Audit Report

ARMY LOGISTICS YEAR 2000
END-TO-END TEST PLANNING

Report No. D-2000-033 November 5, 1999

Office of the Inspector General
Department of Defense

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Acronyms

AMC	Army Materiel Command
CINC	Commander in Chief
DUSD(L)	Deputy Under Secretary of Defense (Logistics)
IAWG	Interface Assessment Working Group
OPORD	Operation Order
PM GCSS	Project Manager Global Combat Support System
PSA	Principal Staff Assistant
Y2K	Year 2000

INSPECTOR GENERAL
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November 5, 1999

MEMORANDUM FOR DEPUTY UNDER SECRETARY OF DEFENSE
(LOGISTICS)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Army Logistics Year 2000 End-to-End Test Planning
(Report No. D-2000-033)

We are providing this final report for your information and use. 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 identify progress made by DoD Components that are preparing information and technology systems for year 2000 compliance. We considered management comments on a draft of this report when preparing the final report.

Management comments conformed to the requirements of DoD Directive 7650.3; therefore additional comments are not required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Tilghman A. Schraden at (703) 604-9186 (DSN 664-9186) (tschraden@dodig.osd.mil) or Mr. John M. Gregor at (703) 604-9632 (DSN 664-9632) (jgregor@dodig.osd.mil). See Appendix C 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. D-2000-033 **November 5, 1999**
(Project No. 9LD-9024.01)

Army Logistics Year 2000 End-to-End Test Planning

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 computing challenge. For a complete list of audit projects addressing year 2000 issues, see the year 2000 web pages on the IGnet at http://www.ignet.gov.

The DoD Year 2000 Management Plan (DoD Management Plan), Appendix I, assigns responsibility to the Principal Staff Assistants for ensuring the end-to-end functional process flows that support their functional area are assessed either in a Joint Staff or commander in chief year 2000 operational evaluation, a Service-sponsored system integration test, or a functional area year 2000 end-to-end test. The Principal Staff Assistants are also responsible for planning, executing, and evaluating all mission-critical systems not otherwise tested and ensuring that processes that fall within their purview are evaluated. The Deputy Under Secretary of Defense (Logistics) (DUSD[L]) acts on behalf of the Under Secretary of Defense for Acquisition and Technology, the Principal Staff Assistant for logistics, in performing those functions for the logistics functional area. Logistics end-to-end test planning was accomplished through the "Logistics Capstone Operational Assessment Plan for Year 2000" (Logistics Capstone Plan).

Logistics functional end-to-end testing was divided into three phases. Level I was intra-Component testing, and Level II was inter-Component testing. Level III testing was to be conducted as required to perform retesting. The DUSD(L) provided oversight for Level II testing while delegating responsibility for execution of Level I testing to the Components. Level II testing began on May 25, 1999, and was completed on July 14, 1999. A September 1999 working draft report for Level II testing by the independent evaluator, the Joint Interoperability Test Command, concluded that mission-critical logistics processes will continue unaffected by year 2000 issues. DUSD(L) representatives stated that Level III testing would not be required because of the successful demonstration of year 2000 capabilities by the logistics systems participating in the test of the five critical core logistics processes.

Objectives. The audit objective was to evaluate the effectiveness of the year 2000 end-to-end tests planned for the logistics functional area. This report, the third in a series on logistics end-to-end testing, addresses overall end-to-end test planning accomplished by the Army.

Results. The Army end-to-end test planning for mission-critical logistics processes generally met the requirements outlined in the DoD Management Plan and the Logistics

Capstone Plan. In response to the practical limitations imposed by resource constraints and calendar time remaining, the logistics processes and data flows were prioritized, based on their criticality to the warfighter, to determine which to include in testing. Five critical core processes were identified for testing (requisition, shipment, receipt, inventory control, and asset status), and the Army planned to test all five processes. The Army included in Level I or Level II end-to-end testing 16 of 28 mission-critical systems that supported the five core processes selected for testing. Also, in planning tests for the remaining 12 mission-critical systems, the Army met requirements for higher level testing of its 28 mission-critical logistics systems listed in the DoD Year 2000 Reporting Database. Contingency plans for all mission-critical systems were prepared and scheduled to be exercised by September 3, 1999. However, the Army did not document the risk assessments performed during the process of prioritizing logistics processes for inclusion in end-to-end testing as required by the DoD Management Plan and the Logistics Capstone Plan. The resultant lack of sufficient information contributed to delays in completing the DUSD(L) risk management plan for all core logistics processes. See the Finding section for details.

