Global Status of Resources and Training System, and the Status of Resources and Training System database. It stated that the final system contingency plan incorporating those systems is awaiting signature. The Office of the Under Secretary of Defense for Personnel and Readiness and the Joint Staff concurred with the recommendations to develop an operational readiness assessment for the readiness reporting function and to coordinate the planning and execution of a readiness reporting functional area year 2000 end-to-end test. The test will include Service systems and tools feeding the master database, data processing at the master database, updating client databases, and messages back to reporting units. Those tests will be conducted in concert with the August 1999 Global Command and Control System end-to-end test. The Joint Staff concurred with the recommendations to develop an operational contingency plan and to develop system contingency plans in accordance with the DoD Year 2000 Management Plan for the Global Command and Control System-Army and the Air Force Status of Resources and Training System Data Entry Tool. The Joint Staff and the Defense Information Systems Agency expect to accomplish those tasks by July 1999. A discussion of management comments is in the Findings section of the report and the complete text of the comments is in the Management Comments section.

Audit Response. The Joint Staff and the Defense Information Systems Agency comments are responsive. We changed the recommendation to decertify the Status of Resources and Training System to recertify and we agree with the Defense Information Systems Agency observation that this action was completed subsequent to the draft audit report in April 1999. The Army and the Air Force did not provide comments in response to the draft report. Therefore, we request that the Army and the Air Force provide comments on the final report by July 15, 1999.

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Background

Status of Resources and Training System. The Status of Resources and Training System (SORTS) is the single, automated reporting system within DoD that provides the National Command Authorities¹ and the Chairman of the Joint Chiefs of Staff with authoritative assignment, equipment, identification, location, and personnel data for the registered units and organizations of DoD and certain foreign and international organizations involved in operations with DoD. SORTS provides readiness data used in the Chairman's Readiness System, the Senior Readiness Oversight Council, and the Quarterly Readiness Report to Congress.

SORTS is designed for military planning and for equipping, organizing, and training tasks. SORTS indicates, at a specific time, the status of unit equipment and personnel and the training required to undertake the mission for which a unit was organized or designed. SORTS allows users² to:

- prepare lists of units readily available;
- track location, activity, major equipment status, and personnel strength of assigned units to initially identify possible shortfalls, candidate units, and other items as needed;
- estimate the time for the earliest commitment of units based on their location relative to a situation;
- provide selected unit data to other joint automated systems, such as the Joint Operation Planning and Execution System and the Joint Visually Integrated Display System, that support situation and execution monitoring.

SORTS is the principal source of information used for military planning and for responding to crises or time-sensitive situations. Combatant commanders and Service Component commanders prepare operational plans³ in response to requirements established by the Chairman of the Joint Chiefs of Staff. Time-phased force and deployment data files identify the forces and supplies required to execute an operational plan. Those files contain deployment and movement data for in-place units, units to be deployed to support the operational plan, and movement and routing of the forces to be deployed.

¹The President and the Secretary of Defense or their duly deputized alternates or successors.

²SORTS users are those personnel who perform crisis response planning and deliberate or peacetime planning and management responsible for equipping, organizing, and training forces used by the combatant commands.

³For the purposes of this report, operational plans include operations plans, concept plans, and Service war planning documents.

Global Command and Control System and Readiness Reporting. The Global Command and Control System (GCCS) provides global command and control capability to the Joint Chiefs of Staff and warfighting commanders in chief. The Global Status of Resources and Training System (GSORTS) is an essential mission application within GCCS that provides users read-only access to the SORTS database. The data from each Service's readiness reporting system feeds into the SORTS database. That information is queried and displayed using GSORTS. As of February 7, 1999, the number of units reporting SORTS data, by Service, was 5,154 for the Army, 1,179 for the Navy, 2,560 for the Air Force, 379 for the Marine Corps, and 123 for the Coast Guard and other DoD and international organizations. The Defense Information Systems Agency is the system administrator for GCCS, GSORTS, and the SORTS database. Each Service uses a different system or tool⁴ to report readiness data, as indicated below.

- The Army system, the Global Command and Control System-Army (GCCS-A), is administered by the Project Manager, U.S. Army Strategic and Theater Command and Control Systems.
- The Navy system, the Global Command and Control System-Maritime (GCCS-Maritime), is administered by the Space and Naval Warfare Systems Command Program Management Office 157.
- The Air Force tool, the Air Force Status of Resources and Training System (AFSORTS) Data Entry Tool, is administered by the Air Force Air and Space Operations Directorate of Operations and Training.
- The Marine Corps tool, the Global Online Marine Edit and Report System (GOMERS), is administered by the Defense Information Systems Agency.

The automated systems that comprise the SORTS process are described in Appendix B. The readiness reporting thin thread⁵ is illustrated in Appendix C.

Objectives

The overall audit objective was to evaluate whether DoD had adequately planned for and managed year 2000 (Y2K) risks to avoid problems in reporting the readiness status of military units. The specific objective was to evaluate whether DoD had assessed the mission criticality and Y2K compliance of readiness reporting systems, and developed testing and contingency plans for those systems. See Appendix A for a discussion of the scope and methodology and a summary of prior coverage.

⁴As used in this report, the term tool refers to automated devices that ease the preparation of messages, but the developer of the tool does not consider it a system.

⁵An interconnected set of systems that demonstrates the performance of a specific function.

A. Year 2000 Certification of Systems Used to Report the Status of Resources and Training Data

Except for GCCS-Maritime and GSORTS, DoD systems and tools used to report SORTS data were not always properly certified and reported on the DoD Y2K reporting database. Specifically,

- the SORTS database was inappropriately certified and reported as Y2K compliant because the certification was based on limited testing on the GCCS;
- GCCS-A met DoD Y2K certification criteria, but was not certified in accordance with Army certification criteria;
- GCCS-Maritime met DoD Y2K certification criteria;
- the AFSORTS Data Entry Tool was not included in the list of systems to be certified and reported on the DoD Y2K reporting database because it was considered a tool and, therefore, not designated as mission essential by the Air Force; and
- GOMERS was not included in the list of systems to be certified and reported on the DoD Y2K reporting database because it was considered a tool and, therefore, not designated as mission essential by the Defense Information Systems Agency.

Without proper reporting and certification of the systems involved with SORTS, the Services' ability to report unit resources and training status in a Y2K environment was not assured.

Joint Staff GSORTS Guidance

Reporting Policy. The Chairman of the Joint Chiefs of Staff Instruction 3401.02, "Global Status of Resources and Training System," October 20, 1997 (GSORTS Instruction), establishes uniform criteria, policy, and procedures for DoD to use in reporting authoritative identification, location, and resource information to the National Command Authorities through the National Military Command Center. The GSORTS Instruction requires that designated units submit SORTS reports when significant changes in unit status occurs or every 30 days if there are no significant changes.

Reporting System. Joint Publication 1-03.3, "Joint Reporting Structure Status of Resources and Training System," August 10, 1993 (Joint Publication 1-03.3), establishes the reporting system required by GSORTS. Joint Publication 1-03.3

contains the general provisions and detailed instructions for collecting and preparing data on DoD units and selected foreign and international units. Units report an overall unit resource and training category level (C-level) as well as unit status in four measured resource areas: personnel (P-level), equipment and supplies on hand (S-level), equipment condition (R-level), and training (T-level). C-levels can range from C-1 to C-5 based on whether the unit has the required resources and training necessary to undertake the wartime mission(s) for which the unit was organized or designed. C-1 represents the most favorable level of resources and training. A unit's C-level will be identical to the lowest level recorded for any measured resource area unless subjectively lowered or raised by the unit commander.

Y2K Status of SORTS Reporting Systems

Readiness Reporting Systems. With the exception of GCCS-Maritime and GSORTS, DoD systems used to report SORTS data were not always properly certified and reported on the DoDY2K reporting database. Specifically, the SORTS database was inappropriately certified and reported as Y2K compliant. The Army did not certify GCCS-A as Y2K compliant in accordance with the Army Y2K Action Plan, revision 2, June 1998. The "DoD Year 2000 Management Plan, version 2.0" (DoD Management Plan), December 1998 states that a certified system is a system that the system administrator has signed off as Y2K compliant using the checklist provided in the DoD Management Plan. Appendix D lists the processes and tests that a system administrator should perform before certifying a system as Y2K compliant. The DoD Management Plan provides a target completion date of December 31, 1998, for certification of mission-critical systems.

