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COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548

B-198405

MAY 7, 1980

The Honorable Ray Roberts
Chairman, Committee on
Veterans Affairs *CSUD*
House of Representatives



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Dear Mr. Chairman:

Subject: [Review of VA's Revised Workload
Study for its Austin, Texas,
Data Processing Facility]
(FGMSD-80-44)

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On January 7, 1980, you requested that we review a December 14, 1979, Veterans Administration (VA) study which recommended that VA be authorized to use an IBM 370/168 computer for the Beneficiary Identification and Records Locator System (BIRLS) at the Austin, Texas, Data Processing Center (Austin Center) rather than an IBM 370/158 as previously contemplated. BIRLS is VA's master file for about 35 million veterans.

You requested that, in light of new workload projections contained in the VA study, we reevaluate the position we took in an earlier report to the Chairman of the House Government Operations Committee that an IBM 370/158 would be adequate (FGMSD-79-27, May 23, 1979). On February 11, 1980, we briefed your office on the results of our reevaluation and are providing this letter as confirmation of that report. *1502*

Our analysis of VA's figures indicated that VA is currently projecting an increase of over 50 percent in the daily peak workload of 9 months ago. During this review we verified that the workload on which this projection is based is being generated. In view of this increased workload, a computer larger than an IBM 370/158 apparently will be needed under present operating and management procedures to support the peak BIRLS workload at the Austin Center.

However, in the time allotted for this reevaluation, we were unable to determine the validity of the projected daily peak workload increase and whether the projection increased because of the addition of a new and complex system, operational inefficiencies such as bad scheduling, or real growth resulting from newly available on-line systems.

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SCOPE

In the performance of this review we examined the study and other documents provided by VA. We visited the Washington and Philadelphia regional offices and discussed workflow procedures and use of the Target/BIRLS systems at those locations. We also visited the Austin and Philadelphia computer centers and discussed the operational use and transaction workload for Target/BIRLS.

BACKGROUND

On October 6, 1978, the Chairman of the House Government Operations Committee requested we review a Veterans Administration proposal to acquire an IBM 370/168 multiprocessor system to handle increased requirements at the Austin, Texas, data processing center. According to VA, the major cause of the increased requirements was VA's new Target System.

When completed in mid-1980 the Target System will have a network of about 2,500 terminals supported by dual Honeywell 6600 computers at the Philadelphia and Los Angeles Centers and two sets of dual 6600's at the Hines, Illinois, Center. Target will provide on-line data entry and claims processing capabilities to the 58 VA regional offices that administer veterans programs nationwide.

BIRLS was not initially designed as an element of the Target System. However, since many of the functions performed by the Target System are dependent upon BIRLS' master data base of 35 million veterans, BIRLS is a critical part of the Target network. BIRLS is operated on a dedicated IBM 360/65 computer.

Target is being completed in scheduled phases. As more regional offices are provided with increased on-line capabilities, the Target/BIRLS workload increases. Because the system provides on-line support to VA regional offices, this growth is occurring during the prime-day shift.

In March 1979 the VA provided data which indicated a shortfall of about 6,292 transactions at the peak hour. To eliminate the projected shortfall, we proposed in our May 23, 1979, report several austerity actions and an augmentation of the computer capacity within the range of an IBM 370/158 for the Austin Center. VA agreed with the augmentation and two of the austerity measures. The net impact of our proposals and the augmentation would have eliminated the shortfall. (See table at the top of next page.)

Projections of Target/BIRLS Workload

	<u>Maximum number of Target/BIRLS transactions at the peak hour</u>	<u>Maximum hourly capacity of the Austin Center</u>	<u>Target/BIRLS transaction shortfall at the peak hour</u>
VA March 1979 projections without austerity measures using the 360/65	12,692	6,400	-6,292
GAO May 1979 projections with austerity measures	<u>a/9,170</u>	<u>b/11,400</u>	+2,230

a/Reduce the peak transaction workload by routing certain Target/BIRLS transactions to the Target System data base at Chicago.

b/Increase transaction capacity by augmenting with a 370/158 and holding Target/BIRLS updates for later processing.

Subsequently, at an October 2, 1979, meeting with the House Committee on Veterans Affairs, VA representatives changed their position stating that new BIRLS workload projections indicated that an IBM 370/158 augmentation would not provide the needed capacity at the Austin Center.

