



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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The Honorable Edward P. Boland
Chairman, Subcommittee on
HUD-Independent Agencies
Committee on Appropriations
House of Representatives



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Dear Mr. Chairman:

In response to your January 1976 request, we reviewed the justification by the Veterans Administration (VA) for establishing four regional computer centers for its planned Target System--a communications-based system which would modernize VA's benefit claims processing. We briefed your office on the results of our review on March 8 and were requested to provide you with a report. The enclosure contains details of our findings.

Our review included an examination of a position paper prepared by VA in January 1976 and other documents describing its reasons for establishing the four centers, an examination of documents supporting procurement for the system, and discussions with VA personnel. We also considered information obtained by the Surveys and Investigations Staff of the House Committee on Appropriations in a review of this area.

On January 5, 1976, the General Services Administration issued a request for proposals to prospective vendors for automatic data processing systems for the Target System computer centers, terminal systems for VA regional offices, and related software and services. The request for proposals prescribed five sites: four regional centers to be located in Philadelphia, San Francisco, Atlanta, and Chicago and a central system in Chicago. When the request for proposals was issued, VA did not have a sufficient basis for concluding that four regional computer centers was the most cost effective configuration.

On March 31, 1976, VA proposed to the Subcommittee that three regional computer centers be established for the Target System, and on June 15, 1976, the General Services Administration issued an amended request for proposals to vendors prescribing three regional centers.

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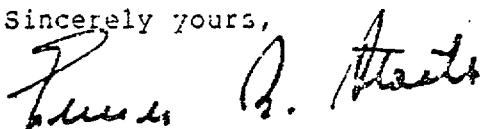
We are recommending to the Administrator of Veterans Affairs that before further action is taken by prospective vendors to develop equipment proposals, VA reappraise its workload and backup requirements to assure that equipment procured for the system will be consistent with VA's projected requirements.

The workload estimate in VA's study, which calls for less than four regional centers, is overstated. It is much greater than VA's long-range budget forecast of workload for the programs the system will support. The overstated workload also includes a backup processing requirement which VA has not supported.

As requested, formal comments were not obtained from VA. However, the contents of this report have been discussed informally with VA officials, and they have agreed to reappraise the workload and backup requirements.

As requested, we are sending copies of the report to the Administrator of Veterans Affairs, other congressional committees, Members of Congress, and other interested parties.

Sincerely yours,



Comptroller General
of the United States

Enclosure

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INFORMATION RELATING TO
THE JUSTIFICATION BY VA TO
ESTABLISH FOUR REGIONAL COMPUTER CENTERS
FOR ITS PLANNED TARGET SYSTEM

BACKGROUND

The Department of Veterans Benefits of the Veterans Administration administers nonmedical benefits and services through 59 major field stations. These benefits and services include compensation for service-connected disabilities; pensions for aged, needy, and unemployable veterans; vocational rehabilitation, education, and training assistance; and information and assistance through personalized contacts. In fiscal year 1976, VA will pay about \$8 billion in compensation and pensions to 4.9 million veterans and survivors and about \$6 billion in education and training benefits to 3.4 million veterans.

The present compensation, pension, and education benefits delivery system was designed and installed in the late 1950s and is primarily a manual system with automation of only the claims payment process.

VA is developing a new computer system, called the Target System, to modernize its benefit claims processing system and to improve services to veterans.

Benefits expected from the new system include significant reductions in claims development time, more timely delivery of initial benefit checks into the hands of veterans, faster responses to veterans' inquiries, and major savings from workload reductions in the regional offices as a result of more efficient workflow and procedures.

VA estimates total development costs of the Target System, including acquisition of data processing and communications equipment, at \$81.7 million.

Operational features of Target System

The Target System will use computers in regional computer centers to provide data entry and automated claims processing capabilities to the VA regional offices. The system will have a central computer facility for maintenance of master records, centralized reporting and accounting functions, and generation of payment notices to the Department of Treasury which prints the benefit checks.

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The key operational features of the Target System are:

- Computerized processing and control of claims in the regional offices, including automatic calculation of benefit awards, control of pending claims, and workload reporting.
- Immediate response to veteran inquiries concerning (1) status of claims in process, (2) status and amounts of award checks, and (3) information in the master record.
- Automated printing of awards, acknowledgements, and other routine letters.
- A reporting ability which will permit ready access to management and control statistics.

Terminals at 56 regional offices will be connected to the regional computers by telecommunications lines. Data will be transmitted from the regional offices to the regional computers which will maintain on-line work-in-process control files on pending claims within each region. These files will be updated automatically as a byproduct of claims processing. The regional offices will also be able to obtain information concerning pending claims and information from the centralized master files. The regional computers will also link the regional offices to a claimant locator system at Austin, Texas.

