

**A**udit



**R**eport

YEAR 2000 MISSION-CRITICAL  
NON DATE-DEPENDENT SYSTEMS

Report No. 99-262

September 30, 1999

Office of the Inspector General  
Department of Defense

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### **Acronyms**

Y2K

Year 2000



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

September 30, 1999

MEMORANDUM FOR ASSISTANT SECRETARY OF THE DEFENSE  
(COMMAND, CONTROL, COMMUNICATIONS, AND  
INTELLIGENCE)  
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL  
MANAGEMENT AND COMPTROLLER)  
ASSISTANT SECRETARY OF THE AIR FORCE  
(FINANCIAL MANAGEMENT AND COMPTROLLER)  
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Year 2000 Mission-Critical Non Date-Dependent  
Systems (Report No. 99-262)

We are providing this report for your information and use. Because this report contains no recommendations, written comments were not required and none were received. Therefore, we are publishing this report in final form.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Raymond A. Spencer at (703) 604-9071 (DSN 664-9071) (rspencer@dodig.osd.mil) or Mr. Thomas S. Bartoszek at (703) 604-9049014 (DSN 664-9014) (tbartoszek@dodig.osd.mil). See Appendix C for the report distribution. Audit team members are listed inside the back cover.

A handwritten signature in black ink that reads "Robert J. Lieberman".

Robert J. Lieberman  
Assistant Inspector General  
for Auditing

## Office of the Inspector General, DoD

Report No. 99-262  
(Project No. 9AS-0090)

September 30, 1999

### Audit of the Year 2000 Mission-Critical Non Date-Dependent Systems

#### Executive Summary

**Introduction.** This report is one in a series being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts in addressing the year 2000 computing problem. For a listing of audit projects addressing the issue, see the year 2000 webpage on the IGnet at <http://www.ignet.gov>.

**Objectives.** The audit objective was to determine whether assessments that certain mission-critical systems were not date-dependent had been appropriately made. We reviewed the documentation that supported the categorization of 130 of the 634 mission-critical systems reported in the DoD Year 2000 database as not date-dependent.

**Results.** Of the 130 systems reviewed, 126 systems were properly classified as non date-dependent. The remaining four systems were date dependent. However, the Air Force determined that the four systems were improperly classified as mission critical. The Air Force reclassified the four systems as mission essential and tested them to ensure Year 2000 compliance. With those exceptions, we are 90 percent confident that the mission critical non date-dependent systems in the DoD Year 2000 database have been accurately classified as non date-dependent and do not require higher level testing. For details of the audit results, see the higher level testing discussion section of the report.

**Management Comments.** We provided a draft report on August 17, 1999. Because this report contains no adverse findings, written comments were not required, and none were received. Therefore we are publishing this report in final form.

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## **Background**

On completion of the testing of the individual systems' year 2000 (Y2K) readiness, DoD embarked on a series of higher-level testing, or operational readiness assessments, required by DoD guidance and Public Law.

**The "DoD Y2K Management Plan," December 1998.** The "DoD Y2K Management Plan," Appendix I, Operational Readiness Assessment, provides guidance on implementing the Deputy Secretary of Defense memorandum on "Y2K Verification of National Security Capabilities," dated August 24, 1998. Appendix I outlines requirements for systems that require two higher level tests and for systems that only require one higher level test. The memorandum states that the Military Departments must certify that they have tested the Y2K capabilities of their respective Component's information technology and national security systems in accordance with the "DoD Y2K Management Plan."

**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, "In the case of an information technology or national security system for which a simulated Y2K 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."

## **Objectives**

The audit objective was to determine whether assessments that certain mission-critical systems were not date-dependent had been appropriately made. We reviewed the documentation that supported the categorization of 130 of the 634 mission-critical systems reported in the DoD Year 2000 database as not date-dependent. See Appendix A for a discussion of the audit scope and methodology and summary of prior coverage.

## **Related Audit Work**

We did not review Special Operations Command systems and intelligence systems because of ongoing audits of the intelligence functional area Y2K end-to-end testing and of the Special Operations Command. Subsequent audit reports will address those areas.