Summary of Recommendation. We recommend that the Chief Information Officer, Army, develop a risk management plan that includes a risk assessment and mitigation plan for each of the core logistics processes. The risk management plan should be based on probability of occurrence and consequences of occurrence, and list the mitigation for a particular risk.

Management Comments. The Army concurred with the recommendation, stating that it is participating with the other Services to develop a core logistics process risk assessment and mitigation plan. The DUSD(L) is serving as the lead for the effort and Component data will be reflected in the final integrated product. A discussion of management comments is in the Finding section of the report and the complete text is in the Management Comments section.

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Background

Executive Order. Because of the potential failure of computers to function throughout the Government, the President issued Executive Order 13073, "Year 2000 Conversion," February 4, 1998, making it policy that Federal agencies ensure no critical Federal program experiences disruption because of the year 2000 (Y2K) problem. The order requires that the head of each agency ensure that efforts to address the Y2K problem receive the highest priority attention in the agency.

Public Law. Public Law 105-261, "National Defense Authorization Act for Fiscal Year 1999," October 17, 1998, Section 334(b), directs that the Secretary of Defense ensure that "all mission critical systems that are expected to be used if the Armed Forces are involved in a conflict in a major theater of war are tested in at least two exercises." In addition, Section 334(d) states: "Alternative Testing Method. In the case of an information technology or national security system for which a simulated year 2000 test as part of a military exercise described in subsection (c) is not feasible or presents undue risk, the Secretary of Defense shall test the system using a functional end-to-end test or through a Defense Major Range and Test Facility Base."

DoD Y2K Management Strategy. In his role as the DoD Chief Information Officer, the Senior Civilian Official, Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), issued the "DoD Year 2000 Management Plan, Version 2.0" (DoD Management Plan) in December 1998. The DoD Management Plan required DoD Components to implement a five-phase (awareness, assessment, renovation, validation, and implementation) Y2K management process to be completed by December 31, 1998, for mission-critical systems.

The DoD Management Plan also provides guidance for implementing the Deputy Secretary of Defense memorandum, "Year 2000 (Y2K) Verification of National Security Capabilities," August 24, 1998, that requires that each Principal Staff Assistant (PSA) of the Office of the Secretary of Defense "verify that all functions under his or her purview will continue unaffected by Y2K issues." That verification was to be performed after completion of the five-phase management approach that culminated with completion of the implementation phase, December 31, 1998. That further testing, to be conducted during the first half of 1999, was planned and conducted from a mission perspective rather than a system perspective and would increase the confidence that any errors or omissions in system remediation would be found. The Deputy Under Secretary of Defense (Logistics) (DUSD[L]) acts on behalf of the Under Secretary of Defense for Acquisition and Technology, the PSA for logistics, in performing those functions for the logistics functional area.

DoD Logistics End-to-End Planning. The DUSD(L) implemented and executed key components of the DoD Management Plan in his efforts to adequately plan for and manage logistics functional end-to-end testing. Test planning was

accomplished through the "Logistics Capstone Operational Assessment Plan for Year 2000" (Logistics Capstone Plan), dated October 30, 1998, and approved in November 1998. The Logistics Capstone Plan provided the overall strategy for conduct of the logistics end-to-end testing and was coordinated with the Services, the Defense Logistics Agency, the Joint Interoperability Test Command, and the Joint Staff. The October 1998 Logistics Capstone Plan was updated in February 1999 and again in May 1999 to reflect evolving schedules and processes. Its name was changed to "Logistics Capstone Plan for Year 2000 End-to-End Test" as part of the February update. In this report, unless otherwise noted, Logistics Capstone Plan refers to the May 20, 1999, version.

Objectives

The audit objective was to evaluate the effectiveness of the Y2K end-to-end tests planned for the logistics functional area. This report, the third in a series on logistics end-to-end testing, addresses the overall end-to-end test planning accomplished by the Army. See Appendix A for a discussion of the audit scope and methodology and a summary of prior coverage.

