

**A**udit  
**R**eport



ARMY MEDICAL RESEARCH INSTITUTE OF INFECTIOUS  
DISEASES PREPARATION FOR YEAR 2000

Report No. 99-035 November 13, 1998

Office of the Inspector General  
Department of Defense

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### **Acronym**

IT Information Technology



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ARLINGTON, VIRGINIA 22202

November 13, 1998

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Army Medical Research Institute of Infectious Diseases  
Preparation for the Year 2000 (Report No. 99-035)

We are providing this audit report for information and use. We considered management comments on a draft of this report when preparing the final report.

We received comments from the Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) that were responsive to the finding and the recommendations. Management comments conformed to the requirements of DoD Directive 7650.3; therefore, no additional comments are required. As a result of the comments from the Deputy Assistant Secretary, we revised the finding text to agree with his alternative wording.

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) or Mr. Roger H. Florence at (703) 604-9067 (DSN 664-9067). See Appendix B for the report distribution. The audit team members are listed inside the back cover.

A handwritten signature in cursive script that reads "Robert J. Lieberman".

Robert J. Lieberman  
Assistant Inspector General  
for Auditing

## Office of the Inspector General, DoD

Report No. 99-035  
(Project No. 8AB-0030.03)

November 13, 1998

### Army Medical Research Institute of Infectious Diseases Preparation for Year 2000

#### Executive Summary

**Introduction.** This report is one of 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. Information technology systems have typically used two digits to represent the year, such as "98" representing 1998, to conserve electronic data storage and to reduce operating costs. With the two-digit format, however, the year 2000 is indistinguishable from 1900. As a result of the ambiguity, computers, associated systems, and application programs that use dates to calculate, compare, and sort could generate incorrect results when working with years after 1999.

**Audit Objectives.** The overall audit objective was to determine whether the Army Medical Research Institute of Infectious Diseases is adequately preparing its information technology systems to resolve date-processing issues regarding the year 2000 computing problem. Specifically, we determined whether the Army Medical Research Institute of Infectious Diseases complied with the DoD Year 2000 Management Plan.

**Audit Results.** The Army Medical Research Institute of Infectious Diseases has not completed actions for year 2000 issues to ensure that mission-essential systems will successfully operate at the year 2000 and beyond. As a result, the Army Medical Research Institute of Infectious Diseases cannot ensure that information technology systems and ongoing research efforts will not have year 2000 date-processing problems and be ready for the turn of the century.

**Summary of Recommendations.** We recommend that the Commander, Army Medical Research Institute of Infectious Diseases, complete the year 2000 assessment inventories; develop cost estimates, formal test plans, and contingency plans; document whether each research project and related research specific information technology are year 2000 compliant; and establish procedures that would require the Army Medical Research Institute of Infectious Diseases personnel to determine and notify the Army Medical Research Acquisition Activity of any contract deliverable that requires date- and time-processing and year-2000-compliant technology.

**Management Comments.** The Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) concurred with the finding and recommendations. See Part I for a summary of management comments and Part III for the complete text of the comments.

**Audit Response.** Comments of the Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) were responsive. As a result of the comments to the draft report, we revised the finding text to agree with the alternative wording that the Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) requested.

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## **Part I - Audit Results**

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## Audit Background

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

The Secretary of Defense issued the memorandum "Year 2000 Compliance" on August 7, 1998, and stated that the year 2000 computer problem is a critical national Defense issue. He also stated that Military Departments will be responsible for ensuring that the list of mission-critical systems under their respective purview is accurately reported in the DoD year 2000 database effective October 1, 1998. The DoD Components must report and explain each change in mission-critical designation to the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) within 1 month of the change.

The Deputy Secretary of Defense issued the memorandum "Year 2000 (Y2K) Verification of National Security Capabilities" on August 24, 1998. The memorandum includes a requirement that the Assistant Secretary of Defense (Health Affairs) provides a comprehensive Year 2000 testing plan for health and medical support systems by November 1, 1998.

Public Law 105-271, "Year 2000 Information and Readiness Disclosure Act," October 19, 1998, is intended to encourage the disclosure and exchange of information about computer processing problems, solutions, test practices and test results, and related matters in connection with the transition to the year 2000.