SORTS Database and GSORTS Certifications and Reporting. The Defense Information Systems Agency appropriately certified and reported GSORTS as Y2K compliant in the DoDY2K reporting database. However, the Defense Information Systems Agency inappropriately certified and reported the SORTS database as Y2K compliant in the DoDY2K reporting database. The Defense Information Systems Agency designated SORTS as a certified mission-critical system but was unable to provide certification documentation. The DoD Management Plan clearly states that program managers will develop and maintain all necessary documentation that supports certification of Y2K compliance. The Defense Information Systems Agency based the certification on internal tests and testing performed by the Joint Interoperability Test Command⁶ on the GCCS. The Joint Interoperability Test Command tested GSORTS, a subsystem of GCCS, but did not conduct Y2K tests of the SORTS database during the GCCS preoperational evaluation conducted in October 1998 and the operational evaluation conducted in December 1998. The system administrator should certify a system as Y2K compliant only if the steps outlined in the DoD Management Plan are completed and documented. The

⁶A DoD organization that perform independent operational test and evaluation and assessments of the Defense Information System Agency and other DoD organizations.

GCCS operational evaluations did not meet the criteria for individual system certifications as outlined in the DoD Management Plan. For example, there was no evidence that the hardware and software components of the SORTS database was inventoried and assessed for Y2K compliance. Additionally, there was no documentation indicating that system tests were run to determine whether data could be obtained and queried before and after date transitions from the current date, December 31, 1999; January 1, 2000; February 29, 2000; October 2000; and January 2001, as required by the DoD Management Plan.

GCCS-A Certification. The GCCS-A met DoD Y2K certification criteria, but was not certified in accordance with Army certification criteria. The Army designated GCCS-A as a mission-critical system. The Army Project Manager for GCCS-A verified that a compliance certification checklist for the system was completed on December 18, 1998. However, the Army Y2K Action Plan requires that Headquarters, Department of the Army Functional Proponent for the system certify mission-critical systems. The Functional Proponent for GCCS-A (Director, U.S. Army Information Systems for Command, Control, Communications, and Computers) is senior to the Army Project Manager. As of March 11, 1999, the GCCS-A Functional Proponent had not certified GCCS-A as Y2K compliant.

GCCS-Maritime Certification. The GCCS-Maritime met DoD Y2K certification criteria. The Navy designated GCCS-Maritime as a mission-critical system. The Space and Naval Warfare Systems Command Program Management Office 157 certified GCCS-Maritime as Y2K compliant on October 29, 1998.

Mission-Essential Systems. The Air Force and Marine Corps tools used to report SORTS data were not certified and reported on the DoD Y2K reporting database. Specifically, the AFSORTS Data Entry Tool and GOMERS were not included in the list of systems to be certified and reported because they were considered tools and therefore not mission essential. The Air Force and Marine Corps use Government developed automated tools that can be considered information systems to aid in preparing readiness reports for transmittal through the Automatic Digital Network into GSORTS. The DoD Management Plan states that any system included in a functional thin thread must be reported in the DoD Y2K reporting database as a mission-essential system. Because the AFSORTS Data Entry Tool and GOMERS are used to transfer data into the SORTS database, they should be reported as mission essential.

AFSORTS. The Air Force Directorate of Operations and Training did not designate the AFSORTS Data Entry Tool as mission essential. About 2,300 of 2,600 Air Force combatant units use the AFSORTS Data Entry Tool to report unit readiness. The AFSORTS Data Entry Tool is the Air Force part of the functional process that reports unit readiness to GSORTS, via SORTS, and should be reported in the DoD Y2K reporting database as a mission-essential system. Air Force officials stated that they had not designated the system as mission essential because they did not consider the AFSORTS Data Entry Tool a complete system.

GOMERS. The Defense Information Systems Agency did not designate GOMERS as mission essential. Marine Corps combatant units are required to

use GOMERS to report readiness. The DoD Management Plan states that the DoD Component responsible for development or maintenance of a system will identify the system as mission critical or non-mission critical. GOMERS is the Marine Corps part of the functional process that reports unit readiness to GSORTS, a mission-critical system. Therefore, GOMERS should be reported in the DoD Y2K reporting database as a mission-essential system. The Defense Information Systems Agency did not designate GOMERS as a mission-essential system because it was not aware that GOMERS was part of a functional thin thread and would be included in functional end-to-end testing.

Effect of Certifications and Designations

The Services' capability to report unit status of resources and training in a Y2K environment was not assured. A thin thread of systems existed to report unit status of resources and training to the Chairman of the Joint Chiefs of Staff and the National Command Authorities. Each system, including data entry tools, within that thin thread needed to be tested and the systems needed to be renovated as necessary and certified Y2K compliant. As soon as the systems are correctly certified, functional tests need to occur to ensure that DoD is able to perform the function of accurately reporting unit readiness unaffected by Y2K problems.

Recommendations, Management Comments, and Audit Response

Revised Recommendation. As a result of management comments, we revised draft Recommendation A.1.a., deleting GSORTS. We also modified the applicable finding text.

A.1. We recommend that the Director, Defense Information Systems Agency:

a. Recertify the database of the Status of Resources and Training System until the system is fully tested for year 2000 compliance in accordance with the DoD Year 2000 Management Plan.

Management Comments. The Defense Information Systems Agency stated that the initial recommendation to decertify was moot, because SORTS had been recertified as Y2K compliant. The Defense Information Systems Agency stated that the SORTS database was appropriately certified in accordance with the DISA Y2K Problem Management Plan. The Defense Information Systems Agency also stated that although SORTS was missing documentation, including a signed year 2000 checklist, at the time of the audit, since the audit, it has sent the documentation to the Joint Interoperability Test Command. The Joint Interoperability Test Command recommended that the SORTS database be given

a certification level of 2a⁷. The problem was corrected as of April 30, 1999, with a complete checklist indicating that SORTS has a Y2K assurance level of 2a.

Audit Response. The Defense Information Systems Agency's comments are responsive. The recommendation has been reworded to entail recertification, rather than decertification. No further response is required.

b. Designate the Global Online Marine Edit and Report System as a mission-essential system and perform all tests and certifications recommended for mission-essential systems contained in the DoD Year 2000 Management Plan.

Management Comments. The Defense Information Systems Agency concurred, stating that at the time of our audit, the Y2K certification checklist and test documentation for GOMERS had been provided to the Defense Information Systems Agency Chief Information Officer for an independent audit in accordance with Defense Information Systems Agency procedures for non-mission-critical systems. As a result of concerns expressed by the Inspector General, DoD, the Defense Information Systems Agency submitted documentation to the Joint Interoperability Test Command for its assessment, which is ongoing.

A.2. We recommend that the Director, U.S. Army Information Systems for Command, Control, Communications, and Computers certify that all required year 2000 tests have been performed on the Global Command and Control System-Army and that the system is year 2000 compliant.

A.3. We recommend that the Director, Air Force Air and Space Operations Directorate of Operations and Training designate the Air Force Status of Resources and Training System Data Entry Tool as a mission-essential system and perform all tests and certifications recommended for mission-essential systems contained in the DoD Year 2000 Management Plan.

Management Comments Required. Neither the Army nor the Air Force commented on a draft of this report. We request that they provide comments on the final report.

⁷A level 2a Y2K compliant status indicates that an independent audit of system and existing testing was completed using a 4-year digit format.

B. End-to-End Testing of Readiness Reporting

Neither the Joint Chiefs of Staff nor the Office of the Under Secretary of Defense for Personnel and Readiness had conducted or planned to conduct end-to-end Y2K testing of the readiness reporting function. No end-to-end testing of readiness reporting was conducted or planned because no one took responsibility for identifying that the readiness reporting function required end-to-end testing. As a result, neither the Joint Staff nor the Office of the Under Secretary knew whether unit readiness information reported to the National Command Authorities and contained in the Joint Operation Planning and Execution System database would be complete and accurate after January 1, 2000. In addition, SORTS users may not have access to the readiness status of combatant units after calendar year 1999.

Readiness Reporting Function

Neither the Joint Staff nor the Office of the Under Secretary of Defense for Personnel and Readiness had conducted or planned to conduct end-to-end Y2K testing of the readiness reporting function. According to the DoD Management Plan, the first step in determining Y2K priorities is to place information systems in the broader context of the functions they support. After the critical missions and functions are identified, the information systems used to accomplish the critical missions and functions must be identified. During the 12 months before the year 2000, DoD is to shift its Y2K emphasis to verification and validation of functional and mission areas using thin thread end-to-end testing and contingency planning.

