

GAO

Report to the Chairman, Subcommittee
on Defense, Committee on
Appropriations, House of
Representatives

January 1990

ADP BUDGET

Potential Reductions to the Department of Defense's Budget Request



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Information Management and
Technology Division

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January 10, 1990

The Honorable John P. Murtha
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

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On October 19, 1988, your predecessor asked us to review the Department of Defense fiscal year 1990 budget request for automated data processing (ADP) resources to assist the Subcommittee in its budget deliberations. This report contains information on budget requests from the Departments of the Air Force, Army, and Navy and the Defense Communications Agency (DCA) that relate to the World Wide Military Command and Control System. It also contains information on four automation projects managed by the Air Force. This information provides background and budget data and, where appropriate, identifies funds requested for fiscal year 1990 that could be eliminated from the Air Force's budget request. We have provided separate reports to you containing similar information on selected automation projects managed by the Departments of the Army¹ and the Navy.²

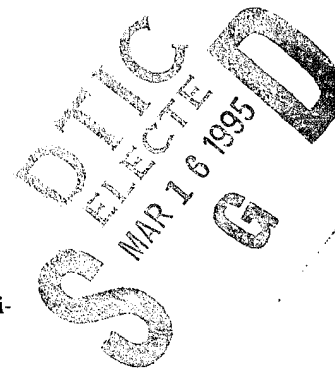
The following paragraphs summarize information presented in appendixes I-V, respectively.

- In March 1989, responsibility for the joint World Wide Military Command and Control System Information System modernization program was transferred from the Air Force to DCA. However, Air Force, Army, Navy, and DCA fiscal year 1990 budget requests for activities related to that program were justified based on the previous program structure. Requirements for the restructured joint program will not be finalized before mid-January 1990.

Therefore, the Committee may wish to appropriate fiscal year 1990 funds for this program with the provision that the funds cannot be obligated until after (1) DCA's plans for the system have been approved by the Defense Acquisition Board and the Secretary of Defense, (2) the

¹ADP Budget: Potential Reductions to the Department of the Army's Budget Request (GAO/IMTEC-89-69BR, Sept. 18, 1989).

²ADP Budget: Potential Reductions to the Department of the Navy's Budget Request (GAO/IMTEC-89-75BR, Sept. 18, 1989).



results of the Board's review have been reported to the Congress, and (3) products proposed by the services have been reviewed and certified by DCA as being compatible with joint requirements.

Additionally, the Committee may wish to reduce \$24.8 million from the services' fiscal year 1990 procurement budget requests—\$10.6 million from the Air Force, \$10.5 million from the Army, and \$3.7 million from the Navy. These funds are for local area network equipment that the services may not be ready to procure for the program because requirements for this equipment may not be defined until late fiscal year 1990.

Finally, we identified \$20.35 million in unobligated funds that had been appropriated in prior fiscal years to the Army, Navy, Air Force, and DCA for equipment and software. Therefore, the Committee may wish to reduce the fiscal year 1990 budget requests accordingly, and direct the services to use available unobligated funds to meet fiscal year 1990 needs.

- According to the program element manager for the Military Airlift Command's automatic communication processor program, a new standard that applies to the processors will be implemented before further production. After our audit work was completed, the Air Force said that it plans to complete engineering work needed to produce compliant processor units in December 1989, several months ahead of schedule. It then plans to begin ordering additional units. The Committee may wish to appropriate the \$10.813 million in fiscal year 1990 procurement funds that was requested for processors with the provision that these funds can only be obligated to purchase units that comply with the standard.
- The House and Senate Committee of Conference on Appropriations, in its Department of Defense fiscal year 1989 report, required that the Defense Acquisition Board review the Integrated Tactical Warning and Attack Assessment program in fiscal year 1989 and required that review results be reported to the Congress. In October 1989, after completion of our audit work, the Deputy Secretary of Defense issued a memorandum authorizing continuation of this program. Also, an Air Force official provided a copy of a report to the Congress setting forth the results of the Defense Acquisition Board's review. We did not evaluate the contents of the memorandum or the report to the Congress as part of this assignment.
- After renegotiation of a data base development contract, the Reliability and Maintainability Information System's estimated program costs may increase to over \$100 million, making the system eligible for review by the Major Automated Information System Review Council (MAISRC). Therefore, the Committee may wish to direct the Air Force not to enter

any new development contracts for the system until the project has received MAISRC approval to proceed. In addition, the system may not provide sufficient dollar savings to cover the expected increased acquisition cost. Therefore, the Committee also may wish to direct the Air Force to provide a full funding profile of the system based on a revised economic analysis.