Army Planning for Logistics End-to-End Testing

The Army end-to-end test planning for mission-critical logistics processes generally met the requirements outlined in the DoD Management Plan and the Logistics Capstone Plan. In response to the practical limitations imposed by resource constraints and calendar time remaining, the Army and the other Services, in conjunction with the Logistics Interface Assessment Working Group (IAWG),[1] the DUSD(L), and the Defense Logistics Agency, prioritized the logistics processes and data flows, based on criticality to the warfighter, to determine which to include in the Level II end-to-end testing. They identified five critical core processes for testing. The Army planned to test all five processes and met requirements for higher level testing of its 28 mission-critical logistics systems listed in the DoD Y2K Reporting Database. Contingency plans for all mission-critical systems were prepared and scheduled to be exercised by September 3, 1999. However, the Army did not document the risk assessments performed during the process of prioritizing logistics processes for inclusion in end-to-end testing as required by the DoD Management Plan and the Logistics Capstone Plan. The resultant lack of sufficient information contributed to delays in completing the DUSD(L) risk management plan for all core logistics processes.

Army Guidance

Operation Order. Recognizing the increasing role of automation and the potential impact of the Y2K problem on the Army's ability to perform its mission effectively in Service-unique and joint operations, the Deputy Chief of Staff for Operations and Plans issued Operation Order (OPORD) 99-01, "Millennium Passage," on January 4, 1999. The mission or purpose of the OPORD was to demonstrate in an operational environment the Army's ability to accomplish critical missions and to ensure readiness in a Y2K environment. The OPORD outlined actions and assigned implementing and coordinating responsibilities to minimize Y2K impacts and disruptions and to identify contingency plans for key systems and missions of the Army. Execution of the OPORD involves a five-phase concept of operations: System Testing (Phase I), OSD [Office of the Secretary of Defense] Functional End-to-End Testing (Phase II), Commander in Chief Operational Evaluations (Phase III), Army Operational Evaluations (Phase IV), and Chairman's Contingency Assessments (Phase V).

Test Plans. The Logistics Capstone Plan provided the overall strategy for conduct of the DoD logistics end-to-end testing. The Army implemented the Logistics Capstone Plan with the issuance of the "Army Logistics Systems Cross Functional

[1]The Logistics IAWG membership was composed of DoD Component representatives and was chaired by the Director, Logistics Systems Modernization.

End-to-End Test Plan for Year 2000 Capstone Operational Assessment" (the Army Summary Test Plan), version 1.5, May 5, 1999. The Army Summary Test Plan outlines the overall Army strategy for participation in logistics end-to-end testing and incorporates detailed testing plans[2] issued by Army Materiel Command (AMC) and by the Project Manager Global Combat Support System-Army (PM GCSS-Army).

The AMC issued the "U.S. Army Materiel Command Year 2000 End-to-End Test Level I and II Test Plan" (the AMC Plan), version 5.0, on June 7, 1999. The PM GCSS-Army issued the "PM GCSS-Army Year 2000 (Y2K) End-to-End Test Plan for Mission-Critical Systems: ULLS-A, ULLS-G, SAMS-Rehost, SARSS-O, SAAS-Mod"[3] (the PM GCSS-Army Plan), version 2.2, on May 5, 1999. The PM GCSS-Army Plan addresses standard Army systems managed by the Program Executive Office Standard Army Management Information Systems. The AMC Plan and the PM GCSS-Army Plan were issued to provide detailed guidance for the end-to-end testing of mission-critical logistics systems involving internal Army systems and the interfacing of those systems with external systems of the other Services and the Defense Logistics Agency.

Army Test Responsibilities. Personnel from the Office of the Deputy Chief of Staff for Logistics; the AMC Y2K Program Manager; and personnel from the Program Executive Office Standard Army Management Information Systems; the PM GCSS-Army; the Aviation and Missile Command; the Industrial Logistics Support Center; the Industrial Operations Command; the Logistics Support Activity; the Logistics Systems Support Center; the Tank and Automotive Command; the Defense Megacenter-St. Louis, Missouri; and the Information Systems Software Development Center-Fort Lee, Virginia, were responsible for coordinating and conducting Level I and Level II testing. Additionally, the Defense Automatic Addressing System, the Defense Logistics Agency, and the other Services interfaced at various points along the mission-critical systems. Functional subject matter experts performed the Level I and Level II end-to-end testing at the Defense Megacenter-St. Louis and the Information Systems Software Development Center-Fort Lee. The personnel had full knowledge of the programs supporting the applications and systems.