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## Year 2000 Mission-Critical Non Date-Dependent Systems

The Service components and DoD agencies have performed adequate assessments to determine which DoD mission-critical systems do not have date-related processes, and, thereby, do not require higher level testing. Of 130 DoD mission-critical systems, 126 were properly classified as non date-dependent. The remaining four systems were date-dependent. However, during our review those four systems were reclassified as mission-essential. As a result, the DoD has reasonable assurance that no date dependent mission-critical system will be excluded from higher level testing because it has been inappropriately classified as non date-dependent.

### DoD Guidance on Higher-Level Testing

The DoD Y2K Plan, first issued in April 1997 and updated in January 1999, states that all mission-critical systems must be tested in two exercises before September 30, 1999. DoD can accomplish the two tests with two Commander in Chief operational evaluations, or one operational evaluation and either a Service integration test or a functional end-to-end test. The tests demonstrate the Y2K readiness of DoD mission, functions, and operational capability. Systems that do not have date-related processes are exempt from the higher level testing.

### Sample of Non Date-Dependent Mission-Critical Systems

We statistically selected, at a 90 percent confidence level, 130 of 634 non date-dependent mission-critical systems for review from the DoD database. The table below lists the total non date-dependent mission-critical systems and those sampled by Service and DoD component. Appendix B lists each system.

Table of Non Date-Dependent Mission-Critical Systems and Sample Size

<u>DoD Agency or Service Component</u>	<u>Sample Size</u>	<u>Population Size</u>
Army	30	93
Navy	40	382
MarineCorps	10	10
Air Force	30	91
Office of the Secretary of Defense	10	27
Washington Headquarters Service	10	31
Total	130	634

We reviewed supporting documentation that the DoD Agency or Service Component provided to support the claim that the system was not date-dependent. Based on our review and analysis the Army, Navy, Air Force,

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Office of the Secretary of Defense, and Washington Headquarters Service properly classified the 126 mission-critical systems as non date-dependent. The remaining four systems we reviewed were date-dependent. However, subsequent to our review the Air Force reclassified the four systems as mission-essential and accordingly the systems do not require higher level testing. The Air Force tested the four systems and found them to be Y2K compliant requiring no remediation.

## **Conclusion**

We are 90 percent confident that the 634 mission critical non date-dependent systems in the DoD Y2K database have been accurately classified as non date-dependent and thereby do not require higher level testing. DoD has adequately assessed the date-dependent status of its mission-critical systems and has established adequate controls to ensure that systems that do not have date-related processes are properly excluded from higher level testing. Because the systems we reviewed were classified correctly, no recommendations are necessary.

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## 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 webpage on Iagnet at <http://www.ignet.gov>.

### Scope

**Work Performed.** We reviewed and evaluated the progress of DoD and the Services in performing higher level testing on mission-critical systems. We evaluated their Y2K efforts compared with the DoD Y2K Management Plan; and conducted discussions with technical officials; and evaluated Y2K documentation where available.

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

**Objective:** Prepare now for the uncertain future.

**Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key 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 objective and goal:

**Information Technology Management Functional Area.**

**Objective:** Provide services that satisfy customer information needs.

**Goal:** Upgrade technology base. (ITM-2-3)

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

### Methodology

**Audit Type, Dates, and Standards.** We performed this economy and efficiency audit from June 1999 through August 1999, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We relied on computer-processed data without performing tests of system general and application controls to confirm the reliability of the data. We did not assess the reliability of the data because the DoD Y2K database mission-critical system certification levels were being assessed under Inspector General, DoD, Audit Project number 9AS-0090.06, "Reported Y2K System Certification Levels." However, not establishing the reliability of the database will not affect the results of our audit. We

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relied on statistical sampling procedures to develop conclusions on this audit. We statistically selected 130 of 634 non date-dependent DoD mission critical systems to develop conclusions on this audit.