- The Air Force did not include funds from the Depot Maintenance Air Force Industrial Fund Asset Capitalization Program in its exhibits for the Depot Maintenance Management Information System, as required by Defense budget guidance. The Committee may wish to direct the Air Force to include these funds in its budget exhibits for the system.

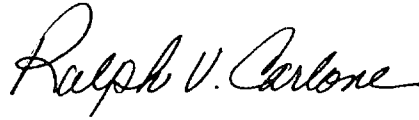
In addition, the Air Force fiscal year 1989 budget for this system included an estimated \$2 million in Asset Capitalization Program funds that will be available to offset fiscal year 1990 needs.

Our work was conducted between February and July 1989. As requested, we did not obtain official agency comments on this report. However, we discussed the report's contents with Department of Defense Inspector General officials, Office of the Comptroller of the Department of Defense officials, and program officials and have incorporated their views where appropriate. In general, the program officials agreed with our facts, but disagreed that their budget request should be affected by those facts. Details regarding the objectives, scope, and methodology of our work are described in appendix VI.

We are sending copies of this report to the Chairmen, House and Senate Committees on Appropriations; Chairmen, House and Senate Committees on Armed Services; Chairman, House Committee on Government Operations; Chairman, Senate Committee on Governmental Affairs; the Secretaries of Defense and the Air Force; and the Director, Office of Management and Budget. We also will make copies available to others upon request.

This report was prepared under the direction of Samuel W. Bowlin, Director, Defense and Security Information Systems, who can be reached at (202) 275-4649. Other major contributors are listed in appendix VII.

Sincerely yours,

A handwritten signature in cursive script that reads "Ralph V. Carlone".

Ralph V. Carlone
Assistant Comptroller General

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Abbreviations

ADP	Automatic Data Processing
DCA	Defense Communications Agency
DMMIS	Depot Maintenance Management Information System
GAO	General Accounting Office
IMTEC	Information Management and Technology Division
MAC	Military Airlift Command
MAISRC	Major Automated Information System Review Council
NORAD	North American Aerospace Defense Command
REMIS	Reliability and Maintainability Information System
TW/AA	Integrated Tactical Warning and Attack Assessment
WAM	World Wide Military Command and Control System Automatic Data Processing Modernization
WIS	World Wide Military Command and Control System Information System

World Wide Military Command and Control System Automatic Data Processing Modernization Program

Background

The World Wide Military Command and Control System Information System (wis) modernization program consisted of a joint program to meet computer hardware and software requirements that are needed throughout the Department of Defense to support the operational activities of U.S. military forces. In addition, the system included service-level programs in the Air Force, Army, and Navy to meet service-unique requirements, as well as requirements for those programs to interface with the joint program.

On March 6, 1989, the Deputy Secretary of Defense terminated the joint wis program, which was managed by the Air Force, and transferred responsibility for a new joint program, called the World Wide Military Command and Control System Automatic Data Processing Modernization (WAM) program, to the Defense Communications Agency (DCA). The Deputy Secretary also directed that DCA hold a WAM program review with the Defense Acquisition Board. Under DCA management, the joint program objectives remain the same, but the approach to meeting those objectives has changed. For example, while the Air Force had planned to develop a unique local area network to be used throughout the Department, DCA plans to authorize the services to purchase off-the-shelf, local area networks that are compatible with the overall system design.