Army Planning for End-to-End Testing

The Army end-to-end test planning for mission-critical logistics processes generally met the requirements outlined in the DoD Management Plan and the Logistics Capstone Plan. The overall objective of the Army participation in the logistics end-to-end test effort is to ensure the continuity of logistics support for military operations. The testing includes validating critical information flows for systems

[2]The Army Summary Test Plan also includes a detailed test plan for mission-critical logistics systems managed by the Military Traffic Management Command that were included in the U.S. Transportation Command operational evaluation.

[3]These systems are defined in Appendix B.

within the Army (Level I) and for Army systems that interface with systems from the other Services and the Defense Logistics Agency (Level II). As required by the Logistics Capstone Plan, the Army Level I and Level II test plans addressed areas such as end-to-end test strategy, critical core processes, mission-critical systems that support the core processes, and test limitations.

Level I end-to-end testing for PM GCSS-Army systems began on May 3, 1999, and ended on May 19, 1999. Level I testing for AMC systems began on May 12, 1999, and ended on August 12, 1999. The AMC Level I testing was delayed because a special test platform had to be acquired and incorporated into the existing test platform. The need for a special test platform was not anticipated prior to the start of testing. It was required for testing of the Army COMSEC [Communication Security] Commodity Logistical and Accounting Information Management System. The Army started Level II end-to-end testing of its mission-critical processes and systems on May 25, 1999, and completed testing on July 14, 1999. The DoD Management Plan calls for final test reports to be completed within 30 days of completion of testing.

Test Reports. The Army and the Joint Interoperability Test Command have issued four test reports on the Level I and Level II testing. The reports indicate that Y2K-related problems were insignificant and that critical core logistics processes will continue unaffected by Y2K issues.

- The PM GCCS-Army issued the final report, "PM GCSS-Army Year 2000 (Y2K) Level I End-to-End System Test Report for Mission-Critical Systems: ULLS-A, ULLS-G, SAMS-Rehost, SARSS-O, SAAS-Mod," July 1, 1999. The report was prepared by the test evaluator, TRW Corporation. Independent validation and verification was performed by the Army Logistics Integration Agency. TRW Corporation and the Army Logistics Integration Agency concluded that the test was satisfactory and that the systems performed as designed.

- The AMC issued the final report, "U.S. Army Materiel Command Year 2000 End-to-End Test Level I and II Test Report," August 31, 1999. The AMC Test Coordinator and the Joint Interoperability Test Command, the operational evaluator, concluded that the systems tested were Y2K end-to-end test compliant.

- The AMC issued the draft report, "U.S. Army Materiel Command End-to-End Test Level III Test Report - Army COMSEC [Communication Security] Commodity Logistical and Accounting Information Management System,"[4] September 8, 1999. The report, prepared by the AMC Test Coordinator and the Joint Interoperability Test Command, the operational evaluator, concluded that the system would perform in a Y2K environment. Non-Y2K anomalies caused by

[4]The system was originally planned for Level I testing under the AMC Plan. Because the system required a special test platform, its testing was delayed and subsequently reported as a Level III test.

incorrect data inputting and improper sequencing, and a previously identified software code change, were corrected and recorded in Exercise Trouble Reports.

- A working draft report, "Logistics Year 2000 End-to-End Level II Exercise Evaluation Report," September 1999, by the independent evaluator, the Joint Interoperability Test Command, concluded that mission-critical logistics processes will continue unaffected by Y2K issues. Anomalies were identified for two Army mission-critical logistics systems, a non-Y2K anomaly for the Commodity Command Standard System and a Y2K anomaly for the Standard Army Ammunition System-Modernization (the Ammunition System). The operational impact of the Ammunition System Y2K anomaly was assessed as minimal and system representatives had a plan to correct the code and deliver a patch to the field by October 31, 1999.

Testing Strategy. The Logistics Capstone Plan defines three levels of testing and delegates responsibility for each. The multilevel test approach consisted of intra-Component events (Level I), inter-Component events (Level II), and post-test activities that include retest (Level III). Level I testing was designed to ensure processes and systems within a Component's organizational boundaries are Y2K ready. Level II testing was designed to verify mission-critical processes and information flows that involve more than a single Component are Y2K ready. The execution and oversight of the Level I testing was completely delegated to the Components while DUSD(L) focused on the Level II testing and post-test events, such as retest, during Level III. Independent validation and verification for test planning, execution, and reporting of Level I testing for PM GCSS-Army systems was achieved through the use of the Logistics Integration Agency. Independent validation and verification for test planning, execution, and reporting of Level I testing for AMC systems, as well as all Level II testing, was achieved through the use of the Joint Interoperability Test Command. The Army incorporated the guidelines from the Logistics Capstone Plan into the Army Level I and Level II test plans.