**Department of the Army Year 2000 Action Plan.** The Department of the Army Year 2000 Action Plan (the Army Action Plan) implements the DoD Management Plan. The Army Chief Information Officer, who is responsible for providing assistance and oversight to Army organizations in resolving the year 2000 problem, issued the Army Action Plan, which provides the Army strategy and management approach to satisfying the year 2000 problem. The Army Action Plan discusses each of the five phases identified in the DoD Management Plan and establishes Army target completion dates for each phase. The five phases are discussed as follows.

- **Phase I - Awareness.** Familiarize Army personnel with the possible year 2000 impact, define the year 2000 problem, identify and educate year 2000 point of contact, and decide the organization approach. Awareness is accomplished through organization memorandums, articles in Army publications, e-mails, briefings, site visits, and other means as appropriate. Target completion of the awareness phase was December 1996.

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- **Phase II - Assessment.** Determine the impact of the year 2000 on the organization's inventory including hardware, software, firmware, and develop acceptable solutions; estimate resource requirements to accomplish year 2000 solutions; and develop contingency plans for the organization. Target completion of the assessment phase was March 1997.

- **Phase III - Renovation.** Develop and fix the actual correction of the year 2000 problems for each system. Target completion of the renovation phase was September 1998.

- **Phase IV - Validation.** Test and verify the correctness of the renovated or replaced systems. All systems must undergo the validation process, including systems assessed as having no year 2000 impact. Target completion for the validation phase is December 1998.

- **Phase V - Implementation.** Systems are considered fully operational after being certified as year 2000 compliant. Target completion date is December 1998.

**Army Medical Department Year 2000 Compliance Plan.** The Army Medical Department Year 2000 compliance plan, issued on April 16, 1998, applies to all automated information systems; other systems with embedded microprocessors and their communications devices; and all Army Medical Command organizations and installations. The compliance plan places the authority and resource responsibility for resolving year 2000 issues with Army Medical Command installations and major subordinate commands. The Tri-Service Infrastructure Management Program Office, as the executive agency for the Military Health System infrastructure, is responsible for the compliance of infrastructure computing devices.

**Tri-Service Infrastructure Management Program Office Guidance.** The Tri-Service Infrastructure Management Program Office, developed a draft guide, May 27, 1998, to assist the Military Health System site managers in inventorying, assessing, and fixing the Military Health System biometric equipment and components by September 1, 1998, and replacing its noncompliant components by December 1, 1998. In addition, the Tri-Service Infrastructure Management Program Office guide helps Military Health System organizations and facilities to inventory and determine whether the information infrastructure is year 2000 compliant. The results were to yield a prioritized list of computers, network components, operating systems, and office automation software packages that must be replaced.

**Biomedical Equipment Year 2000 Compliance Policy.** On April 15, 1998, the Headquarters, Army Medical Command, issued guidance for assessing biomedical equipment for year 2000 compliance. The Army Medical Command recognized that the year 2000 data-processing problem poses a significant management and technical challenge and planned to examine all biomedical equipment within the command. The examination was to identify the biomedical equipment as year 2000 compliant, noncompliant, or noncompliant and not updateable by December 1, 1998. The Army Medical Command was to remove any biomedical equipment identified as noncompliant from service before December 1, 1998.

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**Army Medical Research Institute of Infectious Diseases.** The Army Medical Research Institute of Infectious Diseases (the Institute), a subordinate command of the Army Medical Research and Materiel Command, is the lead medical research laboratory for the Biological Defense Research Program. The Institute conducts research to develop strategies, products, information, procedures, and training programs for medical defense against biological warfare threats and naturally occurring infectious diseases that require special containment. The Institute plays a key role in national defense and infectious disease research as the only biological containment laboratory in DoD for hazardous diseases.

## **Audit Objectives**

Our primary audit objective was to determine whether the Institute was preparing its information technology systems to resolve date-processing issues for the year 2000 computing problem. Specifically, the audit determined whether the Institute had complied with the DoD Year 2000 Management Plan and the Army Action Plan. Appendix A describes the audit scope and methodology and prior audit coverage.

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# **Status of the Army Medical Research Institute of Infectious Diseases Year 2000 Program**

The Institute had taken positive steps to address the year 2000 problem. However, it has not completed actions for year 2000 issues to ensure that mission-essential systems will successfully operate after the turn of the century. This condition exists because the Institute did not receive draft year 2000 guidance until April 1998. As a result, the Institute could not ensure that information technology systems and ongoing research efforts will not have year 2000 date-processing problems.

## **The Institute's Year 2000 Strategy**

The Institute follows the Army Medical Command policy and guidance, derived from the DoD, Office of Assistant Secretary of Defense for Health Affairs, Year 2000 Plan and the Department of the Army Year 2000 Action Plan, for determining whether the Institute has a potential year 2000 impact.