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

**Management Control Program Review.** 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**

**General Accounting Office and the Inspector General, DoD.** 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>.

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## Appendix B. Sample Selection of Non Date-Dependent Mission-Critical Systems

	<u>Description of Mission-Critical System</u>	<u>Identification Number</u>
<b>Department of the Army</b>		
1	Aircraft Survivability Equipment-IV	DA00685
2	AN/FRC-173 Radio Set	DA02068
3	Army Tactical Missile System-Block I	DA02790
4	Army Tactical Missile System-Block IA	DA02791
5	Battalion Level Training Model	DA01843
6	Bradley Fighting Vehicle Subsystem TOW 2 Subsystem	DA00745
7	C-20, Fixed Wing, Gulfstream	DA01670
8	Countermeasure Set AN/TLQ-17A	DA01901
9	Fire Support Team V Mission Equipment	DA01654
10	Ground Vehicle Laser Designator	DA01655
11	High-Mobility Digital Group Multiplexer Assemblages	DA02241
12	Improved Bradley Acquisition Subsystem for the Bradley M2/M3A3	DA00741
13	Improved FM Amplifier	DA02121
14	Instrument Landing System	DA02769
15	Intercommunication Control System	DA02122
16	Interrogation Set	DA01983
17	Lightweight Man-Transportable Radio Direction Finder System	DA02110
18	Low-Frequency Automatic Direction Finder	DA02418
19	M-272; M-279 Laser Hellfire Launcher	DA02141
20	M981 Fire Support Team Vehicle	DA02404
21	Mini Eyesafe Laser Infrared Observation Set, AN/PVS-6	DA01381
22	Modular Universal Laser Equipment	DA01678
23	Night Observance Device Long-Range AN/UAS-11A	DA02736
24	Position Azimuth Determination System	DA01729
25	Sense and Destroy Armor	DA00737
26	Sniper Night Sight, AN/PVS-10	DA01382
27	Suite of Survivability Enhancement Systems	DA00738
28	Tactical Air Navigation	DA02773
29	TOW Missile Series	DA02189
30	VOR/ILSD Aviation System	DA02416

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## Department of the Navy

1	8AN/FYK-17 Fleet Air Control and Tracking System	6499
2	AAU-19 Altimeter, Barometric	6553
3	AAU-38/A Altimeter, Cabin Pressure	6557
4	AAU-8/A Altimeter, Servo	6560
5	AE-6B AN/ASC-33 Digital Airborne Intercommunications Switching Set	6244
6	AN/AJB-7 Attitude Reference Bombing Computer Set	6605
7	AN/APN-147 Radar Set	6593
8	AN/APN-171 Navigation Set, Radar	6595
9	AN/APN-234 Weather Radar Set, Airborne	6599
10	AN/ARC-114 Radio Set, VHF/FM	6527
11	AN/ARC-84 BENDIX 21 VHF Radio Set	12570
12	AN/ARN-105 TACAN System	6618
13	AN/ARN-14 Receiver, VOR	6621
14	AN/BQQ-5C Sonar System	13036
15	AN/WQN-2 Doppler Sonar Velocity Log	8559
16	CH-53E Night Vision System	6068
17	Data Multiplex System	8797
18	DF-206 Auto Direction Finder System	6630
19	Digital Interrogator	6503
20	E-4 Autopilot	6579
21	Enhanced Modular Signal Processor-AN/UYS-2	9234
22	Fiber Optic Intersite System	6483
23	Flight Data Input/Output	6494
24	MA-31 FCT Supersonic Target	7458
25	Multi-Function Torpedo Defense Controller	9240
26	Penguin Anti-Ship Missile	7468
27	Precision Approach Path Indicator	11384
28	Propulsion Control System	10112
29	QF-4S Supersonic Target	7461
30	Radar System - AN/BPS-16 2/3	8406
31	Radar System - AN/SPS-40 B/C/D/E&	8440
32	Radio Direction Finder Set	8424
33	RDR-1300 Weather Radar	6643
34	SCR-718 Radio Set	6535
35	SH-60B Radio Terminal Set	10474
36	TH-6B Primary Rotary Wing Trainer	6671
37	Torpedo Countermeasure-ADC MK2 MOD 0/1	8489
38	Torpedo MK48-MK 48 MOD 3	9086
39	Vertical/Short Take-Off and Landing Optical Landing System	6666
40	Wind Measurement Instrumentation System	11378