The Committee instructed VA to study this problem further and provide its findings to the Committee. The study showed that during the 9 months between March 31 and December 14, 1979, the projected Target/BIRLS transactions at the peak hour had increased over 20 percent from 12,692 to 15,465. This figure is well above the capacity of the IBM 370/158.

In his letter transmitting the study to the Committee, the Administrator stated that the earlier figures provided us, which were the basis for the recommendation of an IBM 370/158, were generally underestimated by VA. He stated that the latest study was based on more extensive information including actual transaction patterns.

He also expressed concern that insufficient capacity for BIRLS would (1) impair performance in the regional offices, (2) have an adverse impact on the ability to achieve personnel savings attributable to Target, and (3) preclude expanded service to other users such as the Departments of Medicine and Surgery and of Memorial Affairs.

Our review showed that the workload has in fact increased substantially and that additional capacity is needed. However, in the time allotted for this review, we were unable to determine how much capacity is needed because we did not have time to assess the reliability of the workload projections or the impact that effort to reduce the peak BIRLS workload would have on those projections.

BECAUSE OF WIDE VARIATIONS IN WORKLOAD PROJECTIONS COMPUTER CAPACITY REQUIREMENTS FOR TARGET/BIRLS CANNOT BE ESTIMATED WITH CONFIDENCE

The workload projections which VA has prepared have varied widely. For example, in January 1978 VA projected the Target/BIRLS workload based on calendar 1977 data. In March 1979, after analyzing our proposed austerity measures and using daily transaction figures from 1978 as the base, VA revised the figures downward by about 24 percent. Nine months later VA performed another analysis and, as shown below, revised the March figure upward by 58 percent.

<u>Data provided by VA</u>	<u>Peak daily workload transactions</u>	<u>Change</u>
Jan. 24, 1978--based on 1977 data	80,117	
Mar. 31, 1979--based on 1978 data with austerity measures recommended by us	61,137	-24%
Dec. 14, 1979--based on 1979 data without austerity measures recommended by us	96,699	+58%

Because of these variations it is not possible to estimate with any confidence what size computer should be installed at the Austin computer center.

Although VA is unable to explain why the projected Target/BIRLS workload has increased so rapidly, we see the two factors discussed below as contributing to the problem.

First, operator carelessness at the terminals, design problems, or improper operating procedures rather than changing requirements could be contributing to these wide variations in workload projections. To develop a reliable basis

for its workload projections, a wider, more extensive analysis than we could make of the regional offices' use of Target/BIRLS is needed.

We are aware that VA performed a detailed study in connection with the planning for Target, but VA has not analyzed the regional office actual use of that system in sufficient detail to establish reliable projections. For example, VA plans provide for increasing on-line capabilities by 2,100 terminals between November 30, 1979, and June 30, 1980. If the workload generated by these additions is similar to that of the three regions which now have those functions, an IBM 370/158 will not be adequate. To identify and validate that workload, a study of the work flow procedures within the regional offices would be needed. We estimate that it would take at least 6 months to make such a study.

Secondly, VA has not adequately analyzed the impact on Target/BIRLS of new administrative procedures instituted by VA's Department of Veterans Benefits. For example:

- Finance officers are now required to determine whether a veteran who is applying for a VA home loan has a defaulted education loan. This new procedure requires the finance officer to reference the veteran's claims folder through BIRLS. Department officials estimate that in the 10 months between April 1979 and January 1980, 210,000 BIRLS transactions have been generated as a result of this administrative procedure. VA states that it has recouped over \$5,000,000 from veterans who had defaulted on education loans.
- Adjudication officers processing applications for veterans applying for education benefits are now required to access the BIRLS file to determine if a Veterans Assistance Discharge System record exists. This record, which was created for all veterans discharged from the service after September 1973, contains data that can be used to establish a veteran's eligibility for benefits and deter some veterans from obtaining benefits fraudulently. Although Department of Veterans Benefits officials could not identify the number of BIRLS transactions that have been generated by the new procedure, they believe it is large.

VA officials were unable to tell us what percentage of the increase in the Target/BIRLS transactions can be attributed to the new administrative procedures. Thus, these procedures apparently were instituted without analyzing their impact on the current BIRLS system.

In discussing the increased use of Target/BIRLS with regional office officials, one official suggested that because the system is beginning to demonstrate its effectiveness--particularly in its fast response (5 to 10 seconds)--more people are using it than VA expected. Also, we found that in the Philadelphia regional data processing center alone, 33 percent of the workload has been shifted from the slower General Services Administration Advanced Records System to the faster Target/BIRLS. 1/ However, VA has not analyzed whether this trend will continue or what its impact will be.