The Institute has divided the year 2000 process into three areas: biomedical equipment, facility infrastructure, and automated information systems. The biomedical equipment encompasses scanners, magnetic resonance imaging systems, patient monitoring systems, and other similar systems. Examples of the Institute's biomedical equipment include electronic microscopes, autoclaves, incubators, centrifuges, and analyzers. The facility infrastructure includes heating, ventilation, and air conditioning systems; sprinkler systems; facsimile machines; and elevator systems. The automated information systems consists of automated information and information technology systems, such as personal computers, servers, and communications hardware and software. The Institute designated a year 2000 focal point in each of the three areas that it is responsible for determining year 2000 compliance.

## **Awareness**

The Institute took action to correct the year 2000 problem in its security system and added year 2000 contracting language to its contracts before April 1998. However, the Institute did not begin addressing the year 2000 computer problem for its biomedical equipment, facility infrastructure, and automated information systems before April 1998. The Institute received draft Army Medical Command year 2000 compliance guidance in April 1998 and compliance guidance for the biomedical equipment on April 14, 1998. The Institute facility

## Status of the Army Medical Research Institute of Infectious Diseases Year 2000 Program

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manager received guidance for the facility infrastructure on April 21, 1998. The Institute Chief Information Officer, responsible for commercial off-the-shelf computer equipment, software, embedded systems, and the local area network, did not receive guidance until June 20, 1998.

At the time of the audit, year 2000 issues were being discussed at command briefings and in messages from higher command, but the Institute had not issued internal year 2000 guidance.

### Inventory and Assessment

The Institute's assessment phase was more inclusive than the assessment phase defined in the Army Action Plan. Items listed in the biomedical equipment, facility infrastructure, and automated information systems inventories are generally commercial-off-the-shelf. The Institute's assessment phase not only requires the inventory and assessment, but also requires fixing or replacing noncompliant systems.

**Inventory.** Each of the Institute's three areas, biomedical equipment, facility infrastructure, and automated information systems, maintained separate inventories. As of July 1998, the biomedical inventory listed 1,971 systems, which the Institute classified as low risk because the equipment does not have any serious impact on patient safety. The facility manager maintains an inventory of all facility infrastructure equipment. The automated information systems inventory lists computer equipment, software, and embedded systems, which the Chief Information Officer considers are essential to the Institute's mission. The automated information systems inventory does not include research-specific software.

**Biomedical Assessment.** The Institute was performing year 2000 assessments as part of its routine biomedical equipment maintenance. Of the 1,971 biomedical equipment systems, the Institute assessed the compliance of 1,719 and found that 7 were noncompliant. In addressing the noncompliance of the seven systems, the Institute reported that four required either new software or a software upgrade; one required a computer chip replacement; one required the operator to manually update the date for leap year; and one required an operating system upgrade. The cost to make six of the seven systems year 2000 compliant is about \$40,000; the cost for the remaining system was unknown. The Institute expects to identify and fix all the biomedical equipment by November 1998.

**Facility Infrastructure Assessment.** The Institute did not assess the facility infrastructure inventory for year 2000 compliance. The Army Medical Research and Materiel Command Year 2000 guidance requires the Institute to identify and fix facility systems by October 1998. The facility manager identified the heating, ventilation, and air conditioning system; the fire detection system; and the chillers as potential year 2000 problems. The facility manager is working with the system vendors to determine the extent of the year 2000

**Status of the Army Medical Research Institute of Infectious Diseases  
Year 2000 Program**

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problem and the cost to make the systems year 2000 compliant. The Institute replaced its physical security system in 1997 because it was not year 2000 compliant. Based on an August 20, 1997, vendor statement, the system software is year 2000 compliant.

**Automated Information Systems Assessment.** At the time of the audit, the Institute had not completed its year 2000 compliance assessment of the equipment or application software. Although the Institute has identified some of the noncompliant mission-essential software, it has contracted one programmer to fix only some of the software modules. However, an additional year of computer programmer effort is needed to fix the remaining software modules for which funding was not available. All components of a new local area network being installed in the Institute are year 2000 compliant. Completed of the local area network is scheduled for December 31, 1998.

**Test Plans.** The Institute has not developed a test plan, as required by the Army Medical Command guidance. The Institute plans to test the biomedical and automated information systems computer hardware using Army Medical Command-approved software. However, not all systems can be tested with the year 2000 testing software, and the Institute has no formal test plan for the new physical security system or research databases.