Pilot program

In September 1974 VA began a pilot test of the Target System processing concepts in Philadelphia and Baltimore. Terminals at the Philadelphia VA center and the Baltimore regional office are linked with a data processing center in Philadelphia, which serves as a regional computer center. The Philadelphia center is also linked with the computerized claimant locator system in Austin and the centralized master files of the benefit payment system at Hines, Illinois. In the summer of 1975 the pilot test was expanded to three additional regional offices--New York, Washington, and Los Angeles.

RATIONALE FOR FOUR REGIONAL COMPUTER CENTERS

VA originally considered establishing eight computer centers supporting each of eight proposed Federal regional centers throughout the country to comply with the Government's

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intention to streamline the field structure and operating procedures of Federal agencies. However, variations in workloads among the proposed centers and the expense of maintaining eight computer centers prompted VA to consider consolidating the work at fewer computer centers.

VA's rationale for establishing four regional computer centers was summarized in a position paper prepared in January 1976 after issuance of the request for proposals. The conclusions in the position paper were based on the results of a sizing study made for VA by the Federal Computer Performance Evaluation and Simulation Center and reported on in January 1975. Sizing studies are used for estimating the size and cost of systems available from various vendors to handle the required volume and type of processing. The studies use computer programs that compare simulated processing requirements against models of selected computers. These models contain hardware and software characteristics of available vendors' equipment.

In addition to the study results, VA considered data obtained after completion of the study which indicated that the projected workload for the proposed Target System would increase substantially. These factors formed the basis of the request for proposals for four regional computer centers.

VA believed that four computer centers were the optimum in contrast to one or two centers, primarily because (1) more vendors would be able to compete for the system and (2) four centers would provide superior reliability which would result in the lowest overall costs.

Cost estimates

VA estimates of comparative annual costs for the various site configurations over the anticipated 8-year life of the system were as follows:

	Number of regional computer centers		
	1	2	4
Automatic data processing equipment	\$1,998,447	\$2,799,313	\$3,127,310
Construction and operating costs	2,064,609	2,704,772	3,168,052
Communications	333,420	389,772	298,944
Downtime	<u>3,630,480</u>	<u>2,420,320</u>	-
Total cost	<u>\$8,026,956</u>	<u>\$8,314,177</u>	<u>\$6,594,306</u>

Assumptions made by VA

Analysis of the cost estimates indicated that VA made certain assumptions regarding equipment and downtime costs which were not supported and which required more indepth study.

Unsupported comparative equipment costs

The Federal Simulation Center sizing study considered four and eight centers. No studies were made for less than four centers. Therefore, VA approximated costs and performance for equipment for one and two centers by extrapolating the results of the study for four centers and adding a factor for a substantial increase in workload. VA stated in its position paper that, without sizing studies for each center's configuration, it would be impossible to determine whether the workload could be processed by the equipment selected for one and two centers.

Downtime costs overstated

VA assumed that backup facilities in both the two- and four-site configurations would permit some or all of the workload to be distributed among the remaining sites if one site should fail. If one computer center of a two-site configuration became inoperable, the remaining center could process its normal workload and about one-third of the workload of regional offices serviced by the inoperable center. VA assumed that the four-site configuration would have sufficient capacity in excess of its routine requirements so that, should one center fail, each of the remaining centers could process one-third of the workload of the inoperable center with no decline in service to the regional offices.

VA assigned cost values to inoperable time for one- and two-center configurations on the basis of the following assumptions:

- Each center would be inoperable about 2-1/4 percent of the time that it would be available to the regional offices, or about 48 hours annually.
- If there were only one center in the Target System, about 7,000 regional office personnel would be unproductive during the hours the center was inoperable because there would be no alternative center available to process its workload. These personnel would be required to work overtime to make up the time lost.

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--In a two-center configuration, while one site is inoperable for a 48-hour period, there is sufficient capacity in the remaining site to process one-third of the inoperable site's workload. Accordingly, a 48-hour inoperable period at one site would leave about 3,500 regional office personnel unproductive during two-thirds of the period, or 32 hours. Overtime work would be required to make up the time lost.

Annual personnel costs associated with these inoperable periods were assigned by VA as follows:

<u>Number of centers</u>	<u>Unproductive time</u>	<u>Overtime</u>	<u>Total</u>
1	\$2,150,400	\$1,480,080	\$3,630,480
2	1,433,600	986,720	2,420,320

Our analysis indicates that VA has significantly overstated the impact of inoperable computer centers on regional office personnel.

