

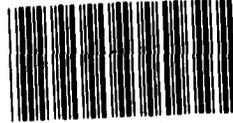


UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

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INFORMATION MANAGEMENT AND  
TECHNOLOGY DIVISION

B-208596



AUGUST 16, 1983

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The Honorable Les Aspin  
House of Representatives

Dear Mr. Aspin:

Subject: DOD's Automated Telecommunications  
Centers Reduce the Impact of Message  
Volume on Staffing (GAO/IMTEC-83-2)

As requested in your letter of July 20, 1982 (enc. I), we have followed up on our December 4, 1975, report (LCD-76-107) regarding the need for electronically transmitting narrative messages at military telecommunications centers. In that report we estimated that the number of narrative messages sent from the six California military installations we visited could have been reduced by almost 19 percent and that a savings of almost \$150,000 annually could be realized by decreasing staff who operated the telecommunications equipment. Also, we projected that the Department of Defense (DOD) could save over \$1.8 million to about \$15.7 million annually if from 5 to 40 percent of the messages sent electronically from all military telecommunications centers were mailed.

During our followup review, we visited the same six California military installations included in the earlier review: Oakland Army Base; Presidio of San Francisco; Naval Air Station, Alameda; Naval Air Station, Moffett Field; Travis Air Force Base; and McClellan Air Force Base. We also interviewed officials and reviewed records at those installations. We performed our audit in accordance with generally accepted Government auditing standards.

BACKGROUND

The Automatic Digital Network (AUTODIN) was established for transmission, control, and storage of digital messages. AUTODIN--an integral part of the worldwide Defense Communications Systems--is a computer controlled, electronic, fully secured data communications system composed of about 15 switching centers and 1,300 terminals located at various military installations. Both narrative messages and data tapes are sent and received via AUTODIN.

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At the time of our 1975 study, DOD, Army, Navy, and Air Force regulations required that (1) electrical communications be limited to essential official business which could not be handled effectively by some other means and (2) mail or courier service be the primary means for communicating routine matters unless economy or timeliness dictated otherwise. However, many narrative messages were being sent over AUTODIN that did not require electrical transmission. This was a problem because narrative messages required extensive amounts of staff time to process. For example, staff were required to (1) type the message on a teletype machine which produced a paper tape; (2) proofread the message; and (3) insert the paper tape into the AUTODIN terminal for transmission.

We recommended that the Secretary of Defense (1) require message releasers to become familiar with their responsibilities and emphasize the need for communications economy to the message releasers and (2) review, evaluate, and modify the regulations to give message releasers the latitude to evaluate the need for electronic transmission. DOD responded to our recommendations by implementing programs to provide message releasers with guidance on their responsibilities and revising its regulations to give releasers greater latitude in evaluating the need for electronic transmission.

#### IMPROVEMENTS HAVE BEEN MADE

A number of changes were made at the six military telecommunications centers since our earlier review. Center equipment has been upgraded at all six installations so that little manual effort is required for message transmission through AUTODIN. Also, the centers have provided guidelines to message releasers on message preparation. Consequently, even though some messages could be mailed, reductions in AUTODIN message traffic would not likely translate into further staff reductions beyond those which resulted from center automation.

#### Equipment and procedures used now

Since our 1975 report, DOD has upgraded the equipment in its telecommunications centers. Five of the six now use fully automated equipment. When properly formatted, messages require very little intervention by center staff to process. However, the Presidio of San Francisco uses semiautomated equipment which requires some manual effort.

At the telecommunications centers where automated systems are now in place, messages are accepted for transmission from originators on an over-the-counter basis. These messages, already prepared in an optical character reader (OCR) format acceptable to the AUTODIN system, are machine read and transmitted to the receiver via computers. Magnetic tapes of messages transmitted through the system are maintained by each center for 30 days.

Manual intervention occurs at these telecommunications centers if the message is improperly formatted and cannot be read by the OCR equipment. Telecommunications center staff must then correct the problem in the case of minor errors or return the message to the originator when major errors are found. While the message centers generally did not maintain data regarding the cost of this effort, the operations chief at one installation estimated that error correction efforts cost about 10 hours of staff time daily.

The Presidio of San Francisco also uses newer equipment than during our earlier review; however, this equipment is only semiautomated and does involve some manual effort. The messages are received in OCR format. However, the OCR machine generates a paper tape which then must be manually fed into the automated transmission system.

Customer education/quality control efforts are being made

All of the message centers we visited provide some form of customer (message originator) guidance regarding the required OCR message format. In addition, the two Army centers now provide a quality control review team. The Presidio maintains a message quality review team that once each quarter reviews a sample of outgoing narrative messages to determine if the messages were concise and if they could have been sent by mail. The review results are presented at a telecommunications control board meeting held quarterly. Appropriate message originators are then notified of any needed corrective actions. The Oakland Army Base also maintains a quality review team which meets monthly to determine, among other things, if messages are properly prepared and if they are concise. However, unlike the Presidio team that reviews a sample of messages to determine problem areas, the Oakland quality review team relies on message center staff to identify and act on problems.