**Cost Plans.** The Institute has not developed a cost plan for expenditures related to the year 2000 problem, as required by Army Medical Command guidance. The Institute lacks funds to upgrade or replace noncompliant biomedical equipment, facility infrastructure, and automated information systems for FY 1998 and FY 1999. The Institute should identify the funds needed to meet the December 31, 1998, deadline. The Institute identified funding requirements of about \$100,000 for mission-essential software and about \$40,000 for biomedical equipment; however, it did not develop additional funding requirements because it has not completed its inventory and assessments.

**Contingency Plans.** The Institute has not developed contingency plans because it believes that it will be year 2000 compliant by December 31, 1998. The Institute began planning the automated information systems and facility infrastructure inventory assessment in July 1998, which was not sufficient time to complete the inventory assessment and fix or replace noncompliant systems prior to this audit. The Institute has identified noncompliant, mission-essential software that cannot be fixed or replaced by December 31, 1998. Also, the Institute has identified funding shortages and expects additional funding shortages as it assesses the inventory. These issues and the approaching century makes contingency planning even more critical for those systems not assessed for the year 2000 impact, especially when the Institute does not have a comprehensive inventory.

## Status of the Army Medical Research Institute of Infectious Diseases Year 2000 Program

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### Research Programs

The Institute did not assess the potential year 2000 impact on ongoing research programs including researcher-developed databases. The Institute conducts research to develop strategies, products, information, procedures, and training programs for the medical defense against biological warfare threats and naturally occurring infectious diseases that require special containment. The Institute needs to assess each research project, including vital databases generated by the researchers, to prevent the loss of the vital research information.

### Contracting

The Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued a policy memorandum to the Secretaries of the Military Departments and the Directors of the Defense agencies on "Acquisition of Year 2000 Compliant Information Technology (IT) and Bringing Existing IT Into Compliance," December 18, 1997. The memorandum required the review of information technology contracts and other acquisition instruments to determine whether modifications are necessary. The memorandum states that orders for information technology shall not be placed on a contract or other acquisition instrument unless the information technology purchase is year 2000 compliant.

The Army Medical Research Acquisition Activity (the Acquisition Activity) performs contracting services for the Institute and has incorporated the year 2000 clause in IT contracts since late 1996. The audit confirmed the inclusion of the year 2000 clause from a sampling of contracts; however, the contract for the security system at the Institute, dated June 3, 1997, did not contain the required year 2000 clause. At our request, the Institute obtained a year 2000-compliance statement from the security system contractor.

The Institute does not require its personnel to provide year 2000 information on purchase requests. The Deputy for Acquisition Policy and Support of the Acquisition Activity voiced concern that Acquisition Activity contracting officers and Institute personnel are not discussing IT-related contracts for possible year 2000 problems and the need for the year 2000 clause. The Institute needs to establish procedures that would require the Institute personnel to determine and then notify the Acquisition Activity contracting officers of any contract requiring date and time processing.

## **Recommendations and Management Comments**

**We recommend that the Commander, Army Medical Research Institute of Infectious Diseases:**

- 1. Complete the year 2000 assessment of the automated information systems and facility infrastructure inventories to include:**
  - a. Adding research-specific computer hardware, software, and databases;**
  - b. Developing cost plans to fix noncompliant year 2000 systems and equipment;**
  - c. Requesting funding assistance from higher command;**
  - d. Developing test plans for mission-essential systems and databases;**

**and**

  - e. Developing contingency plans for noncompliant hardware or software.**

**Management Comments.** The Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) concurred, stating that the Institute has inventoried all biomedical equipment, facility infrastructure, and automated information systems and is in the process of inventorying research-specific software and databases. The Institute has either completed or is in the process of completing the year 2000 compliance assessment and plan to upgrade or replace noncompliant hardware or software by December 31, 1998.

- 2. Document whether each research project is year 2000 compliant and report the results through the Institute's Chief Information Officer.**

**Management Comments.** The Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) concurred, stating that the Army Medical Research Institute of Infectious Diseases has inventoried all personal computers and biomedical instruments and will ensure year 2000 compliance by December 31, 1998.