Core Processes. The Army and the other Services, in conjunction with the IAWG, the DUSD(L), and the Defense Logistics Agency, agreed that all mission-critical systems and processes could not be assessed during the logistics functional end-to-end testing because of time and resource constraints. They identified 8 out of 15 core supply and materiel management processes as mission-critical to the warfighter. The eight processes were further refined to reflect five processes to be included in the end-to-end testing. The narrow focus for logistics end-to-end testing was to assess mission-critical processes for functions that would impair a warfighting mission within hours or days of being needed and not available. The five core processes were requisition, shipment, receipt, inventory control, and asset status. The Army Level I and Level II end-to-end testing covered each of the five core processes. The general approach taken by the Army, the other Services, and the Defense Logistics Agency was to identify critical functional processes and then the information systems that supported those processes. The Army included in

Level I or Level II end-to-end test planning 16[5] of the 28 mission-critical systems that supported the 5 critical core logistics processes selected for testing. Table 1 provides a list of the systems that participated only in Level I logistics end-to-end testing and their relationships to the core processes tested.

Table 1. Mission-Critical Army Systems Involved in Level I Logistics End-to-End Testing Only

	Process Tested				
Army Systems*	Asset Status	Inventory	Receipt	Requisition	Shipment
AACA					X
ACCLAIMS				X	
ATAV	X				
SAMS-R				X	
SARSS-1(O)				X	
SARSS-2AD				X	
ULLS-A				X	
ULLS-G				X	

*Army systems are defined in Appendix B.

[5]In addition to the 16 mission-critical systems included in Level I and Level II end-to-end testing, AMC was separately testing the Army War Reserve Deployment System, the Logistics Intelligence File, and the Unit Movement Visibility system in Service integration tests. Although those systems were critical to AMC missions, they were not involved in the five processes selected for testing, and therefore were not included in the functional end-to-end testing under the Logistics Capstone Plan. For reporting purposes, the Office of the Deputy Chief of Staff for Logistics categorized the three systems as participating in functional end-to-end testing.

Table 2 provides a list of the systems that participated in Level I and Level II logistics end-to-end testing and their relationships to the core processes tested.

Table 2. Mission-Critical Army Systems Involved in Level I and Level II Logistics End-to-End Testing

	Process Tested				
Army Systems*	Asset Status	Inventory	Receipt	Requisition	Shipment
ADAP				X	
CCSS	X	X	X	X	
DODAAD				X	
MTMS				X	
SDS		X	X	X	
SAAS-Mod				X	
SARSS-GW				X	
SARSS-2AC/2B	X			X	

*Army systems are defined in Appendix B.

Test Limitations. Because all logistics processes and mission-critical system interfaces could not be tested within the time available, the Army limited its testing in several areas, as described in the following paragraphs.

Test Environment. The Army Level I and Level II end-to-end testing was performed to ensure interoperability in Y2K environments of mission-critical system interfaces. Testing included all files, interface control documents, and support utilities needed to validate the Logistics Capstone Plan. Level I and Level II end-to-end testing ensured that, for AMC and PM GCSS-Army systems:

- Y2K platforms met or exceeded the performance of the current operating environments without change to the system functionality,
- all program support utilities functioned properly in the new Y2K environment,
- uploads and downloads of data functioned properly, and
- mission-critical and functional capability data flows continued to work correctly after the date rollovers.

The limitations of the Army test environment were as follows.

- System testing did not validate all support utility programs.

- Tests were not conducted in production environments[6] but used a representative test environment.

- Testing was not an uninterrupted end-to-end test. Because the test environment could not be configured to simulate all systems at one time, the test was configured to simulate each system sequentially.

Date Crossings Tested. Date scenarios tested in the Level I and Level II testing were fiscal year (September 30, 1999, to October 1, 1999), calendar year (December 31, 1999, to January 1, 2000), and leap day (February 28, 2000, to February 29, 2000, and February 29, 2000, to March 1, 2000). A baseline test was performed to compare current data to the test results.