The 7,000 employees referred to by VA constitute principally adjudication personnel (4,125) and veteran contact representatives (2,410). The latter provide assistance to the public by responding to inquiries received by telephone, letter, or personal interviews. The Surveys and Investigations Staff of the House Committee on Appropriations questioned VA Philadelphia regional office personnel about inquiries received from veterans. They said that most inquiries were answered without reference to any documents; that is, the contact representatives' general knowledge of VA programs was usually sufficient to respond to the inquiries. The Philadelphia regional office analyzed telephone inquiries for 1 day at the request of the investigations staff and the analysis showed that, of 463 telephone inquiries related to the benefit claims programs, 292 or 60 percent were answered directly by the contact representatives without reference to documents. Our discussions with VA personnel indicated that requirements for reference to documents vary with the time of the month. For example, at the beginning of the month, a large proportion of inquiries are concerned with the status of checks due veterans. However, under the current benefit claims system, contact representatives make notes on inquiries which cannot be readily answered until appropriate records are located and reviewed and respond by subsequent calls or letters to the veterans. It appears reasonable that in the Target System, contact representatives could function in a similar manner during the period that a computer center is inoperable.

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Adjudication personnel would be more severely affected by an inoperable computer center than would contact representatives because they would rely on the terminals for development of claims. However, VA officials said that adjudicators work on several claims daily, and it would be possible for them to prepare information needed for the next processing step on each claim, should an inoperable period occur.

The severity of impact of an inoperable center on adjudication personnel would depend on the type, frequency, and duration of these occurrences. These factors were not addressed by VA which assumed that adjudication personnel would not be able to perform their work if they could not use an alternative center, regardless of the duration of a breakdown.

SIZING STUDY FOR LESS THAN
FOUR REGIONAL COMPUTER CENTERS

In response to inquiries from the House Appropriations Committee regarding VA's justification for establishing four regional computer centers for the Target System, VA contracted with COMTEN, Inc., on January 5, 1976, for a sizing study to estimate probable cost and performance of equipment in one, two, three, and four regional computer centers. COMTEN's report to VA in March 1976, which considered costs and processing requirements, concluded that either two or three centers would be the best configuration.

Differences in COMTEN and
Federal Simulation Center studies

After the Federal Simulation Center study in 1974, VA incorporated a number of changes into the guidelines furnished to COMTEN for its study. The changes included:

- Long-range projections of Target System workload provided by VA to the Federal Simulation Center for use in its study were understated. Experience from the time the projections were originally made in 1974 through 1975 showed that actual workload exceeded projected workload. Accordingly, VA increased its original projections by 40 percent.
- VA determined that the computer centers would require a less complex data base management system than originally anticipated which, in turn, would reduce the overall equipment capacity required for regional computer centers. The data base management system facilitates the access to common data files by multiple users and programs.

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- Some of the major equipment manufacturers introduced improved computer systems.
- VA eliminated the requirement (prescribed in the guidelines for the Federal Simulation Center study) that the computer centers support contiguous regional offices, thereby permitting more evenly balanced workloads.

With the exception of the workload increase, the changes appear appropriate.

Results of COMTEN simulation studies

COMTEN simulated and analyzed the processing capabilities of computer configurations of five prospective vendors. COMTEN concluded that for the four-, three-, and two-center configurations all vendor systems simulated were capable of processing the workload satisfactorily. However, COMTEN indicated that the consolidation of regional centers into one site would be impractical because only one vendor's system could perform satisfactorily.

Associated purchase prices of equipment which COMTEN concluded could perform satisfactorily at the regional computer sites were as follows:

<u>Number of sites</u>	<u>Range of purchase prices</u>
(millions)	
4	\$15.5 to \$26.3
3	12.0 to 20.2
2	12.0 to 25.9
1	14.6

These price ranges represent total costs of equipment at all sites from the lowest potential bidders to the highest.

In the four- and three-site consolidations, we omitted the estimated price of one vendor's equipment from the range of purchase prices because the cost of that vendor's equipment was too high to be competitive.

PROJECTED WORKLOAD AND BACKUP REQUIREMENTS
FOR TARGET SYSTEM ARE QUESTIONABLE

VA projected a rising long-range workload factor which was used in the COMTEN study that was not consistent with

the VA long-range budget forecasts of workload for the compensation, pension, and education programs which the Target System will support. The projected workload factor will be used by competing vendors when they demonstrate the processing capabilities of their equipment. This could result in vendors' proposing and VA's acquiring more processing capacity than needed for the proposed Target System.

Workload projections for Target System

The original workload projections for the Target System were developed in April 1974 and were based on an analysis of benefit claims workload experienced during fiscal years 1969 through 1973 and on forecasts of benefit claims workload for 1974 through 1980. The workload was expressed in terms of benefit claims end products, which represent units of VA regional office work associated with the processing of benefit claims. The workload projections, which assumed that fiscal year 1976 would represent the largest annual workload for the Target System, were used by the Federal Simulation Center in its study as a basis for predicting

- the number of regional computer centers and the size of the computers required to process the benefit claims workload and
- the number of terminals needed to support VA regional offices.