End-to-End Testing. Reporting combatant unit readiness is an end-to-end process that accomplishes a core military function. The DoD Management Plan defines "end-to-end process/functional flow" as a complete flow of data through a set of interconnected systems that performs a core business, process, or function. For readiness reporting, data flow begins with the initial input of data from combatant units through the applicable Services' primary SORTS reporting system and ends with the final receipt of information by the Joint Staff in the SORTS database, which is accessed by GSORTS. The Joint Staff, using GSORTS, reports the information to the National Command Authorities and to the Chairman of the Joint Chiefs of Staff. In addition, using GSORTS, combatant units send unit readiness data to the Joint Operation Planning and Execution System. The data are used to support military operation monitoring, planning, and execution.

Functional Tests. As of March 26, 1999, neither the Joint Staff nor the Under Secretary had formulated plans to test the readiness reporting function. The DoD Management Plan states that Y2K compliance will be inspected from three perspectives: individual system renovation and certification, function oriented, and mission oriented. The system developer or administrator was to perform

individual system renovation and testing for Y2K compliance certification by December 31, 1998. The principal staff assistants, the Unified Commands, the Services, and the agencies were responsible for function oriented tests. The Joint Staff, working with the Unified Commands, was responsible for mission-oriented operational evaluations. The Army and the Navy had planned additional system tests for their readiness reporting systems; however, the planned tests were only for the hardware and software they controlled. For example, the Space and Naval Warfare Systems Command Program Management Office had planned tests of GCCS-Maritime to verify that a message addressed to the Joint Staff was created by the system; however, the test did not verify that the Joint Staff received the message and could access the information contained in the message. The readiness reporting function had not been tested throughout the Services and no plans existed for end-to-end testing of the readiness reporting function. Testing the readiness reporting function would require end-to-end tests on the information flow from reporting units throughout the Services to the SORTS database with accessibility by GSORTS.

Functional Test Responsibilities

The identity of which DoD organization was responsible for identifying readiness functions that required end-to-end testing was unclear. The Under Secretary of Defense for Personnel and Readiness was the principal staff assistant responsible for readiness functions. However, the Under Secretary's office stated that the Joint Staff was the functional proponent for readiness reporting and, therefore, responsible for end-to-end testing of readiness reporting. The Under Secretary was responsible for planning activities related to readiness, training, and crisis planning and response. DoD Directive 5100.1, "Functions of the Department of Defense and Its Major Components," September 25, 1987, lists maintaining a readiness reporting system among the primary functions of the Chairman of the Joint Chiefs of Staff. Neither the Under Secretary nor the Joint Staff had identified readiness reporting as a critical function requiring functional tests or identified the underlying information systems involved in readiness reporting.

Under Secretary of Defense for Personnel and Readiness. The Deputy Secretary of Defense memorandum, August 24, 1998, tasked principal staff assistants of the Office of the Secretary of Defense to verify that all functions under their purview would continue unaffected by Y2K problems. The Deputy Secretary's memorandum assigned processes to each principal staff assistant and tasked the principal staff assistants to develop plans for Y2K related end-to-end testing of the identified processes by November 1, 1998. The Under Secretary is a principal staff assistant; however, the Deputy Secretary's memorandum did not specifically assign readiness to the Under Secretary or specify readiness reporting as a process that required end-to-end testing plans by November 1, 1998.

The Office of the Under Secretary had not planned readiness reporting functional tests. Personnel in the Office of the Under Secretary stated that the Joint Staff was the functional proponent of readiness reporting and therefore responsible for all functional Y2K testing of readiness reporting.

Joint Staff. The Joint Staff had not conducted or planned readiness reporting functional tests. The Joint Staff used the SORTS database and GSORTS and was responsible for reporting unit readiness status to the National Command Authorities and the Chairman of the Joint Chiefs of Staff. Joint Staff personnel stated that the Defense Information Systems Agency had conducted system Y2K tests for GSORTS. However, there was no documentation of the tests performed except for operational evaluation test plans and test reports for tests performed on GCCS.

The Joint Staff with the Unified Commands had planned for mission oriented operational evaluations. The Unified Commands identified a thin-line⁸ of systems that had been tested or were scheduled to be tested during the operational evaluations. The Unified Commands' thin-line of systems represented the systems required for the Unified Commands to accomplish their assigned missions. Each system included in the thin-line of systems was to be included in the operational evaluations of at least two Unified Commands. The Defense Information Systems Agency planned to test GCCS during operational evaluations. Other identified systems that the Joint Staff and the Services used in readiness reporting and that were scheduled to be tested in operational evaluations included:

- GSORTS - to be tested by the Atlantic Command and the European Command;
- GCCS-A - to be tested by the European Command and U.S. Forces Korea; and
- GCCS-Maritime - to be tested by the Central Command, European Command, and Pacific Command.

AFSORTS Data Entry Tool and GOMERS were not scheduled for testing.

Responsibility for Functional Test of Readiness Reporting. We could not determine whether the Under Secretary was solely responsible for functional tests of readiness reporting or was jointly responsible with the Joint Staff. For DoD mission areas, the Joint Staff and the Unified Commands were responsible for identifying and prioritizing DoD critical missions. The Unified Commands were tasked to conduct operational evaluations to identify specific Y2K problems, to establish workarounds where feasible, and to suggest alternative approaches to ensure uninterrupted critical-path operations. On the other hand, principal staff assistants were responsible for Y2K oversight of critical

⁸Refers to the systems identified by the unified commands as necessary to accomplish their assigned missions; a thin-line of systems is a broader category than a thin thread.

supporting functions. A lead office needs to conduct a Y2K operational readiness assessment for the readiness reporting function so that subsequent Y2K end-to-end tests can be planned and conducted.

Conducting Y2K Readiness Reporting Tests

The Chairman of the Joint Chiefs of Staff had no assurance that unit readiness information reported to the National Command Authorities and contained in the Joint Operation Planning and Execution System database would be complete and accurate after January 1, 2000. The SORTS database and GSORTS provided readiness data used in the Chairman's Readiness System, the Senior Readiness Oversight Council, the Quarterly Readiness Report to Congress, and the Joint Operation Planning and Execution System. Maintaining a readiness reporting system was a primary function of the Joint Chiefs of Staff. A readiness reporting thin thread of systems existed from reporting units to the SORTS database. Therefore, the Under Secretary and the Joint Staff need to ensure the readiness reporting function operates correctly before and after January 1, 2000, by planning and conducting functional area Y2K tests of the readiness reporting thin thread.

Recommendations and Management Comments

Renumbered Recommendations. Draft Recommendations B.a. and B.b. have been renumbered B.1. and B.2., respectively.

B. We recommend that the Under Secretary of Defense for Personnel and Readiness and the Director, Joint Staff:

1. Develop an operational readiness assessment for the readiness reporting function.

2. Coordinate the planning and execution of readiness reporting functional area year 2000 end-to-end tests with the Defense Information Systems Agency and the Services.

Under Secretary of Defense for Personnel and Readiness Comments. The Office of the Under Secretary concurred. It stated that it will coordinate with the Joint Staff, the Defense Information Systems Agency, and the Services to ensure that the SORTS end-to-end test is developed and executed and that the results are reviewed for functional accuracy.

Joint Staff Comments. The Joint Staff concurred. It stated that in August 1999, the Joint Staff will conduct an end-to-end test in conjunction with the Defense Information Systems Agency's Readiness Application Branch and the Joint Interoperability Test Command. That test will include Service systems and

tools feeding the master database, data processing at the master database, updating of the client databases, and acknowledgement messages of message received and processed transmitted back to the initial reporting units.

C. Contingency Planning

The Joint Chiefs of Staff did not initiate development of an operational contingency plan for the DoD readiness reporting function; and the Army, the Air Force, and the Defense Information Systems Agency did not prepare adequate system contingency plans for systems used to report military readiness. The Navy had adequate system contingency plans for GCCS-Maritime. The lack of an operational contingency plan and the inadequate system contingency plans occurred because DoD system managers did not follow the DoD Management Plan. Without adequate contingency plans, DoD could not minimize the adverse effects of Y2K disruptions, such as loss of data or communications, and ensure that it had alternative ways to continue military planning operations.

DoD Management Plan Criteria

The DoD Management Plan contains requirements, guidelines, and recommendations for DoD Components related to contingency planning for potential Y2K problems. The DoD Management Plan recognizes that despite efforts to ensure that systems will function properly in the year 2000, systems or infrastructures that support systems may fail and the failures could adversely affect other systems. Therefore, the DoD Management Plan requires that DoD Components develop contingency plans for mission-critical systems. The DoD Management Plan also strongly recommends that DoD Components develop contingency plans for systems on which mission-critical systems, such as SORTS, rely for data. That action is intended to minimize the adverse effects of disruptions, and ensure that there are alternative ways to maintain continuity of operational capability.