Transactions Tested. The Army limited the number and type of transactions it tested in Level I and Level II end-to-end testing. It selected supply transactions for 15 Federal supply classes for end-to-end testing. The transactions included 27 national stock numbers, of which 8 were Defense Logistics Agency national stock numbers and 19 were Army national stock numbers. The 27 national stock numbers were tested during Level I and Level II. Transactions for an additional 10 national stock numbers were initiated by the other Services for processing through AMC systems during Level II testing. The Level I and Level II end-to-end testing confirmed correct transmission of data internal to the Army and externally with the other Services and the Defense Logistics Agency.

Higher Level Testing of Mission-Critical Systems

The Army was taking adequate action to ensure that its 28 mission-critical logistics systems participated in higher level testing in accordance with Public Law 105-261 as implemented by the DoD Management Plan. The DoD Management Plan requires that all mission-critical systems directly involved in a major theater war scenario be tested in a commander in chief (CINC) operational evaluation. Also, each of those systems must be tested a second time, in a CINC operational evaluation, a functional area end-to-end test, or a Service-sponsored system integration test. All other mission-critical systems must be tested at least once in either a functional area end-to-end test or a Service-sponsored system integration test.

The DoD Y2K Reporting Database, which is the single official source supporting senior DoD management and for reporting all mission-critical systems to the Office of Management and Budget, listed 28 Army mission-critical logistics systems. Of the 28 mission-critical systems, the DoD Y2K Reporting Database indicated that seven systems required two higher level tests and that the remaining 21 systems required one higher level test. The seven systems requiring two higher level tests

[6]Production environments are the environments in which software applications operate on a day-to-day basis.

were also included on the Joint Staff "Master CINC Thin Line Systems List" (the Thin Line List) as of August 4, 1999. Systems on the Thin Line List are directly involved in a major theater war scenario and require two higher level tests.

The Army maintained two databases for tracking the status of mission-critical systems: the Army Y2K Database and the Army Completed and Planned Evaluations of Army Systems Database. The Army Y2K Database was developed to comply with Office of Management and Budget and DoD Y2K reporting requirements and tracks the Y2K compliance status of all Army systems. The Army Y2K Database was designed to allow users to access the database through the Internet and provide additional data validity checks to maintain data integrity. The Army Completed and Planned Evaluations of Army Systems Database was specifically developed to ensure compliance with the requirement for higher level testing of mission-critical systems. The database identifies all mission-critical systems, completed and scheduled tests, and the overall status of test results. Both databases are maintained by the Army Office of the Director of Information Systems for Command, Control, Communications, and Computers.

To ensure that testing had been conducted or was being planned for all mission-critical logistics systems as required by the DoD Management Plan, we reconciled mission-critical logistics systems contained in the DoD Y2K Reporting Database to records contained in the Army Y2K Database, the Army Completed and Planned Evaluations of Army Systems Database, and the Thin Line List as of August 4, 1999. Our analysis showed the following.

- The Army accurately reported its 28 mission-critical logistics systems.
- The Army Completed and Planned Evaluations of Army Systems Database accurately reflected the 7 mission-critical logistics systems requiring 2 higher level tests and the 21 mission-critical logistics systems requiring 1 higher level test.
- The required number of higher level tests for all mission-critical logistics systems had been conducted or were scheduled through Level I and Level II end-to-end tests, CINC operational evaluations, and Army-sponsored system integration tests.

Contingency Planning

The Army had completed contingency plans for the 16 mission-critical logistics systems included in the Army Level I and Level II logistics end-to-end testing and all contingency plans had been or were scheduled to be exercised by September 3, 1999.

The Logistics Capstone Plan requires that all thin-line systems supporting the identified mission-critical processes have an effective contingency plan. In addition, the Logistics Capstone Plan states that the contingency plans must be developed and validated by operators, must be resourced, and must be tested. A

target completion date of September 1, 1999, was given for completion of the testing of system contingency plans, although the DoD Management Plan target completion date was June 30, 1999. The Logistics Capstone Plan requires Components to submit continuity of operations plans for review by June 15, 1999, or be prepared to exercise the plans before December 1, 1999. The Chief Information Officer, Army, subsequently established a target completion date of September 30, 1999, to have all mission-critical contingency plans tested. Personnel from the Office of the Deputy Chief of Staff for Logistics stated that all mission-critical contingency plans were successfully tested.