- 3. Establish procedures that require Institute personnel to notify the Army Medical Research Acquisition Activity of the need to include the year 2000 clause in future contract efforts.**

**Management Comments.** The Deputy Assistant Secretary of the Army (Military Personnel Management and Equal Opportunity Policy) concurred, stating that the Army Medical Research Institute of Infectious Diseases' policy requires the Logistics Division to ensure that a year 2000 compliance clause is contained of all date-related information technology item acquisitions.

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## **Part II - Additional Information**

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## 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 year 2000 computing challenge. For a listing of audit projects addressing this issue, see the year 2000 webpage on IGnet at <<http://www.ignet.gov>>.

### Scope

**Work Performed.** We reviewed and evaluated the progress of the Institute in resolving the year 2000 computing issue. We evaluated the year 2000 efforts of The Institute; compared the actions with the Army Action Plan; conducted discussions with technical, business, and contracting officials; and evaluated year 2000 documentation where available.

**DoD-Wide Corporate Level Government Performance and Results Act Goals.** In response to the Government Performance and Results Act, 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 warfighting 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 satisfies customer information needs.
- **Goal:** Upgrade technology base. (ITM-2.3)

**General Accounting Office High-Risk Area.** In its identification of risk areas, the General Accounting Office has specifically designated risk in resolution of the year 2000 problem as high. This report provides coverage of that problem and of the overall Information Management and Technology high-risk area.

## Methodology

**Audit Type, Dates, and Standards.** We performed this economy and efficiency audit during July 1998, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We did not rely on computer-processed data or statistical sampling procedures 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.** We did not review the management control program related to the overall audit objective because DoD recognizes the year 2000 issue as a material management control weakness area in the FY 1997 Annual Statement of Assurance.

## Summary of Prior Coverage

The General Accounting Office, the Inspector General, DoD, and the Army Audit Agency have conducted multiple reviews related to year 2000 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>. However, there were no prior reviews related to year 2000 at the Institute.

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## **Appendix B. Report Distribution**

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

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  Director, Defense Logistics Studies Information Exchange  
Under Secretary of Defense (Comptroller)  
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Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)  
  Year 2000 Oversight and Contingency Planning Office  
Assistant Secretary of Defense (Health Affairs)  
Assistant Secretary of Defense (Public Affairs)

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Assistant Secretary of the Army (Manpower and Reserve Affairs)  
The Surgeon General  
Commander, Army Medical Command  
  Commander, Army Medical Research and Materiel Command  
    Commander, Army Medical Research Institute of Infectious Diseases  
    Director, Army Medical Research Acquisition Activity  
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  
Inspector General, Marine Corps  
Auditor General, Department of the Navy

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

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Inspector General, Defense Information Systems Agency  
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Director, National Security Agency  
Inspector General, National Security Agency

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

Chairman and ranking minority member of each of the following congressional  
committees and subcommittees:

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 National Security, Committee on Appropriations  
House Committee on Government Reform and Oversight  
House Subcommittee on Government Management, Information, and Technology,  
Committee on Government Reform and Oversight  
House Subcommittee on National Security, International Affairs, and Criminal Justice,  
Committee on Government Reform and Oversight  
House Committee on National Security

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## **Part III - Management Comments**

# Department of the Army Comments



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
MANPOWER AND RESERVE AFFAIRS  
111 ARMY PENTAGON  
WASHINGTON DC 20310-0111


October 23, 1998

MEMORANDUM FOR THE U.S. ARMY AUDIT AGENCY (USAAA), ATTN:  
(SAAG-PMO-L), PENTAGON ROOM 1E515

SUBJECT: Draft DODIG Audit Report, Project No. 8AB-0030.03, 16 September  
1998, Army Medical Research Institute of Infectious Diseases (USAMRIID)  
Preparation for the Year 2000

Reference your memorandum of 28 September 1998, subject as above.  
Enclosed is the response to your request for review and action on the above draft  
report. The response includes recommended corrections and clarifications to the  
text of the report. The response also includes a status report and projected  
completion of USAMRIID's Y2K compliance project, and addresses the  
recommendations for corrective action. We believe it addresses each finding  
satisfactorily.