DCA plans to act as a test center and clearinghouse for WAM hardware and software. Specifically, the agency will allow no equipment to be connected or software to be used with WAM before DCA authorizes it and certifies that it is compatible with WAM, including certifying the compatibility of commercially-available local area networks and automated message handling systems.

According to the WAM program manager, DCA initially plans to devote most of its efforts to designing, developing, and implementing the Joint Operational Planning and Execution System—the primary computer application software for WAM. DCA first must obtain review and approval of its WAM design and implementation plans from the Defense Acquisition Board. Then, based on the results of this review, design changes and clarifications may be needed before proceeding with further development and acquisition of WAM and related service-unique programs. As agreed-upon requirements are established, DCA will issue implementation guidance to users.

DCA's fiscal year 1989 activities were financed through funds transferred from the Air Force when its responsibility for the joint wis program ended. For fiscal year 1990, DCA requested \$51.2 million in

research, development, test, and evaluation funds and \$5.8 million in operation and maintenance funds for WAM (program element 0303154K). Fiscal year 1990 procurement budget requests for service-unique interface requirements are included in P-1 item 146, Air Force wis, \$14.8 million; P-1 item 140, Army wis, \$31.9 million; and P-1 item 300B, Navy wis, \$3.7 million.

Areas of Concern

The budget requests for WAM-related activities were justified based on the wis program requirements. Requirements for the restructured joint program will not be finalized until after the Defense Acquisition Board's review of WAM, which will not occur before mid-January 1990. Therefore, the Committee may wish to appropriate fiscal year 1990 funds for WAM-related activities in DCA, as well as in each service, with the provision that the funds cannot be obligated until after (1) DCA's plans for the system have been approved by the Defense Acquisition Board and the Secretary of Defense, (2) the results of the Board's review have been reported to the Congress, and (3) WAM-related products proposed by the services have been reviewed and certified by DCA.

We also identified potential reductions to fiscal year 1990 WAM-related budget requests. These are summarized below with details provided in the following sections of this appendix.

- The Committee may wish to cut \$24.8 million from the services' fiscal year 1990 procurement budget requests—\$10.6 million from the Air Force, \$10.5 million from the Army, and \$3.7 million from the Navy. These funds are for local area network equipment; however, requirements for this equipment may not be defined until late fiscal year 1990.
- Fiscal year 1987, 1988, and 1989 funds—\$18.44 million in procurement funds and \$1.44 million in research, development, test, and evaluation funds—that were appropriated to the Army, Navy, and Air Force for wis workstations remain unobligated and should be available to offset fiscal year 1990 needs. Also, the Air Force was appropriated \$468,000 in fiscal year 1989 research, development, test, and evaluation funds that remain unobligated and should be available to offset fiscal year 1990 needs.

Funding for Local Area Networks May Not Be Needed Until Fiscal Year 1991

The services' fiscal year 1990 procurement budget requests include funds for local area network equipment, such as modems, cables, and software. To ensure that these items will meet joint program requirements, DCA plans to develop specifications for the services to use in acquiring equipment and software. We do not believe that the guidance on local area networks will be available in time for the services and DCA to complete testing and purchase equipment in fiscal year 1990. Therefore, the Committee may wish to cut the fiscal year 1990 budget by the amounts requested to purchase this equipment.

Appropriations From Prior Years Could Be Used to Meet Fiscal Year 1990 Requirements

The services were appropriated funds in prior fiscal years for WIS workstations for which WAM workstation requirements have not been developed. The services had planned to use the funds as shown in table I.1. Because responsibility for the program has been transferred to DCA, that agency will be defining WAM workstation specifications so that the services can ensure that workstations being acquired are properly sized to accommodate the full complement of information processing requirements. DCA guidance on this matter is subject to a successful Joint Operational Planning and Execution System design review, which has been deferred until at least mid-January 1990. Upon successful completion of this review, DCA plans to give the services guidance on the types of workstations needed to perform all functions of the system.