Measures to Minimize Risk of Y2K-Related System Failures

The Army did not document the risk assessments performed during the process of prioritizing logistics processes for inclusion in end-to-end testing as required by the DoD Management Plan. The DoD Management Plan states that the Y2K event master planning sessions were to identify and prioritize core processes and perform risk assessments. The Logistics Capstone Plan identified four general categories of corporate-level of risk: scope of testing; test environment; scheduling; and funding. It also assigned each category a risk rating of high, medium, or low, based on probability of occurrence and consequences of occurrence, and listed the mitigation for a particular risk. The Logistics Capstone Plan stated that the discussion of corporate-level risks was an initial risk assessment. In addition, the Logistics Capstone Plan stated that a complete risk mitigation plan will be incorporated in an overall risk management plan. The DUSD(L) was planning to complete an overall risk management plan by September 1999. We determined that the Army end-to-end test plans did not include guidance on preparing or submitting a risk management plan to the DUSD(L) for the Army logistics processes. As of August 26, 1999, the Army had not completed a risk management plan for review and inclusion in the overall DUSD(L) risk management plan. Therefore, the DUSD(L) did not have sufficient information to complete a risk management plan for all core logistics processes by the original target date of September 1999.

Conclusion

The Army generally complied with the DoD Management Plan and the Logistics Capstone Plan in its efforts to plan and manage logistics end-to-end and other higher level test efforts. During Level I and Level II logistics end-to-end testing, the Army participated in the testing of the five core logistics processes that were deemed most critical to support of the warfighter. The Army adequately planned to ensure that required higher level tests of all mission-critical logistics systems were being accomplished and to ensure that contingency plans were prepared and were being exercised. However, the Army did not document the risk assessments

performed during the process of prioritizing logistics processes for inclusion in end-to-end testing as required by the DoD Management Plan and the Logistics Capstone Plan.

Recommendation and Management Comments

We recommend that the Chief Information Officer, Army, develop a risk management plan that includes a risk assessment and mitigation plan for each of the core logistics processes. The risk management plan should be based on probability of occurrence and consequences of occurrence, and list the mitigation for a particular risk.

Army Comments. The Army concurred with the recommendation, stating that it is participating with the other Services to develop a core logistics process risk assessment and mitigation plan. The DUSD(L) is serving as the lead for the effort and Component data will be reflected in the final integrated product.

Appendix A. Audit Process

This is one in a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the Y2K computing challenge. For a listing of audit projects addressing the issue, see the Y2K web pages on IGnet at http://www.ignet.gov.

Scope and Methodology

Work Performed. We reviewed the Y2K test planning efforts of the Army for the logistics functional end-to-end testing. We evaluated the Army Y2K planning efforts and compared those efforts with criteria contained in the DoD Management Plan. We reviewed Public Law 105-261, Section 334; the Deputy Secretary of Defense memorandum of August 24, 1998; the DoD Management Plan; the Logistics Capstone Plan; the Army Summary Test Plan; the AMC Plan; the PM GCSS-Army Plan; OPORD 99-01, "Millennium Passage"; and other guidance related to testing mission-critical logistics systems. We also evaluated test reports issued by the PM GCSS-Army, the AMC, and the Joint Interoperability Test Command. The documents we reviewed were dated from August 1998 through September 1999. In addition, we reviewed and evaluated information contained in the DoD Y2K Reporting Database, the Army Y2K Database, and the AMC Y2K Database. We interviewed personnel from the Office of the DUSD(L); the Office of the Army Deputy Chief of Staff for Logistics; the AMC; the Program Executive Office Standard Army Management Information Systems Y2K project office; and the PM GCSS-Army Y2K project office. We also interviewed Government contractors involved in logistics end-to-end testing.

DoD-Wide Corporate-Level Goals. In response to the Government Performance and Results Act, DoD has established 2 DoD-wide corporate-level goals and 7 subordinate performance goals. This report pertains to achievement of the following goal (and subordinate performance goal):

> **Goal 2:** Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. **Performance Goal 2.2.** Transform U.S. military forces for the future. **(00-DoD-2.2)**

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement of the following objectives and goals in the Information Technology Management Functional Area.

- **Objective:** Become a mission partner. **Goal:** Serve mission information users as customers. **(ITM-1.2)**

- **Objective:** Provide services that satisfy customer information needs. **Goal:** Modernize and integrate Defense information infrastructure. **(ITM-2.2)**

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

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

Audit Type, Dates, and Standards. We performed this program audit from June through September 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 for this audit.