Contingency planning is a mechanism to develop workarounds, find alternative ways to satisfy requirements, put in place manual processes that bridge the capability gap threatened by an outage, and prepare to continue business in spite of potentially dramatic and sustained outages of key systems. The DoD Management Plan identifies two types of contingency plans - operational and system.

Responsibility for Operational Contingency Plans. Operational commanders and system users, including the Joint Chiefs of Staff, are responsible for developing operational contingency plans. Operational contingency plans are the primary management tools used for unanticipated disruptions, such as loss of power, environmental control systems, and communications services. Operational contingency plans should identify procedures for switching to alternative systems or locations, and alternate procedures for performing a mission or function. Operational contingency plans address the activities that operational commanders and system users should perform before, during, and after a Y2K related failure to ensure uninterrupted mission capability. The DoD Management Plan required DoD Components to develop operational contingency plans by March 31, 1999.

Responsibility for System Contingency Plans. System administrators and work group managers are responsible for preparing system contingency plans. System contingency plans address the activities that are to be performed by system administrators and work group managers to preserve and protect the system and data before, during, and after a Y2K related problem. System related Y2K problems include system failures, corruption of data from internal or external sources, power failures, and loss of communications. System contingency plans should identify procedures for restoring data from backups, switching to back-up systems or sites, or operating in degraded modes. The DoD Management Plan required DoD Components to develop system contingency plans by December 30, 1998.

Operational Contingency Plans

The Joint Staff did not initiate development of an operational contingency plan for the DoD readiness reporting function. A contingency plan was not developed because the Joint Staff did not view contingency planning for readiness reporting as a high priority. Consequently, the Joint Staff did not coordinate with and instruct the Services and the Defense Information Systems Agency on preparing operational contingency plans for readiness reporting. After we began our audit, the Joint Staff requested that each of the Services and the Defense Information Systems Agency draft operational contingency plans for their systems by March 30, 1999, for presentation to the Joint Staff readiness systems working group. As of June 17, 1999, the Defense Information Systems Agency had submitted a draft operational contingency plan and the Army and the Air Force had submitted working draft operational contingency plans to the Joint Staff for review. The Marine Corps operational contingency plan was in process. The Navy had an adequate operational contingency plan prior to our audit. When the Joint Staff receives the draft operational contingency plans, the Joint Staff will use the plans to develop the readiness reporting operational contingency plan.

System Contingency Plans

The Army, the Air Force, and the Defense Information Systems Agency did not prepare system contingency plans according to requirements in the DoD Management Plan. The Navy had an adequate system contingency plan for GCCS-Maritime.

Army Readiness Reporting System. The system contingency plan for the GCCS-A did not meet the standards set forth in the DoD Management Plan. The contingency plan, developed by the Project Manager, U.S. Army Strategic and Theater Command and Control Systems, contained a purpose, provided background information on GCCS-A, and described the mission of GCCS-A and primary roles and responsibilities of the GCCS-A Project Manager. The contingency plan, however, did not detail the types of possible system

contingencies and plans for restoring data and switching to backup systems or sites. In addition, it did not describe how the plans would be maintained and updated. Further, the contingency plan did not contain a contact list for key personnel and indicate whether the plan had been approved. Adding those items in the contingency plans will help to minimize the risk of Y2K system failure.

Navy Readiness Reporting System. The Navy operational and system contingency plans for GCCS-Maritime generally met the requirements of the DoD Management Plan. Those contingency plans, prepared by the Space and Naval Warfare Systems Command, identified system risks and risk impacts, alternative strategies, actions to be taken upon system degradation or failure, and assigned responsibility for plan maintenance and updates. Items in the GCCS-Maritime contingency plans will mitigate the risk that Navy SORTS data will not be available to users.

Air Force and Marine Corps Readiness Reporting Systems. The Air Force did not prepare system contingency plans because it did not consider the AFSORTS Data Entry Tool as mission critical. Also, the Air Force did not consider the AFSORTS Data Entry Tool to be an automated system. However, the DoD Management Plan strongly recommends that DoD Components develop contingency plans for systems on which mission-critical systems rely for data. As stated in finding A, the AFSORTS Data Entry Tool should be designated as mission essential because mission-critical systems, such as the SORTS database, rely upon the information received from the AFSORTS Data Entry Tool. The Defense Information Systems Agency, which developed and managed GOMERS for the Marine Corps, did not prepare system contingency plans because it did not consider GOMERS as mission critical. As stated in finding A, GOMERS should be designated as mission essential because mission-critical systems, such as the SORTS database, rely upon information received from GOMERS. Units from the Air Force and Marine Corps used the data entry tools to prepare communication messages that were transmitted from base level communication offices to the SORTS database. System contingency plans for the AFSORTS Data Entry Tool and GOMERS would help ensure that the SORTS database receives readiness data from Air Force and Marine Corps units after the year 1999.

Defense Information Systems Agency Readiness Reporting Systems. The Defense Information Systems Agency did not prepare system contingency plans for SORTS and GSORTS because the Defense Information Systems Agency made an internal decision to have system contingency plans completed by March 30, 1999, instead of December 30, 1998, as required. The Defense Information Systems Agency signed a contingency plan on June 1, 1999, and submitted it to the Joint Staff.

Effect on Readiness Reporting

Without adequate contingency planning for Y2K issues affecting readiness systems, the Services may not be able to report readiness status and SORTS users may not have access to the readiness status of the Armed Forces after

calendar year 1999. SORTS is the single reporting system in DoD that provides the National Command Authorities and the Chairman of the Joint Chiefs of Staff with authoritative assignment, equipment, identification, location, and personnel data for the registered units, DoD organizations, and certain foreign and international organizations involved in operations with DoD. In addition to problems with the software applications, Y2K problems with power supplies and telecommunications could make reporting methods inoperable for extended periods. Without adequate operational and system contingency plans, the National Command Authorities and the Chairman of the Joint Chiefs of Staff may not be able to collect, analyze, measure, and fix joint readiness of the 9,000 military units that report their readiness status each month.

Recommendations, Management Comments, and Audit Response

C.1. We recommend that the Director, Joint Staff, in coordination with the Services and the Defense Information Systems Agency, expedite the preparation of an operational contingency plan for the DoD readiness reporting function.

C.2. We recommend that the Project Manager, U.S. Army Strategic and Theater Command and Control Systems revise the system contingency plan for the Global Command and Control System-Army to incorporate the requirements of the DoD Year 2000 Management Plan.

C.3. We recommend that the Director, Air Force Air and Space Operations Directorate of Operations and Training prepare a system contingency plan for the Air Force Status of Resources and Training System Data Entry Tool.

Joint Staff Comments. The Joint Staff concurred with all recommendations, stating that it, along with the Defense Information Systems Agency, began development of the system contingency plan in January. Concurrently, the Army, the Air Force, and the Marine Corps staffs are also completing operational contingency plans to ensure successful data input and data access in the event of system disruptions. The Joint Staff and the Defense Information Systems Agency expect to accomplish those tasks by July 1999.

C.4. We recommend that the Director, Defense Information Systems Agency:

a. Prepare a system contingency plan for the Global Online Marine Edit and Report System.

b. Prepare a system contingency plan for the Status of Resources and Training System database and Global Status of Resources and Training System.

Defense Information Systems Agency Comments. The Defense Information Systems Agency concurred with Recommendation C.4.a. and partially concurred with Recommendation C.4.b. It stated that it initiated development of a system contingency plan for SORTS to include its database and GOMERS in January 1999. The draft plan was completed March 17, 1999, and the final plan is awaiting signature.

Audit Response. Comments from the Joint Staff and the Defense Information Systems Agency are responsive. Additionally, we accept the Joint Staff comments in lieu of comments from the Army and the Air Force. Therefore, no further action is required.

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 listing of audit projects addressing this issue, see the Y2K web pages on IGnet at <http://www.ignet.gov/>.

Scope

This report was based on audit work performed at DoD organizations with responsibilities for Y2K compliance of systems that report SORTS data. The organizations included the Joint Chiefs of Staff, Defense Information Systems Agency, and responsible Service Components. Our audit did not include a review of the field-level systems that transmit data to either GSORTS or Service SORTS systems.