In spite of these wide variations in workload projections, we did not observe any efforts on VA's part to validate the projection method used or to identify the causes of the increases.

VA management has made no effort
to reduce the peak Target/BIRLS workload

The major problem confronting the Austin Center is that the projected peak hourly load of 15,465 transactions for Target/BIRLS will exceed the capacity of the IBM 370/158 we proposed. However, VA has made no effort to reduce that peak hourly rate.

Nine months have passed since we made our recommendations to eliminate the projected transaction shortfall, but none of the recommendations has been implemented even though VA agreed that two of them would increase capacity and reduce the prime-shift workload. And according to VA officials, their Target/BIRLS workload has steadily increased.

VA officials said that implementing our recommendations was unnecessary since it appeared probable that they would receive the IBM 370/168 currently used at VA's Hines data processing center. Because of this expectation, we do not believe VA has seriously approached the problem of identifying or controlling the transaction rate on Target/BIRLS.

The requirement for a mean 5-second response has made the Target terminals very popular and according to some officials is probably one of the main reasons for the dramatic growth of the Target/BIRLS projected workload.

1/Using the Advanced Records System, VA stations have access to BIRLS in two modes: Fast Response, where the response is returned within 5 minutes; and Routine, where the response is returned before the beginning of the next business day.

However, we believe that an additional factor management should evaluate is the present unconstrained access to Target/BIRLS by all authorized users. For example, VA employees such as those in the telephone unit deal directly with veterans either over the phone or across a desk. Clearly these employees should have access to Target/BIRLS and its 5-second response. On the other hand, those who do not work directly with veterans should be able to avoid using Target/ BIRLS during peak hours.

In visits to the Washington and Philadelphia regional offices, we found that less than 15 percent of the Target/BIRLS transactions were initiated by employees in direct contact with veterans. Yet access to Target/BIRLS appears to be on a first-come-first-served basis for all units even during peak hours. We believe that a priority system based on whether the unit is in direct contact with veterans or their dependents should be assessed by the VA as one means of reducing the peak hourly workload.

Another way to reduce the peak hourly workload is to use a chargeback system of some type where user-managers are charged for the computer services their units receive. One senior VA official said that under a chargeback procedure he would probably have his units avoid higher priced peak times except for those in direct contact with veterans or their dependents.

None of these actions, which might have reduced the peak workload transaction rate, has been initiated by VA. We have not evaluated the possible effect these actions might have on employee productivity.

CONCLUSIONS

We agree that the workload projection has increased since our prior review. However, we were unable to determine the impact of that increase because VA was unable to provide a reliable basis for the new workload projection and had not made any effort to reduce or flatten the peak hourly workload.

MATTERS FOR CONSIDERATION BY THE COMMITTEE

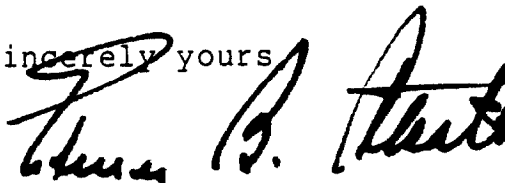
To provide the additional capacity needed by VA to meet its projected workload we see two possible alternatives:

- Require, as a prerequisite to acquiring a computer, that VA develop an accurate and valid workload projection, determine the cost effectiveness of implementing the changes we recommended on May 23, 1979, and reduce the peak hourly workload by scheduling non-priority transactions at other times.

--In the event urgency is an overriding consideration as indicated by VA, acquisition of a computer with a capacity greater than that of an IBM 370/158 could be authorized. But to avoid a repetition of this situation later, we would recommend that this acquisition be contingent upon a commitment by VA to develop an accurate and valid workload projection, determine whether scheduling nonpriority transactions so as to reduce the peak hourly workload would be cost effective, and implement the recommendations contained in our report of May 23, 1979, if cost effective in terms of the new computer capacity.

As you requested, we did not obtain agency comments on this report. As arranged with your office, we are sending a copy of this report to the Chairman, House Government Operations Committee. Unless you publicly announce its contents earlier, we plan no other distribution of this report until 15 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours

A handwritten signature in black ink, appearing to read "Thomas B. Steitz". The signature is written in a cursive style with a large, prominent initial "T".

Comptroller General
of the United States