Table I.1: Budget Authority Associated With Workstation Acquisitions

Service (Account)	Budget Authority		
	Fiscal Year		
	1987	1988	1989
Air Force (Research, Development, Test, and Evaluation program element 0303152F)	\$0	\$1.005	\$435
Air Force (Procurement)	3.200	0	11.000
Army WIS (Procurement)	0	0	2.940
Navy WIS (Procurement)	0	0	1.300
Total	\$3.200	\$1.005	\$15.675

In addition, \$468,000 that the Air Force received in fiscal year 1989 research, development, test, and evaluation funds for software development remain unobligated. The contract that the Air Force had planned to use to obligate these funds was terminated when responsibility for

**Appendix I
World Wide Military Command and Control
System Automatic Data Processing
Modernization Program**

the joint program was transferred to DCA. Although an Air Force program official said that the software requirement is still valid, the software will not be developed until after the Air Force has received WAM program guidance from DCA, guidance which is not yet defined or approved.

Military Airlift Command's Automatic Communication Processors

Background

During fiscal year 1988, the Air Force authorized production of 200 automatic communication processor units, which automatically select the strongest channel for radio communication links. In September 1988, after this contract was awarded, the Department of Defense issued an automatic link establishment standard (Military Standard 188-141A—Inter-operability and Performance Standards for Medium and High Frequency Radio Equipment) to promote inter-operability among radio systems across the military services. In December 1988, the Assistant Secretary of Defense for Command, Control, Communications and Intelligence directed that the automatic link establishment standard be incorporated into existing and future high frequency radio programs. The Assistant Secretary also limited the Military Airlift Command's (MAC) annual production of noncompliant processor units and specified that procurement of noncompliant units could not proceed beyond fiscal year 1991.

MAC obtained about \$8.4 million in fiscal year 1989 procurement funds primarily to perform the engineering work needed to modify the processor units so that they comply with the automatic link establishment standard. The MAC Program Element manager for the automatic communication processor program said that the automatic link establishment standard will be implemented before further production of processor units. Also, the Air Force does not plan to use 200 noncompliant units, which were produced before the standard was issued, until after the units have been modified to comply with the standard. The Air Force plans to modify these units by February 1991.

The fiscal year 1990 budget request includes \$10.813 million in Other Procurement, Air Force funds (P-1 item 147) that MAC plans to use to acquire an additional 332 processor units that comply with the standard.

Area of Concern

The Air Force had planned to award a contract modification in May 1989 for the engineering work that would make the processor units comply with the standard, with the work scheduled for completion by June 1990. However, this schedule was delayed due to funding problems and the contract modification was not awarded until August 1989. Adding this contract award delay to the schedule for completing the engineering work would delay completion of the engineering work until late in fiscal year 1990. However, during our November 1989 exit briefing with the Air Force, we were told that the engineering work is now scheduled for completion in December 1989 and that the Air Force plans to begin

Appendix II
Military Airlift Command's Automatic
Communication Processors

ordering compliant units. Therefore, the Committee may wish to appropriate the \$10.813 million in fiscal year 1990 procurement funds that were requested for processors with the provision that these funds can only be obligated to purchase units that comply with the standard, especially since noncompliant units will not be used until they are modified to be compliant.

NORAD Modernization Programs at Cheyenne Mountain

Background

The North American Aerospace Defense Command (NORAD) is responsible for warning United States and Canadian leaders when North America is under air, missile, or space attack. NORAD's mission is supported by an Integrated Tactical Warning and Attack Assessment (TW/AA) system. During the early 1980s, the Air Force initiated five separate programs to modernize selected TW/AA subsystems that support communications and data processing requirements at NORAD's Cheyenne Mountain complex. These programs are

- the Communications System Segment Replacement, which will process and control most internal and external communications;
- the Space Defense Operations Center IV program, which will process data for space defense and space surveillance activities;
- the Command Center Processing and Display System Replacement, which will process and display ballistic missile warning information;
- the Survivable Communications Integration System, which will provide for the use of multiple survivable communication media between sensors and command centers; and
- the Granite Sentry program, which will process and display common data for use by all air defense, command post, battle staff, and weather support activities.