We evaluated the progress that the Joint Chiefs of Staff, the Defense Information Systems Agency, and responsible Service Components made in resolving Y2K computing issues of systems that report SORTS. We compared that progress with the DoD Management Plan, version 2.0, updated January 25, 1999, issued by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). We met with responsible Y2K points of contact and reviewed documentation pertaining to contingency plans, contracting procedures for information technology, interface agreements with external systems, system architectures, and testing and certification procedures. The dates of those documents varied from December 1995 through January 1999.

DoD-Wide Corporate Level Goals. In response to the Government Performance Results Act, DoD 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 qualitative superiority of the United States 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 Defense 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)

High Risk Area. In its identification of risk areas, the General Accounting Office has specifically designated risks in resolution of the Y2K problems as high. This report provides coverage of that problem.

Methodology

Audit Type, Dates, and Standards. We performed this program audit from January through June 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 on 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 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 at <http://www.dodig.osd.mil/>.

Inspector General

Inspector General, DoD, Report No. 99-122, "Year 2000 Readiness Reporting," April 2, 1999.

Appendix B. Description of Readiness Reporting Systems

Each of the Services employs a distinct system or tool to forward readiness data to SORTS and GSORTS. The Army uses GCCS-A in conjunction with ASORTS and Personal Computer ASORTS, a computer application, to report unit readiness. The Navy uses GCCS-Maritime to forward its readiness data. The Air Force and the Marine Corps use stand-alone applications, the AFSORTS Data Entry Tool and GOMERS, respectively, to report their SORTS data. A more detailed description of each system follows.

Joint Staff Reporting Systems

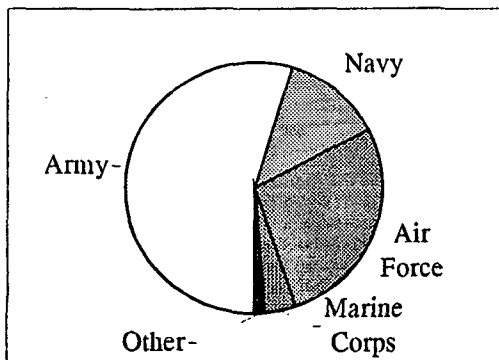


Figure B-1. SORTS/GSORTS

Status of Resources and Training System (SORTS) Database/Global Status of Resources and Training System (GSORTS). The Defense Information Systems Agency is the system administrator for the SORTS database. SORTS is a key information management system within DoD and the only authoritative source of unit readiness information for the National Military Command System. Within SORTS, the National Command Authorities and the Chairman of the Joint Chiefs of Staff have access to

authoritative information on the identification, location, readiness, and resources of all Armed Forces units worldwide, as well as some Combined Forces* units assigned to Unified Commands. As of April 1, 1999, SORTS was listed as a certified mission-critical system in the DoD Y2K reporting database.

The Defense Information Systems Agency is the system administrator for GSORTS. GSORTS is a key mission application within GCCS that provides users read-only access to the SORTS database. GSORTS provides the GCCS user with powerful graphical user interfaces that support SORTS columnar reports, data manipulation, database query (stored and ad hoc), and overlay of SORTS data (with geographic locations) on map displays. GSORTS was designed to provide an automated data processing and related general support tool to the National Military Command System. GSORTS is the Central Registry of all operational units in the Armed Forces. It is the single, automated reporting system within DoD that provides the National Command Authorities and the Chairman of the Joint Chiefs of Staff with accurate and

* Combined Forces - A military force composed of elements of two or more allied nations.

timely unit identification, location, assignment, personnel, and equipment data for registered units and organizations with the Armed Forces, Defense agencies, and certain foreign and international organizations involved in operations with the Armed Forces. GSORTS also provides an assessment of how resources and training levels will affect a unit's ability to undertake its wartime mission. As of April 1, 1999, GSORTS was listed as a certified mission-critical system in the DoD Y2K reporting database.

Army Reporting System

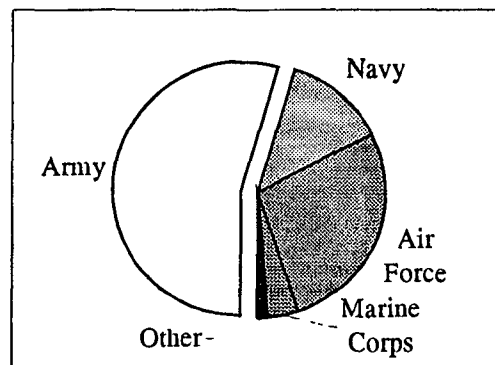


Figure B-2. GCCS-A

The Global Command and Control System-Army. The Project Management Office, Strategic and Theater Command and Control Systems is the system administrator for the GCCS-A. GCCS-A is a component of the Army Battle Command System and the Army Component of the Joint Global Command and Control System. GCCS-A supports the planning and execution of military operations requiring the demobilization, deployment, employment, and mobilization of forces. As of April 1, 1999, GCCS-A was listed as a certified mission-critical system in the DoD Y2K reporting database.

Army Status of Readiness and Training System. ASORTS is a Component of GCCS-A that is used to report readiness data. Over 5,000 Army, National Guard, and Reserve units report their status to Headquarters, Department of the Army through their major Army command. Headquarters, Department of the Army consolidates the data for monthly briefings to the Secretary of Defense, the Army Chief of Staff, and the Joint Chiefs of Staff. After a unit's SORTS report has been generated, it is forwarded to the next higher command. This is done either by electronic transmission through the GCCS-A network or copied to a floppy diskette and delivered through the U.S. Postal Service. ASORTS has the ability to produce reports that track units that failed to report and track errors on reports submitted.

Personal Computer Army Status of Readiness and Training System. Personal Computer ASORTS is a DOS-based computer application designed to report unit readiness. Personal Computer ASORTS is the initial data entry point of virtually all unit status reports. The system generates United States Message Text Format SORTS messages.

Navy Reporting System

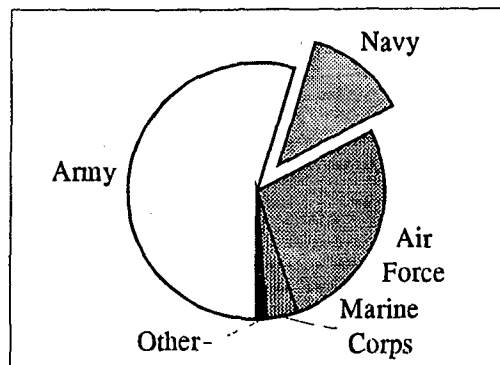


Figure B-3. GCCS-Maritime

Mobile Ashore Support Terminal, and the Mobile Integrated Command Facility. The GCCS-Maritime Afloat variant is installed on more than 250 ships. It provides the afloat tactical commander with a timely, authoritative, and fused tactical picture with integrated intelligence services and databases. The GCCS-Maritime Ashore variant is tailored for support of major shore based commands. GCCS-Maritime Ashore provides the shore-based operational commander with a timely, authoritative, and fused tactical picture with integrated intelligence services and databases in the same manner as GCCS-Maritime Afloat. However, Ashore also includes applications for monitoring the status of forces assigned and carrying out principal staff functions, such as command briefing support and force scheduling. Therefore, the GCCS-Maritime Ashore component handles the incoming SORTS messages. As of April 1, 1999, GCCS-Maritime was listed as a certified mission-critical system in the DoD Y2K reporting database.

The Global Command and Control System-Maritime. The Space and Naval Warfare Systems Command is the system administrator for GCCS-Maritime. GCCS-Maritime provides a complete command and control solution to the U.S. Navy, with interfaces to a variety of communications and computer systems. The GCCS-Maritime architecture is composed of three main variants: GCCS-Maritime Afloat, Ashore, and Tactical/Mobile, which includes the Mobile Operations Control Center,

Air Force Reporting System

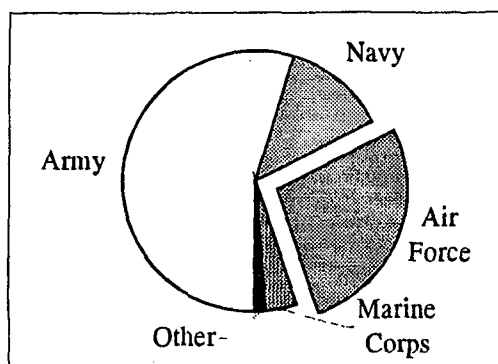


Figure B-4. AFSORTS Data Entry Tool

Air Force Status of Resources and Training System Data Entry Tool. The U.S. Air Force Directorate of Operations and Training is the system administrator for the AFSORTS Data Entry Tool. AFSORTS Data Entry Tool is a stand-alone application developed by the Air Force to support its readiness reporting requirements to SORTS. Using Windows-based screens in AFSORTS Data Entry Tool, individual Air Force units prepare their SORTS reports on personal computers. AFSORTS Data Entry Tool provides

significant edit checks and on-line help to ensure that Joint Staff and Service reporting criteria are met. When complete, the AFSORTS Data Entry Tool will automatically format the report into the requisite United States Message Text Format and prepare the text file for submission to the SORTS master processor via either Automatic Digital Network or Secret Internet Protocol Router Network/File Transfer Protocol. As of April 1, 1999, AFSORTS Data Entry Tool was not listed in the DoD Y2K reporting database.