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## Marine Corps

1	Airborne Mobile Direct Air Support Central (A0010)	11405
2	Central Office Telephone Automatic	12786
3	Command Communication System	11818
4	Communication Technical Control Center (A0311)	11824
5	Digital Communications Terminal	12784
6	Digital Message Systems	12785
7	Lightweight Air Surveillance Radar Set (A1500)	12729
8	Military Shipping Label System	5749
9	Mobile Electronic Warfare Support System	11823
10	Radar Set, Tactical Defense Alert	11825

## Department of the Air Force

1	Advanced Medium-Range Air-To-Air Missile	AS004388
2	All Weather Flight Control System	99008223
3	AN/ALE-47	99008135
4	AN/ALQ-137	99008186
5	AN/ALQ-184	99008141
6	Analysis of Mobility Platform	AS006482
7	B-2 Spirit Bomber Alternate Mission Equip	99008251
8	BRU-57 Smart Bomb Rack Unit	99008258
9	C-17A Operational Flight Programs	99008260
10	C2 Enterprise Database	99008262
11	CBU-52,58,77	99008264
12	CBU-87	99008265
13	CCG	AS006333
14	Digital Depot Data Integration D3I	99008049
15	Digital Fuel Quantity Indication System	99008230
16	Emergency Action Message Generator	99008274
17	F-4 Hardware	99008288
18	Flight Control Processor for Autopilot Functions	99008228
19	Harm Targeting System Pod	AS006732
20	Inertial Navigation Unit C-5	AS006595
21	Interoperable Airborne Data Link	AS006406
22	Joint Standoff Weapon	99008237
23	LCC	AS006327
24	MCT	AS006330
25	PAR	AS006320
26	Readiness Evaluation, Assessment and Decision Making Information System	99008183
27	SIOP Monitoring System	99008184

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28	Strategic Force Accounting Module	AS003362
29	TACAN	AS006329
30	VOR	AS006313

### **Office of the Secretary of Defense**

1	Budget Execution System	99005623
2	Budget Review System	99005624
3	Office Automation Classified System	99005730
4	Unclassified Office Automation System	99005729
5	Expenditures Forecasting System	99005628
6	Future Years Defense Program	99005629
7	PA Database	99008365
8	Procurement System	99005630
9	Public Affairs Office Automation System	99008372
10	Secretary of Defense Computerized Information Network	99005635

### **Washington Headquarters Service**

1	Administrative Assignment Rental Mgmt System/Rental System	99005357
2	Directives Issuance Tracking System	99004653
3	Emergency Contact System	99005364
4	Inventory Property Management Information System	99005366
5	Systematic Declassification System	99004654
6	Personnel Action Tracking System	99005372
7	Personnel and Payroll Outlays System	99001453
8	Phone Record Tracking System	99005373
9	Reimbursable Work Orders	99005376
10	Worldwide Manpower Information System	99001450

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## **Appendix C. Report Distribution**

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Director, Defense Logistics Studies Information Exchange  
Under Secretary of Defense (Comptroller)  
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Deputy Assistant Secretary of Defense (Command, Control, Communications, and Intelligence, Surveillance, Reconnaissance, and Space Systems)  
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Assistant Secretary of the Navy (Financial Management and Comptroller)  
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Chief Information Officer, Department of the Navy  
Inspector General, Department of the Navy

### **Department of the Air Force**

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Chief Information Officer, Department of the Air Force  
Inspector General, Department of the Air Force  
Auditor General, Air Force Audit Agency

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Director, Defense Logistics Agency  
Director, National Security Agency  
Inspector General, National Security Agency  
Inspector General, Defense Intelligence Agency  
Inspector General, National Imagery and Mapping Agency  
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House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Reform  
House Subcommittee on Government Management, Information, and Technology,  
Committee on Government Reform  
House Subcommittee on National Security, Veterans Affairs and International Relations,  
Committee on Government Reform  
House Subcommittee on Technology, Committee on Science

# **Audit Team Members**

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

Thomas F. Gimble  
Patricia A. Brannin  
Raymond A. Spencer  
Thomas S. Bartoszek  
Juluis L. Hoffman  
Thelma E. Jackson  
Rudolf Noordhuizen  
Lisa E. Novis  
Herbert K. Braun  
Vonna D. Holbrook  
Noble White  
Michael P. Klien  
Karen J. Lamar  
Chanda D. Lee  
Jenshel D. Marshall