Point of contact for this action is COL Christie Smith (697-1482)

  
John P. McLaurin, III  
Deputy Assistant Secretary  
(Military Personnel Management  
and Equal Opportunity Policy)

Enclosure

Printed on  Recycled Paper

Department of the Army Comments



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
OFFICE OF THE SURGEON GENERAL  
5100 LEESBURG PIKE  
FALLS CHURCH VA 22041-3258

18 OCT 1998

DASG-ZXA

MEMORANDUM THRU DIRECTOR OF THE ARMY STAFF

*AWM, LR, DODCC* 20 OCT 1998

FOR THE ASSISTANT SECRETARY OF THE ARMY (MANPOWER AND  
RESERVE AFFAIRS)

SUBJECT: Draft Audit Report on Army Medical Research Institute of Infectious  
Diseases Preparation for Year 2000 (Project No. 8AB-0030.03), 16 Sept 1998

- 1 Attached is the command response to the subject draft report on Army  
Medical Research Institute of Infectious Diseases Preparation for Year 2000
- 2 We support the U.S Army Medical Research and Materiel Command's  
concurrence with the findings, recommendations and their command responses  
for corrective actions. We believe their ongoing and future planned corrective  
actions meet the intent of the DODIG's recommendations.
- 3 The POC for this memorandum is Carmine Mendicino, DSN 761-3248 or  
Commercial (703) 681-3248.

FOR THE SURGEON GENERAL:

Atch

*Richard L. Ursone*  
RICHARD L. URSONE  
Colonel, MS  
Executive Officer

Department of the Army Comments

MCMR-IR (MCMR-UIA/13 Oct 98) 1<sup>st</sup> End Mr. Weimert/eas/DSN 343-7440

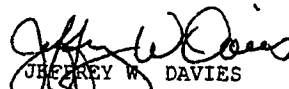
SUBJECT: Management Comments on Draft Audit Report on Army Medical Research Institute of Infectious Diseases Preparation for Year 2000 (Project No. 8AB-0030.03)

Commanding General, U.S. Army Medical Research and Materiel Command, ATTN: MCMR-IR, 504 Scott Street, Fort Detrick, MD 21702-5012 15 OCT 98

FOR Office of the Surgeon General, ATTN: OTSG-IR, Room 636, 5109 Leesburg Pike, Falls Church, VA 22041

The U.S. Army Medical Research and Materiel Command concurs with the comments of the U.S. Army Medical Research Institute of Infectious Diseases.

FOR THE COMMANDER:

  
JEFFREY W. DAVIES  
COLONEL, MS  
Chief of Staff



DEPARTMENT OF THE ARMY  
US ARMY MEDICAL RESEARCH INSTITUTE OF INFECTIOUS DISEASES  
1425 PORTER STREET  
FORT DETRICK MARYLAND 21702-5011

REPLY TO  
ATTENTION OF:

MCMR-UIA

13 October 1998

*[Handwritten signature]*  
MEMORANDUM THRU Commander, U.S. Army Medical Research Institute  
of Infectious Diseases, ATTN: MCMR-UIZ-A,  
1425 Porter Street, Fort Detrick, MD  
21702-5011

FOR U.S. Army Medical Research and Materiel Command,  
ATTN: MCMR-IR (Mr. Weimert), 504 Scott Street,  
Fort Detrick, MD 21702-5012

SUBJECT: Management Comments on Draft Audit Report on Army  
Medical Research Institute of Infectious Diseases Preparation  
for Year 2000 (Project No. 8AB-0030.03), 16 September 98

#### Introduction

These comments consist of two sections. Section one contains corrections and clarifications to the text of the 16 Sep 98 Draft Report. Section two contains USAMRIID management comments on the Draft Report. The comments give an update of USAMRIID's Y2K project and also address the Recommendations for Corrective Action in the Draft Report.

#### Section One

The following text from the Draft Report is given with suggested corrections and clarifications. In this section, words in *italic* have been added to replace the words deleted by strikethrough.

Part I - Audit Results. The Institute's Year 2000 Strategy, paragraph two, p5.

"The Institute has divided the year 2000 process into three areas: biomedical equipment, facility infrastructure, and ~~biomedical equipment~~ *automated information systems*." [Words in *italic* replace strikethrough words.] The biomedical equipment encompasses scanners, magnetic resonance imaging systems, patient monitoring systems, and other similar systems. Examples of the Institute's biomedical equipment include electronic

Revised

## Department of the Army Comments

Final Report  
Reference

### MCMR-UIA

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Revised

microscopes, autoclaves, incubators, centrifuges, and analyzers. The facility infrastructure includes heating, ventilation, and air conditioning systems; sprinkler systems, facsimile machines; and elevator systems. The ~~biomedical equipment-automated information systems~~ consist of automated information and information technology systems, such as personal computers, servers, and communications hardware and software. The Institute designated a year 2000 focal point in each of the three areas that is responsible for determining year 2000 compliance."