Marine Corps Reporting System

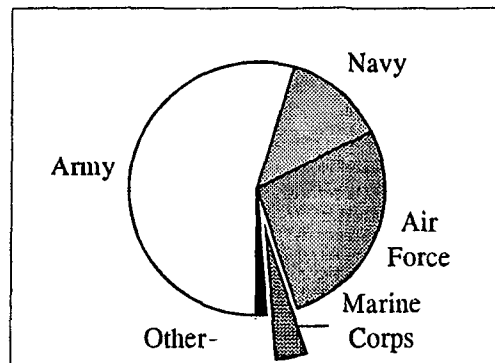


Figure B-5. GOMERS

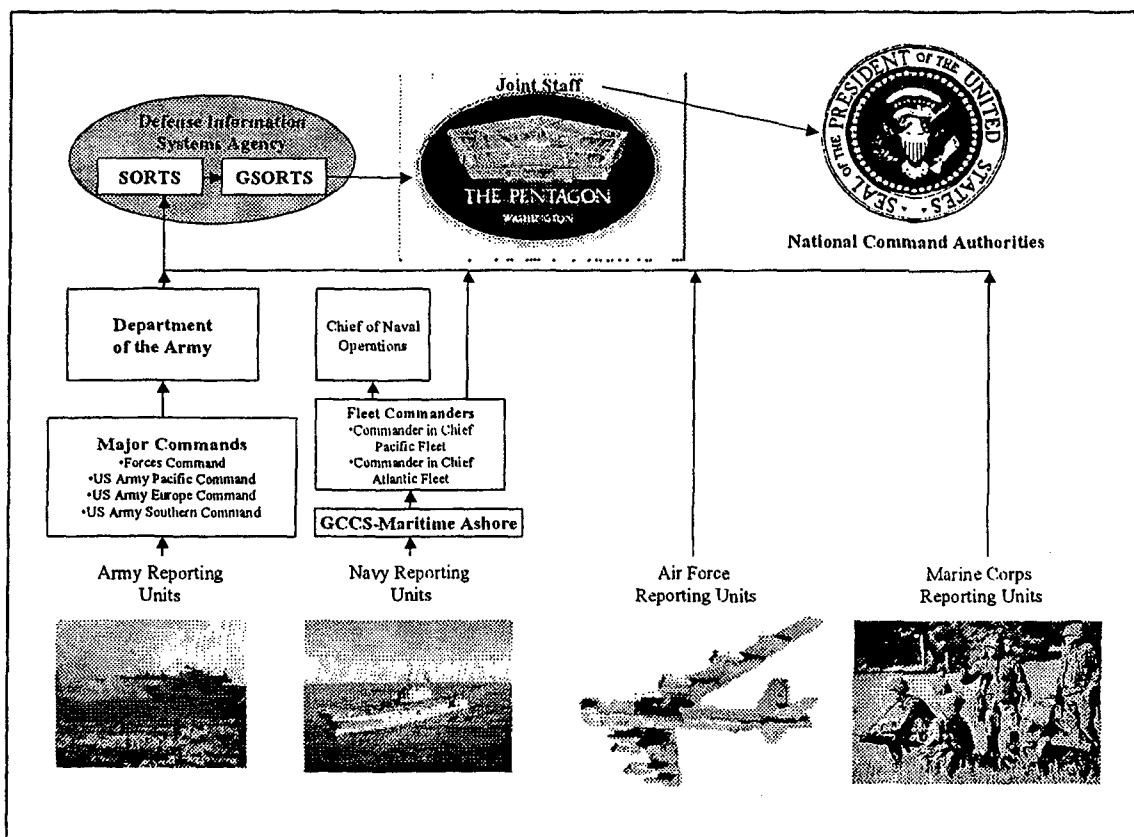
Global Online Marine Edit and Report System. The Defense Information Systems Agency is the system administrator for GOMERS. GOMERS is a stand-alone application developed for the Marine Corps to support its readiness reporting requirements to SORTS. Using the Windows-based screens in GOMERS, individual Marine units prepare their SORTS reports on personal computers. GOMERS provides significant edit checks and on-line help to ensure that both the Joint Chiefs of Staff and the

Service reporting criteria are met. When complete, GOMERS will automatically format the report into the required United States Message Text Format and prepare the text file for submission to the SORTS master processor via Automatic Digital Network. As of April 1, 1999, GOMERS was not listed in the DoD Y2K reporting database.

Appendix C. Readiness Reporting Thin Thread

The readiness reporting thin thread is an interconnected set of systems that function as a path to perform SORTS reporting. The transmission of readiness information begins with an input of data from combatant units and flows through the SORTS reporting systems of the respective Services to arrive in GSORTS. Each Service reports SORTS differently.

The following figure illustrates the readiness reporting thin thread.



Readiness Reporting Thin Thread

Department of the Army. Army units report SORTS to the major commands via File Transfer Protocol through Personal Computer ASORTS. At the major command level, SORTS data are aggregated and forwarded to the Army through the GCCS-A database. The Army then forwards its readiness data to the SORTS and GSORTS databases located in the Pentagon.

Department of the Navy. Navy reporting units send SORTS reports via the Automatic Digital Network to GCCS-Maritime Ashore sites. From GCCS-Maritime Ashore sites, readiness data are forwarded to two central GCCS-Maritime databases that reside with the Commander in Chief, Atlantic

Fleet, and the Commander in Chief, Pacific Fleet. At the two Fleet Commands, SORTS information is aggregated and forwarded electronically to the Chief of Naval Operations and, via the Automatic Digital Network, to the SORTS and GSORTS databases located in the Pentagon.

Department of the Air Force and the Marine Corps. The Air Force and the Marine Corps use Government developed application programs to transmit SORTS data directly to the Defense Information Systems Agency. The Air Force sends readiness reports through AFSORTS Data Entry Tool via the Automatic Digital Network. The Marine Corps forwards reports via the Automatic Digital Network through GOMERS. AFSORTS Data Entry Tool and GOMERS are simply tools the two Services use to draft the SORTS reports sent through the Automatic Digital Network. Unlike the Army and the Navy, the Air Force and the Marine Corps SORTS reports do not go through any intermediate processing. Rather, they are channeled directly to the SORTS database and GSORTS.

The Joint Chiefs of Staff. The Defense Information Systems Agency receives SORTS data from the reporting systems of the respective Services and amasses the information in the SORTS and GSORTS databases located in the Pentagon. The Joint Chiefs of Staff extract readiness data from GSORTS and report that information to the National Command Authorities and the Chairman of the Joint Chiefs of Staff. GSORTS also provides data to other systems, including the Joint Operation Planning and Execution System.

Automatic Digital Network. The Automatic Digital Network is a worldwide network that provides automatic message and data routing and switching service for DoD and certain non-DoD subscribers. With the exception of the Army, which uses File Transfer Protocol, the Automatic Digital Network is the carrier by which the majority of SORTS messages are sent. The Navy and the Air Force send SORTS messages via the Automatic Digital Network. The network also carries nearly 100 percent of GOMERS traffic. As of April 1, 1999, the Automatic Digital Network was listed in the DoD Y2K reporting database as a certified mission-critical system. Because of the heavy volume of SORTS messages networked via the Automatic Digital Network, it is integral to the readiness reporting process.

Appendix D. Requirements for Management Process of Year 2000 System Certification

The Year 2000 Compliance Checklist for a certified system in the DoD Management Plan must be signed by appropriate system officials. As a minimum, specific procedures must have been completed before the certification checklist can be signed. A partial list of the required procedures follows.