After the Federal Simulation Center study, VA reappraised the compensation, pension, and education benefit claims workload projections. VA compared actual benefit claims end products for fiscal year 1974 through mid-fiscal year 1976 with the forecasts for those years and found that the forecasts were understated. Therefore, VA increased the workload projections by 40 percent for the COMTEN study.

VA computed the 40-percent increase by extending the trend of actual benefit claims workload for fiscal years 1967 through 1974 linearly to fiscal year 1980. The extension resulted in a theoretical national workload of about 16.4 million benefit claims end products by fiscal year 1980 as contrasted with the workload of 11.6 million benefit claims end products input to the Federal Simulation Center study.

Although it may have been appropriate to adjust the estimates upward for the COMTEN study to compensate for the underestimates, we believe that the method used by VA to compute the increase was faulty. The results of the linear extension

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of the actual workload trend into the future are not consistent with VA long-range budget forecasts of workload for the compensation, pension, and education programs and overcompensate for previous underestimates.

VA's long-range budget forecasts of benefit claims workload are in concert with the provisions of current legislation. Public Law 93-337, effective July 10, 1974, provided for a 10-year delimiting period for using educational benefits. On May 31, 1976, approximately 3.7 million veterans were no longer eligible for education benefits because their delimiting period expired. In view of this, VA forecasts a continuing decrease in education workload from 1976 through 1980. Budget forecasts indicate that the benefit claims workload will decline from a high of about 14 million end products in fiscal year 1976 to about 11.2 million in fiscal year 1980, primarily because of the anticipated decrease in the education workload.

Furthermore, VA's budget forecasts indicate that in fiscal year 1978, when the Target System is scheduled to be operational, the workload will approximate 12.1 million end products.

VA's budget forecasts have been underestimated in the past primarily because of such factors as unanticipated legislative changes and economic downturns. It appears logical, therefore, that some margin of expansion capability should be provided to insure sufficient system capacity. However, to avoid the possibility of excessive capacity, VA should relate the Target System workload to the long range budget forecasts for benefit claims, with an allowance, if necessary, that is more in line with previous underestimates.

Unsupported backup requirements for the
Target System

VA's consideration of the number of regional computer centers and the equipment needed was based, in part, on the presumption that there must be sufficient reliability in the regional systems to preclude all risks of system breakdown. Therefore, VA proposed to provide sufficient equipment capacity in the regional computer centers to insure that an inoperable center would have little effect on processing and inquiry activities in all VA regional offices. We believe that such backup is not necessary.

VA provided additional data processing and communications equipment components to minimize the possibility of inoperable regional centers resulting from equipment failure.

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ENCLOSURE

We recognize that, despite additional equipment, breakdowns can still occur and VA's estimate that a center will not be available to the regional offices about 2 percent of the time that regional offices are on-line may be valid. However, the additional measures proposed by VA to insure that inoperable centers do not adversely affect operations of the VA regional offices are questionable.

VA proposed in its four-center configuration to copy the files of all regional computer centers and place one-third of a center's files in each of the other three centers. VA further proposed to provide sufficient excess capacity in the processing units of each regional computer system to process one-third of the workload of an inoperable center. Thus if a center became inoperable, users of that center would be switched over to the center which has its backup files. This type of backup would eliminate the possibility of substantive idle time in the regional offices.

On page 4 we discussed the impact on productive time in the regional offices from inoperable computer centers. Our observations indicate that the extensive backup provisions proposed by VA are not necessary. Backup should be handled on a priority basis to accommodate VA's most urgent needs. A VA official said that the six largest regional offices would be the most vulnerable to inoperable regional computer centers and that, more than likely, adjudication personnel would be required to work overtime to catch up on the work. These offices handle about 23.5 percent of the national benefit claims workload.

VA officials told us that sizing for 16.4 million end products for three centers would allow backup of 50 percent of VA regional office workloads in the event of an inoperable regional computer center. However, the need for this allowance is not supported by an indepth study of an inoperable computer center's impact on regional office operations.

VA's projected Target System workload is considerably higher than its long-range budget forecasts. In addition, the backup requirements included in the overstated workload cannot be supported.

The request for proposals requires vendors to demonstrate the capabilities of their proposed equipment using software to process a representative sample of target system workload. If such demonstrations are based on an overstated workload, vendors could propose more costly equipment than VA needs.

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Recommendation to the Administrator
of Veterans Affairs

We recommend that before further action is taken by prospective vendors to develop equipment proposals, the Administrator direct the Department of Veterans Benefits to reappraise the workload and backup requirements proposed for the Target System to provide vendors with more realistic estimates of the workload required for Target System processing.

Agency comments

On June 15, 1976, we informally discussed the contents of this report with VA officials and they agreed to reappraise the workload and backup requirements.

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