Part I - Audit Results. Inventory and Assessment, paragraphs one and two, p6.

Revised

"The Institute's assessment phase was more inclusive than the assessment phase defined in the Army Action Plan. Items listed in the biomedical equipment, facility infrastructure, and ~~biometric equipment automated information systems~~ inventories are generally commercial-off-the-shelf. The Institute's assessment phase not only requires the inventory and assessment, but also requires fixing or replacing noncompliant systems.

Revised

**Inventory.** Each of the Institute's three areas, biomedical equipment, facility infrastructure, and ~~biometric equipment automated information systems~~, maintained separate inventories. As of July 1998, the biomedical inventory listed 1,971 systems, which the Institute classified as low risk because the equipment does not have any serious impact on patient safety. The facility manager maintains an inventory of all facility infrastructure equipment. The ~~biometric automated information systems~~ inventory lists computer equipment, software, and embedded systems, which the Chief Information Officer considers are essential to the Institute's mission. The ~~biometric automated information systems~~ inventory does not include ~~researcher-purchased computer hardware, software, and databases research-specific software.~~

Revised

Revised

Revised

Part I - Audit Results. Inventory and assessment, paragraphs five through eight, p7.

Revised

Revised

**"Biometric Automated Information Systems Assessment.** At the time of the audit, the Institute had not completed its year 2000 compliance assessment of the equipment or ~~applicable~~ application software. Although the Institute has identified some of the noncompliant mission-essential software, it has contracted one

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programmer to fix only some of the software modules. However, additional year of computer programmer effort is needed to fix the remaining software modules for which funding was not available. ~~Fort Detrick is upgrading the local area network to be year 2000 compliant by December 31, 1998. All components of a new local area network being installed in USAMRIID are year 2000 compliant. The LAN upgrade is scheduled to be completed by December 31, 1998.~~

Revised  
Revised

**Test Plans.** The Institute has not developed a test plan, as required by the Army Medical Command Guidance. The Institute plans to test the biomedical and ~~biometric~~ automated information systems computer hardware ~~and software~~ using Army Medical Command-approved software. However, not all systems can be tested with the year 2000 testing software, and the Institute has no formal test plan for the new physical security system or research databases.

Revised  
Revised

**Cost Plans.** The Institute has not developed a cost plan for expenditures related to the year 2000 problem, as required by Army Medical Command guidance. The Institute lacks funds to upgrade or replace noncompliant biomedical equipment, facility infrastructure, and ~~biometric equipment~~ automated information systems for FY 1998 and FY 1999. The Institute should identify the funds needed to meet the December 31, 1998 deadline. The Institute identified funding requirements of about \$100,000 for mission-essential software and about \$40,000 for biomedical equipment; however, it did not develop additional funding requirements because it has not completed its inventory and assessments.

Revised

**Contingency Plans.** The Institute has not developed contingency plans because it believes that it will be year 2000 compliant by December 31, 1998. The Institute began planning the ~~biometric~~ automated information systems and facility infrastructure inventory assessment in July 1998, which was not sufficient time to complete the inventory assessment and fix or replace noncompliant systems prior to this audit. The Institute has identified noncompliant, mission-essential software that cannot be fixed or replaced by December 31, 1998. Also, the Institute has identified funding shortages and expects additional funding shortages as it assesses the inventory. These issues and the approaching century makes contingency planning even more critical for those systems not assessed for the year 2000

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impact, especially when the Institute does not have a  
comprehensive inventory."

Part I - Audit Results. Recommendations for Corrective Action,  
p8.

"1. Complete the year 2000 assessment of the ~~biometric equipment~~  
*automated information systems* and facility infrastructure  
inventories to include:"

### Section Two

This section contains of an update of USAMRIID's Y2K project as  
of 9 October, 1998. It also addresses the Recommendations for  
Corrective Action in the Draft Report.

#### Y2K Update

Significant events that have occurred in USAMRIID's Y2K project  
since the July 1998 visit of the DoD IG survey team are as  
follows:

#### 1. Biomedical Equipment

- a. All biomedical equipment has been inventoried.
- b. 90% of the biomedical equipment is Y2K compliant.
- c. Estimated cost to modify or replace non-compliant equipment is  
\$52,873.
- d. Plan is on schedule for 100% compliance by 31 December 1998.