- An inventory must be completed of all system components of the applicable system including conversational monitors, data base management systems, data interfaces and exchanges, embedded chips, firmware, hardware, load libraries, operating systems, software languages and compilers, and system utilities.
- An assessment of each system component must be conducted to determine whether the component is Y2K compliant. The assessment must be documented.
- Testing of the system's ability to successfully process date transitions must be conducted for the following dates:
 - a. September 8 through 9, 1999
 - b. September 30 through October 1, 1999
 - c. December 31, 1999 through January 1, 2000
 - d. February 28 through February 29, 2000
 - e. February 29 through March 1, 2000
 - f. September 30 through October 1, 2000
 - g. December 31, 2000 through January 1, 2001
- An agreement between the system administrator and responsible organizations exists dealing with Y2K issues for each system internal and external interface.
- System developers and maintainers along with functional proponents have certified and documented that the system is Y2K compliant.

Appendix E. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Under Secretary of Defense for Personnel and Readiness
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
Deputy Chief Information Officer and Deputy Assistant Secretary of Defense (Chief Information Officer Policy and Implementation)
Principal Director for Year 2000
Director, Defense Logistics Studies Information Exchange

Joint Staff

Director, Joint Staff

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Chief Information Officer, Army
Inspector General, Department of the Army
Auditor General, Department of the Army

Department of the Navy

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

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Chief Information Officer, Air Force
Inspector General, Department of Air Force
Auditor General, Department of the Air Force

Unified Commands

Commander in Chief, U.S. European Command
Commander in Chief, U.S. Pacific Command
Commander in Chief, U.S. Atlantic Command
Commander in Chief, U.S. Southern Command

Unified Commands (cont'd)

Commander in Chief, U.S. Central Command
Commander in Chief, U.S. Space Command
Commander in Chief, U.S. Special Operations Command
Commander in Chief, U.S. Transportation Command
Commander in Chief, U.S. Strategic Command

Other Defense Organizations

Director, Defense Information Systems Agency
Inspector General, Defense Information Systems Agency
Chief Information 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

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

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 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, Veteran Affairs, and International
Relations, Committee on Government Reform
House Subcommittee on Technology, Committee on Science

Office of the Under Secretary of Defense for Personnel and Readiness Comments



PERSONNEL AND
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000



17 MAY 1999

Mr. Shelton R. Young
Director, Readiness and Logistics Support Directorate
Inspector General, Department of Defense
400 Army Navy Drive (Room 801)
Arlington, VA 22202-2884

Dear Mr. Young:

This is the Under Secretary of Defense (Personnel and Readiness) response to the DoD Inspector General audit report on "The Status of Resources and Training System Year 2000 Issues" (Project No. 9LG-9019).

We have reviewed the draft report and concur with recommendation B. We will coordinate with the Joint Staff, DISA, and the Services to ensure that the SORTS end-to-end test is developed and executed and that the results are reviewed for functional accuracy.

We appreciate the opportunity to comment on the draft report.

Sincerely,

Thomas K. Longstreth
Deputy Under Secretary of Defense
(Readiness)



Joint Staff Comments



THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-420-99
14 May 1999

MEMORANDUM FOR THE INSPECTOR GENERAL, DEPARTMENT OF
DEFENSE

Subject: Audit Report on the Status of Resources and Training System Year
2000 Issues (Project No. 9LG-9019)

1. We have reviewed the draft audit report¹ and concur. Our comments are enclosed.
2. The Joint Staff point of contact is Lieutenant Colonel D. M. Gaskell, J-3, 693-5475.


V.E. CLARK
Vice Admiral, U.S. Navy
Director, Joint Staff

Enclosure

Reference:

- 1 DODIG memorandum, 16 April 1999, "Audit Report on Status of Resources and Training System Year 2000 Issues (Project No. 9LG-9019)"

ENCLOSURE

JOINT STAFF COMMENTS ON
DRAFT REPORT ON STATUS OF RESOURCES AND TRAINING SYSTEM
YEAR 2000 ISSUES

The Global Status of Resources and Training System (GSORTS) is the single automated reporting system that functions as the central registry of all operational units in the US Armed Forces. In addition to serving as a registry, GSORTS also contains unit readiness metrics on selected operational units.¹ GSORTS is not the single automated reporting system for unit readiness. The Services use many Service systems to track status and readiness as they perform their duties to train, maintain and equip units for the Unified Commanders in Chief.

The readiness assessment system is far more than just "GSORTS." GSORTS does not provide the "basic readiness data used in the Chairman's Readiness System, the Senior Readiness Oversight Council and the Quarterly Readiness Report to Congress." In fact, these forums focus on the operational and strategic levels of readiness and are based on many sources of information.

Over the last 3 years, DISA and the Services have worked hard to identify and correct each Y2K problem in GSORTS and the Service feeder systems. In fact, DISA and the Services have made modifications to the databases, input tools, and output tools to ensure the continued viability of the systems. DISA and the Services have also conducted tests to validate these changes. Specifically, DISA completed internal Y2K testing of the master database in August 1997. During the December 1998 GCCS Y2K evaluation, GSORTS database updates were tested in a Y2K environment. As a part of this evaluation, 50 records were successfully updated. Transactions were applied across critical time boundaries to simulate late arriving updates. Based on the results of this process, DISA's Joint Interoperability Test Center (JITC) has certified GSORTS as Level 2a.

In the coming months, the Joint Staff, DISA and the Services will continue this work to ensure GSORTS and the separate Service feeder systems support the CINCs and Services in 2000 and beyond.

Page 7, DODIG Recommendation A

"A.1. We recommend that the Director, Defense Information System Agency:

¹ CJCS Guide to the Chairman's Readiness System, 31 July 1997

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Modified
Pages 1 and 11

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"a. Decertify the database of the Status of Resources and Training System and the Global Status of Resources and Training System until both systems are fully tested for year 2000 compliance in accordance with the DoD Year 2000 Management Plan.

"b. Designate the Global Marine Edit and Report System as a mission essential system and perform all tests and certifications recommended for mission-essential system contained in the DoD Year 2000 Management Plan."

Joint Staff Comment: DISA and the Army will address this issue directly with the DODIG.

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Page 12, DODIG Recommendation B

"B. We recommend that the Under Secretary of Defense for Personnel and Readiness and the Director Joint Staff:

Renumbered 1.

"a. Develop an operational readiness assessment for the readiness reporting function.

Renumbered 2.

"b. Coordinate the planning and execution of readiness reporting area year 2000 end-to-end tests with the Defense Information Systems Agency and the Services."

Joint Staff Comment: Concur. In compliance with the DOD Y2K Management Plan and to ensure system functionality, the Joint Staff and DISA's Readiness Applications Branch, in conjunction with JITC, will conduct an end-to-end test this summer. This test includes Service systems and tools feeding the master database, data processing at the master database, updating of the client databases and Received And Message Processed (RAMP) messages back to the reporting units. We will conduct these tests in concert with the August 1999 GCCS end-to-end test.

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Page 16, DODIG Recommendation C

"C.1. We recommend that the Director, Joint Staff in coordination with the Services and the Defense Information Systems Agency, expedite the preparation of an operational contingency plan for the DoD readiness reporting function.

"C.2. We recommend that the Project Manager, U.S. Army Strategic and Theater Command and Control Systems revise the system

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contingency plan for the Global Command and Control System-Army to incorporate the requirements of the DoD Year 2000 Management Plan.

"C.3. We recommend that the Director, Air Force Air and Space Operations Directorate of Operations and Training prepare a system contingency plan for the Air Force Status of Resources and Training System Data Entry Tool.

"C.4. We recommend that the Director, Defense Information Systems Agency:

"a. Prepare a system contingency plan for the Global Marine Edit and Report System.

"b. Prepare a system contingency plan for the Status of Resources and Training System and the Global Status of Resources and Training System."

Joint Staff Comment: Concur. In accordance with the DOD Y2K Management Plan, DISA, and the Joint Staff began development of the system contingency plan in January. Concurrently, the Army, Marine Corps, and Air Force staffs are also completing operational contingency plans to ensure successful data input and data access in the event of system disruptions (Navy has previously completed). The Joint Staff and DISA expect to accomplish these tasks by July 1999.

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Defense Information Systems Agency Comments

Inspector General (IG)

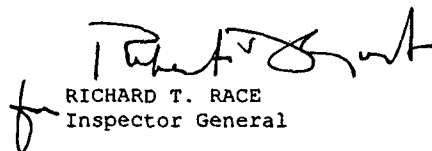
1 June 1999

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE
(ATTN: READINESS AND LOGISTICS SUPPORT
DIRECTORATE)

SUBJECT: Response to DoD IG Draft Report, Status of Resources
and Training System (SORTS) Year 2000 Issues (Project
9LG-9019)

1. The attached enclosure is the official DISA response to the subject report. DISA was required to issue formal comments on Recommendations A.1.a, A.1.B, C.4.a, and C.4.b. These recommendations are addressed in the enclosure along with generalized comments.