The Air Force's fiscal year 1990 budget request included \$117.6 million in research, development, test, and evaluation funds for these five programs (program element 0102310F). The Air Force estimates that the total cost for the programs will be over \$1.3 billion.

During the past year, we reported that the Air Force should reassess the requirement for an immediate Communications System Segment Replacement,¹ correct technical design deficiencies in the Space Defense Operations Center IV program,² and improve management of the five TW/AA modernization programs.³ On the basis of our work, the House and Senate Committee of Conference on Appropriations, in its Department of Defense fiscal year 1989 report, required the Defense Acquisition Board to review the integrated program in fiscal year 1989 and required that review results be reported to the Congress. In October

¹Attack Warning: NORAD's Communication System Segment Replacement Program Should Be Reassessed (GAO/IMTEC-89-1, Nov. 30, 1988).

²Space Defense: Management and Technical Problems Delay Operations Center Acquisition (GAO/IMTEC-89-18, Apr. 20, 1989).

³Attack Warning: Better Management Required To Resolve NORAD Integration Deficiencies (GAO/IMTEC-89-26, July 7, 1989).

1989, after completion of our audit work, the Deputy Secretary of Defense issued a memorandum authorizing continuation of an integrated TW/AA modernization program proposed by the Air Force. Also, an Air Force official provided a copy of a report to the Congress setting forth the results of the Defense Acquisition Board's review. We did not evaluate the contents of the memorandum or the report to the Congress as part of this assignment.

Reliability and Maintainability Information System

Background

The Air Force is developing the Reliability and Maintainability Information System (REMIS) to improve the readiness and sustainability of Air Force weapon systems and equipment. REMIS is to be the primary Air Force source for base, depot, and contractor maintenance and inspection information, replace 28 operational maintenance information systems, and interface with the Core Automated Maintenance System, the Standard Base Supply System, and the Technology Repair Centers. As originally planned, REMIS was to be contractor developed, operated, and maintained over a 12-year period at a total life cycle cost of \$115 million.

As of March 1989, the Air Force estimated that \$86.1 million would be needed to concurrently develop four REMIS subsystems and fully implement REMIS at all six planned sites by January 1990. However, the REMIS project's development contract is currently being renegotiated to include a centralized data base, rather than a distributed data base architecture. A REMIS project official estimated that contract changes will increase this program cost estimate by about \$20 million and delay the project's schedule about 5 years.

Areas of Concern

The estimated \$20 million increase would make total program costs exceed \$100 million, the threshold above which systems are subject to Office of the Secretary of Defense management oversight through its Major Automated Information System Review Council (MAISRC). The Office of the Secretary of Defense has delegated REMIS to the Air Force for oversight reviews. A REMIS project official said that the Air Force will wait to see what the actual contract costs will be before assessing the need for MAISRC review and approvals. Specifically, the REMIS deputy program manager stated that once the first subsystem becomes operational, its cost might be deducted from the program, leaving total program costs under the \$100 million MAISRC threshold. However, these costs are part of the total REMIS program costs and should remain in program cost estimates. The Committee may wish to direct the Air Force not to enter into any new development contracts for REMIS until the project has received MAISRC approval to proceed.

In addition, the Committee may wish to direct the Air Force to prepare a revised economic analysis based on the change to a centralized data base architecture, and based on an Air Force Audit Agency report. Specifically, in a 1988 Air Force Audit Agency review of the Command's supporting documentation for its \$5 billion economic benefits estimate for the REMIS system, the audit agency could substantiate only \$100,000 of

the Command's estimate. The agency also identified an additional \$102.2 million in expected benefits and calculated that costs of the project would exceed the benefits by a projected net present value of \$2.8 million. This projection was based on an assumption that full benefits would begin accruing earlier than they are now expected.