#### 2. Facility Infrastructure

- a. In September 1998 a complete inventory of all facility  
infrastructure items was conducted. The contractor who  
performed the inventory is in the process of preparing a  
detailed summary of compliance for each item inventoried. A  
plan for certification will then be implemented for any non-  
compliant item.
- b. The building automation monitoring and alarm system has been  
upgraded (hardware and software) and is now Y2K compliant.
- c. The building security system is Y2K compliant.
- d. The backup power system is Y2K compliant.
- e. The elevators are either Y2K compliant or not date sensitive.

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3. Automated Information Systems

a. Personal computers.

- 100% of personal computers have been inventoried.
- 98% of personal computers are Y2K compliant.
- Estimated cost to replace non-compliant personal computers is \$60,150.
- Plan is on schedule for 100% compliance by 31 December 1998.

b. Local area network.

- 100% of all local area network devices in USAMRIID's new LAN are Y2K compliant.
- Installation of the new LAN is scheduled for completion by 31 December 1998.

c. Application software.

- E-mail: FY98 year-end money at MEDCOM was identified to fund the conversion of USAMRIID's non-compliant cc:Mail to Microsoft Exchange, which is Y2K compliant. This is part of an overall MEDCOM upgrade. Implementation will depend on USAMISSA purchasing and installing MS Exchange, and on the training of USAMRIID Exchange administrators. Project Y2K compliant e-mail by August 1999.
- The USAMRIID Special Immunization System operates on the Fort Detrick DOIM mainframe computer system. The mainframe and operating system are Y2K compliant. The application software (database and query software) is projected by USAMISSA to be upgraded to Y2K compliance by 31 December 1998.
- Conversion of application programs to Y2K compliant programs will require an additional two programmer man-years. In September 1998, FY99 funds were budgeted by HQ, USAMRMC for these contract programmers for USAMRIID. Reprogramming and testing is scheduled for completion by 30 September 1999.
- In September 1998 a plan was initiated to inventory all research-specific software in USAMRIID. The inventory will be completed by 30 October 1998, with plans to upgrade/replace non-compliant software by 31 December 1998.

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#### Recommendations for Corrective Action

The Draft Report Recommendations for Corrective Action are now reviewed in light of the current status of Y2K efforts at USAMRIID:

Recommendation 1a: Adding research-specific computer hardware, software and databases.

Corrective Action 1a: All computer hardware has been inventoried for Y2K compliance, with replacement of non-compliant systems scheduled by 31 December 1998. Research-specific software, including databases, is now being inventoried, with plans to upgrade/replace non-compliant software by 31 December 1998.

Recommendation 1b: Developing cost plans to fix non-compliant year 2000 systems and equipment.

Corrective Action 1b: Costs have been determined for replacement of non-compliant biomedical equipment and personal computers, and for re-programming of non-compliant software applications. FY99 funds are budgeted for these costs.

Recommendation 1c: Requesting funding assistance from higher command.

Corrective Action 1c: Funds have been requested and budgeted from MEDCOM (FY98 year-end) and HQ, USAMRMC (FY99) to cover a significant portion of projected Y2K compliance expenses.

Recommendation 1d: Developing test plans for mission-essential systems and databases.

Corrective Action 1d: As mission-essential systems and databases are upgraded/replaced during the next year, each will be specifically tested to insure that all date information is stored and referenced using an eight digit date field (two digits for century) to insure Y2K compliance.

Recommendation 1e: Developing contingency plans for non-compliant hardware or software.

Corrective Action 1e: Plans are to obtain 100% compliance for all hardware and software systems by upgrades, replacements and

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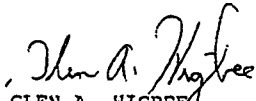
reprogramming. A back-up plan for any system exhibiting a previously undetected problem in Jan 2000 will be to roll the century date back to 1999 in that system until the problem is analyzed and corrected.

Recommendation 2: Document whether each research project is year 2000 compliant and report the results through the Institute's Chief Information Officer.

Corrective Action 2: All personal computers and biomedical instruments have been inventoried and will be Y2K compliant by 31 December 1998. Completion of a current survey of research-specific software throughout the Institute will permit any non-compliant issues to be addressed and resolved by 31 December 1998.

Recommendation 3: Establish procedures that require Institute personnel to notify the Army Medical Research Acquisition Activity of the need to include the year 2000 clause in future contract efforts.

Corrective Action 3: It is the policy and practice of Logistics Division, USAMRIID, to insure that a year 2000 compliance clause is contained in the minimum essential characteristics of all acquisitions involving date-related information technology items (hardware, software, services).



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