2. If you have any questions, please call Mr. Jason Bakker, Audit Liaison, at (703) 607-6607.


RICHARD T. RACE
Inspector General

Enclosure a/s

INTEROFFICE MEMORANDUM

TO: INSPECTOR GENERAL (IG)

FROM: DEPUTY DIRECTOR FOR ENGINEERING AND INTEROPERABILITY
(D6)

DATE: 27 May 1999

SUBJECT: DoD IG Draft Report, Status of Resources and Training
System Year 2000 Issues (Project 9LG-9019)

Preparer: D. Mart/D6/(703) 607-6268/dmm

1. We have completed our review of the subject draft audi report and provide the following general comments:

- a. DISA's approach to ensuring all our mission critical and non-mission critical systems are Y2K compliant is documented in the DISA Year 2000 Problem Management Plan and is consistent with the DoD Y2K Management Plan. Our primary focus was to ensure the mission critical systems were completed first and then to focus on the non-mission critical systems. Our objective is to ensure the warfighter has the capability in-hand to accomplish the mission.
- b. The Status of Resources and Training (SORTS) is a system which is fed by Service systems and is used as the source of information for GCCS. SORTS is comprised of applications and a database (SORTS-DB). SORTS doesn't exist without the database and vice versa. SORTS-DB never should have been listed in the DISA Y2K database.
- c. SORTS along with the database, Global Command and Control System SORTS (GSORTS) and Global Online Marine Edit and Report System (GOMERS) had all been tested and had been found to be Y2K compliant by the Readiness Branch prior to the DoDIG audit. GSORTS was certified as part of GCCS by the JITC using the interface to SORTS and its database. The Program Manager for SORTS thought that the testing accomplished by the JITC on GCCS applied to SORTS. In March the JITC notified us that its Y2K certification recommendation for GCCS did not include SORTS and its database. DISA provided the test documentation to the JITC, they agreed with our initial assessment and recommended SORTS and its database be given an certification level of 2a.

- d. Neither the Joint Staff nor the Marine Corps had designated GOMERS as a mission critical system. At the time of the audit, the Y2K certification checklist and the test documentation for GOMERS had been provided to the DISA CIO for an independent audit in accordance with the DISA Y2K Problem Management Plan procedures for non-mission critical systems. As a result of the concerns expressed by the DoDIG, we provided the GOMERS test documentation to the JITC for their assessment, which is ongoing.

2. Additionally, we have the following specific comments:

a) Page ii. Summary of Recommendations - "We recommend that the Director, DISA, decertify SORTS-DB and GSORTS." Comment: There is no need to decertify SORTS as it has been recertified as Y2K compliant. Although correctly noted elsewhere throughout the report, GSORTS is incorrectly noted as being improperly certified here; delete GSORTS from this recommendation to decertify.

b) Page 4, Finding A, bullet item 1 "the SORTS database was inappropriately certified and reported as Y2K compliant because the certification was based on limited testing on the GCCS." Comment: The SORTS database was appropriately certified in accordance with the DISA Y2K Problem Management Plan. The testing was completed successfully and the certification checklist was in for signature. The testing documentation and the certification checklist had been provided to the DISA CIO for their independent audit, which was in progress. Since the DoDIG audit was performed we have taken the additional step of sending the documentation to the JITC and they have agreed with our test findings and recommended that SORTS-DB be given a certification level of 2a, consistent with our assessment. The checklist, with JITC signature, was signed 30 April 1999.

c) Page 4, Finding A, bullet item 5 "GOMERS was not included in the list of systems to be certified and reported on the DoD Y2K reporting database because it was considered a tool and therefore not designated as a mission essential by DISA." Comment: Although the finding that GOMERS was not considered mission-essential is correct, it is appropriate to note that GOMERS was being independently validated by DISA CIO in accordance with the DISA Y2K Problem Management Plan.

d) Page 5, Y2K Status of SORTS Reporting Systems, Readiness Reporting Systems "The SORTS database was inappropriately certified and reported as Y2K compliant." Comment: See general comments above.

Deleted
GSORTS,
Page ii

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e) Page 5, Y2K Status of SORTS Reporting Systems, SORTS Database and GSORTS Certifications and Reporting "DISA inappropriately certified and reported as Y2K compliant in the DoD Y2K reporting database the SORTS database. DISA designated SORTS as a certified mission critical system but was unable to provide certification documentation." Comment: See general comments above.

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f) Page 5, Y2K Status of SORTS Reporting Systems, SORTS Database and GSORTS Certifications and Reporting "The JITC tested GSORTS, a subsystem of GCCS, but did not conduct Y2K tests of the SORTS database during the GCCS preoperational evaluation conducted in October 1998 and the operational evaluation conducted in December 1998. Comment: Statement is inaccurate. SORTS database transactions were tested during the Oct 1998 and Dec 1998 GCCS tests (using provided test database update transactions and test data). The JITC-prepared GCCS Ver 3.01 Year 2000 Pre-Operational Evaluation Report (1 Dec 1998) clearly notes in Section 6.7 that "we observed the correct GSORTS updates on all test dates." Database updates are accomplished by SORTS -- as noted elsewhere in this audit report, GSORTS is a read-only viewer into the SORTS database and does not perform updates.

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g) Page 6, Y2K Status of SORTS Reporting Systems, SORTS Database and GSORTS Certifications and Reporting "There was no evidence that the hardware and software components of the SORTS database was inventoried and assessed for Y2K compliance. There was no documentation indicating that system tests were run to determine whether data could be obtained and queried before and after date transitions from the current date, Dec 31, 1999; Jan 1, 2000; Feb 29, 2000; Oct 2000; and Jan 2001." Comment: SORTS uses the same hardware and software environment as GCCS and that fact has been documented in Y2K test reports and on the completed and signed Y2K checklist (dated 30 April 1999). Test reports indicating accurate processing of all noted date thresholds were provided during the audit.

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h) Page 6, Y2K Status of SORTS Reporting Systems, Mission-Essential Systems "AFSORTSDET and GOMERS were not included in the list of systems to be certified and reported because they were considered tools and therefore not mission essential. The Air Force and Marine Corps use Government developed automated tools that can be considered information systems to aid in preparing readiness reports for transmittal through AUTODIN into GSORTS." Comment: See general comment d. GOMERS submits USMTF message formatted readiness reports to

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SORTS, not GSORTS. This information is then retrieved by GSORTS for display.

Page 5

i) Page 6, Y2K Status of SORTS Reporting Systems, AFSORTS.
Comment: AFSORTSDET submits USMTF message formatted readiness reports to SORTS, not GSORTS. This information is then retrieved by GSORTS for display.

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j) Page 7, Y2K Status of SORTS Reporting Systems, GOMERS.
Comment: GOMERS submits USMTF message formatted readiness reports to SORTS, not GSORTS. This information is then retrieved by GSORTS for display.

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k) Page 7, Recommendations (A.1.a) "Decertify the database for SORTS until the system is fully tested for year 2000 compliance IAW the DoD Y2K Management Plan." Comment: This recommendation is already moot as noted above. SORTS was missing some documentation (a signed Y2K checklist) at the time of the audit. However, that problem was corrected as of 30 April 1999 with a complete checklist indicating SORTS has Y2K Assurance Level 2a.

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l) Page 7, Recommendations (A.1.b) "Designate GOMERS as a mission essential system and perform all tests and certifications recommended for mission-essential systems." Concur. We have submitted the documentation to JITC as noted in the general comments above.

m) Recommendation (C.4.a) "Prepare a system contingency plan for GOMERS." Concur. DISA initiated development of the system contingency plan for SORTS to include its database, and GOMERS in January 1999 and a draft plan was completed 17 Mar 1999. The final plan is currently waiting for signature.

n) Recommendation (C.4.b) "Prepare a system contingency plan for SORTS-DB and GSORTS." Partially Concur. DISA initiated development of the system contingency plan for SORTS to include its database, and GOMERS in January 1999 and a draft plan was completed 17 Mar 1999. The final plan is currently waiting for signature. At the time of the audit the system contingency plan for GCCS covered GSORTS.

3. For any questions relevant to this response, please contact

Mr. David Hall at (703) 681-2556 or Lt Col David Mart at (703)
607-6268.



ROBERT J. WEBER
Colonel, USA

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Report



YEAR 2000 COMPUTING ISSUES RELATED TO
HEALTH CARE IN DOD - PHASE II

Report No. 99-196

June 29, 1999

Office of the Inspector General
Department of Defense

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