Depot Maintenance Management Information System

Background

The Air Force is developing the Depot Maintenance Management Information System (DMMIS) to modernize and upgrade the current maintenance functions of repairing and modifying Air Force weapon systems, subassemblies, or repairable components. This will be accomplished by integrating maintenance management at the Air Force Logistics Command headquarters, five air logistics centers, and the Aerospace Guidance and Metrology Center. In 1984, the Air Force estimated the DMMIS system acquisition cost at \$85 million and expected full system operation by February 1989. DMMIS was to replace 43 maintenance systems. The Air Force now expects DMMIS to replace 25 systems at a cost of \$242.4 million. The system, based on an off-the-shelf commercially available manufacturing resource planning system, is to be implemented in three phases. The first phase, designed to improve the management of maintenance inventory centers, was completed in July 1988. The second and third phases, designed to modernize the entire Air Force depot maintenance system, are scheduled to be fully operational by September 1993. The Air Force expects to use DMMIS until 2003.

Areas of Concern

The Air Force has not fully disclosed to the Congress the expected acquisition costs for the DMMIS project. In the fiscal year 1990/fiscal year 1991 President's budget, the Air Force reported \$26.8 million in actual and estimated obligations for the DMMIS project in fiscal years 1989 through 1993. However, in its December 1988 quarterly progress report, the Air Force Logistics Command estimated that \$187.5 million in program acquisition funding would be required for the same period. Responding to our inquiries about these two significantly different estimates, DMMIS project officials explained that the funds shown in the President's budget did not include funding to be provided under the Depot Maintenance Air Force Industrial Fund Asset Capitalization Program. Overall, about \$228 million of DMMIS's \$242.4 million total acquisition costs are to be funded under the Asset Capitalization Program. The Department of Defense 7110-1M Budget Guidance Manual directs that all funds, including industrial funds for commercial contract services, be reported in the President's budget exhibits by fiscal year and by source. Given this guidance, the Committee may wish to direct the Air Force to revise its fiscal year 1990/fiscal year 1991 President's budget exhibits to fully disclose all actual and estimated obligations for DMMIS.

In addition, the Air Force fiscal year 1989 budget included an estimated \$2 million for DMMIS under the Asset Capitalization Program that will be available for other needs. In fiscal year 1989, the DMMIS project office set aside \$3.2 million for site-unique requirements. However, in response to

Appendix V
Depot Maintenance Management
Information System

our inquiries, the DMMIS program director indicated that the program office has been unable to identify any unique requirements. Of the \$3.2 million total, \$1.2 million was used to fund other requirements. Thus, \$2 million of these funds could be considered excess to the DMMIS fiscal year 1989 funding requirement.

Objectives, Scope, and Methodology

Our objectives were to review the Department of the Air Force's fiscal year 1990 budget request for selected general-purpose automated information systems and to provide information on these systems to the Subcommittee to assist it in determining whether the systems should be funded in the amounts requested. We also included in our review World Wide Military Command and Control System programs that are managed by the Air Force, the Army, the Navy, and the Defense Communications Agency. We performed our work in the Washington, D.C. area; at the Electronics System Division, Hanscom Air Force Base, Bedford, Massachusetts; at the Military Airlift Command, Scott Air Force Base, Illinois; and at Wright-Patterson Air Force Base in Dayton, Ohio, between February and July 1989.

To obtain budget request information, we examined the Procurement Programs (P-1) Department of Defense Budget For Fiscal Years 1990 and 1991, and the Department of the Air Force's procurement backup book, which contains information on equipment, contracts, and schedules (including exhibits P-40 and P-22). We also examined the Department of the Air Force's information technology systems budget (which contains exhibits 43A-E) and the Air Force's research, development, test, and evaluation descriptive summaries. We also examined program review financial forecast and funding status reports, which show unobligated funds, program plans and schedules, cost performance reports, and contract funds status reports to obtain information on the programs' current schedules and funding status. Also, we met with program officials to discuss information in these documents, and to clarify budget and program information.

We discussed issues covered in this report with officials from the Department of Defense Office of the Inspector General, the Office of the Comptroller of the Department of Defense, and the responsible program offices and incorporated their comments where appropriate. As requested, we did not obtain official agency comments on this report. We conducted our work in accordance with generally accepted government auditing standards.

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