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

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

Summary of Prior Coverage

The General Accounting Office and the Inspector General, DoD, have conducted multiple reviews related to Y2K issues. General Accounting Office reports can be accessed over the Internet at http://www.gao.gov. Inspector General, DoD, reports can be accessed over the Internet at http://www.dodig.osd.mil. The reports most relevant to the subject matter of this report are listed below.

General Accounting Office

General Accounting Office Report No. GAO/AIMD-99-172 (OSD Case No. 1823), "Defense Computers: Management Controls Are Critical to Effective Year 2000 Testing," June 30, 1999.

Inspector General, DoD

Inspector General, DoD, Report No. 00-021, "Air Force Logistics Year 2000 End-to-End Test Planning," October 21, 1999.

Inspector General, DoD, Report No. 00-002, "Year 2000 End-to-End Testing: Logistics Capstone Plan," October 1, 1999.

Appendix B. Army Mission-Critical Logistics Systems

Organization	System Acronym	System Name
AMC	AACA[1]	Army Airlift Clearance Authority
AMC	ACCLAIMS[1]	Army COMSEC [Communication Security] Commodity Logistical and Accounting Information Management System
AMC	ADAP[1]	Automated Demand Ammunition Processing
AMC	ATAV[1]	Army Total Asset Visibility
AMC	AWRDS	Army War Reserve Deployment System
AMC	CCSS[1]	Commodity Command Standard System
AMC	DODAAD[1]	DoD Activity Address Directory
AMC	LIF	Logistics Intelligence File
AMC	MTMS[1]	Munitions Transportation Management System
AMC	SDS[1]	Standard Depot System
AMC	UMV	Unit Movement Visibility
MTMC[2]	AALPS	Automated Air Loading Planning System
MTMC	AMS	Asset Management System
MTMC	CFM-Host	CONUS [Continental U.S.] Freight Management
MTMC	ELIST	Enhanced Logistics Intra-Theater Support Tool
MTMC	GOPAX	Group Operational Passenger System
MTMC	IBS	Integrated Booking System
MTMC	ICODES	Integrated Computerized Development System
MTMC	WPS	Worldwide Port System
PEO STAMIS[3]	SAAS-Mod[1]	Standard Army Ammunition System-Modernization
PEO STAMIS	SAMS-R[1]	Standard Army Maintenance System-Rehost
PEO STAMIS	SARSS-GW[1]	Standard Army Retail Supply System-Gateway
PEO STAMIS	SARSS-1(O)[1]	Standard Army Retail Supply System Level 1 Objective
PEO STAMIS	SARSS-2AC/2B[1]	Standard Army Retail Supply System-2AC/2B
PEO STAMIS	SARSS-2AD[1]	Standard Army Retail Supply System-2AD
PEO STAMIS	TC-ACCIS	Transportation Coordinator-Automated Command and Control Information System
PEO STAMIS	ULLS-A[1]	Unit Level Logistics System-Aviation
PEO STAMIS	ULLS-G[1]	Unit Level Logistics System-Ground

[1]System participated in end-to-end testing under the Logistics Capstone Plan.
[2]Military Traffic Management Command.
[3]Program Executive Office Standard Army Management Information Systems.

Appendix C. Report Distribution

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House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform
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Department of the Army Comments

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OFFICE OF THE SECRETARY OF THE ARMY
107 ARMY PENTAGON
WASHINGTON DC 20310-0107

Office, Director of Information Systems for Command, Control, Communications, & Computers
SAIS-IIAC

26 Oct 99

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE, 400 ARMY NAVY DRIVE, ARLINGTON, VA 22202

SUBJECT: Audit Report on Army Logistics Year 2000 End-to-End Test Planning (Project No 9LD-9024 01)

Reference DODIG memorandum, 21 September 1999, subject as above. As requested, following is the Army response to subject draft report.

Recommendation. We recommend that the Chief Information Officer, Army, develop a risk management plan that includes a risk assessment and mitigation plan for each of the core logistics processes. The risk management plan should be based on probability of occurrence and consequences of occurrences, and list the mitigation for a particular risk.

Response. Concur The Army is participating with the other services to develop a core logistics process risk assessment and mitigation plan. DUSD(L) is serving as the lead for this effort and the component data will be reflected in the final integrated product.

My point of contact for this action is Mr. William Dates, (703) 275-9483

MIRIAM F. BROWNING
Director for Information
Management

CF: SAAG-PMO-S
DALO-PLI

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Audit Team Members

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