MESSAGE VOLUME CHANGES MAY NOT AFFECT STAFF LEVELS

At the communications centers visited, we asked officials whether a 5-percent change in message traffic would affect staff levels. Because the telecommunications equipment is automated, officials said message volume increases or decreases of 5 percent do not require staffing changes. We also found that much greater increases in message volume do not require added staff. For example, message traffic at the Naval Air Station, Alameda, increases significantly when aircraft carriers come into port. During April 1982, two aircraft carriers were in port--one for 29 days and one for 12 days. Over 41,000 messages were sent and received during that month, or about 47 percent more than the 28,196 messages sent and received in November 1982; yet staffing levels and customer service remained the same.

At the Presidio of San Francisco, the officer in charge provided us with the following data showing how staff levels have been reduced by over 50 percent since our 1974 study, while message volume more than tripled.

Presidio of San Francisco  
Message Traffic  
and Staffing Reductions  
November 1974 and 1982

	<u>November</u>	
	<u>1974</u>	<u>1982</u>
Messages sent	1,356	2,973
Messages received	<u>3,229</u>	<u>14,166</u>
Total	<u>4,585</u>	<u>17,139</u>
 Staff on board	 37	 16
Ratio of messages to staff	124 to 1	1071 to 1

According to this official, the volume increase was due to a consolidation of two centers that took place after 1974.

At another center, we were provided data that showed a reduction of six staff members due to the installation of OCR equipment. This information showed a net annual savings of over \$119,000 in staff salaries for the third and each subsequent year after the cost of the equipment and maintenance are considered. Salaries were calculated at \$24,000 per year for each employee with no adjustment for inflation.

Savings from Installation of  
Automated Equipment

First year

Salary reduction (6 staff positions)	\$144,000
Less equipment cost	<u>148,224</u>
Added cost	<u>\$ 4,224</u>

Second year

Salary reduction (6 staff positions)	\$144,000
Less equipment and maintenance cost	<u>28,848</u>
Net savings	<u>\$115,152</u>

Third and subsequent years

Salary reduction (6 staff positions)	\$144,000
Less annual maintenance cost	<u>24,624</u>
Net savings	<u>\$119,376</u>

COMMUNICATIONS CENTER CONSOLIDATION

In another study related to communications center operations <sup>1/</sup> we concluded, among other things, that the Air Force should consolidate five communications centers in operation at Travis Air Force Base into two centers. We reported that two centers could meet the needs of the entire base and estimated that an annual savings of \$312,200 could result. The base has since reduced the number of centers to three, and officials told us that another center, the base command center, will close down during fiscal year 1983. That decision would conform with our earlier recommendations.

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In summary, our review of telecommunications centers at six military installations showed that the equipment has been upgraded since our 1975 study--five of the centers are fully automated and one center is semiautomated. This equipment requires very little intervention by center staff for message transmission. Information from two of the centers we visited showed that the equipment upgrades have resulted in staff reductions. We found that staffing levels may not be affected by message volume increases or decreases of 5 percent or more because of the automated equipment. Therefore, even though some messages which could be mailed are possibly being sent electronically, reductions in message volume may not translate into further staff reductions.

<sup>1/</sup>"Need To Consolidate Responsibility For Automatic Digital Network (AUTODIN) Terminals" (B-169857, July 17, 1974).

We are sending a copy of this report to the Secretary of Defense. We are suggesting that he consider establishing a quality review team and associated procedures at other military installations similar to the ones now in place at the Presidio of San Francisco. Such an approach has the potential for monitoring the system and for emphasizing to all message originators the need to limit electronic message transmission to official business which could not be handled effectively by some other means.

Sincerely yours,

  
Warren G. Reed  
Director

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July 20, 1982

The Honorable Charles A. Bowsher  
Comptroller General  
General Accounting Office  
Washington, D. C. 20548

Dear Sir:

In 1975, the GAO conducted a survey of the message distribution function of military telecommunications centers, finding that a large proportion of the messages transmitted electronically were of no urgency and could have been sent by mail. For example, McClellan Air Force Base was found sending urgent messages electronically that involved travel not scheduled to take place for seven months.

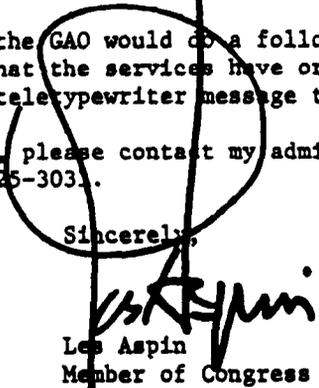
The results, published as LCD-76-107, concluded that as much as 46.6 percent of the teletypewriter traffic could have gone by mail.

It has now been more than six years since that survey was completed. DoD officials have told my staff that the problem has all been taken care of. But I have some doubts about that.

I would appreciate it if the GAO would do a follow-up on LCD-76-107 to determine just what the services have or have not done to eliminate unnecessary teletypewriter message traffic.

If you have any questions, please contact my administrative assistant, Warren Nelson, on 225-3031.

Sincerely,

  
Les Aspin  
Member of Congress

LA:vns