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



LOGISTICS AND COMMUNICATIONS
DIVISION

APR 1

B-163074

The Honorable
The Secretary of Defense

Dear Mr. Secretary:

We have completed our followup review of the Army's Base Operating System (BASOPS). This system was initiated in 1963 to provide a standard automated management information system for Class One Army installations throughout the continental United States, Alaska, and Panama. It is intended to handle such functions as personnel, supply, and financial management.

During 1971 the House Appropriations Committee, GAO, the Army, and your Office recognized that significant deficiencies existed in this system. At that time 24 locations had BASOPS installed. In November 1971 the Committee recommended denial of funds for further deployment of this system during the remainder of fiscal year 1972. The Committee said that the Army and the Office of the Secretary of Defense were not adequately performing their review functions since systems such as BASOPS were being deployed before all known deficiencies were corrected. The Committee charged your Office with the responsibility of assuring that these deficiencies were resolved before BASOPS was further deployed.

We made our review to determine whether the problems noted in our previous reports and meetings with Army and Defense personnel were corrected as the Committee desired. We inquired into the status of BASOPS at three Texas installations: Fort Hood, Fort Wolters, and Fort Sam Houston. We believed these locations were representative of the majority of BASOPS installations.

We found that BASOPS had improved, but its deployment was resumed before correction of the previously identified problems. Some of the problems which continue to impair base operations are discussed below.

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One problem area concerns the system's cyclic inventory feature which is intended to provide installations with the information needed to take a physical inventory of selected items throughout the year rather than to stop warehouse operations and take an inventory of every item in stock. This feature is also intended to permit bases to conduct inventories without shutting down supply operations.

The BASOPS inventory schedules are prepared by material category, for example, tank-automotive supplies. Each of the many line items in the category is to be inventoried regardless of its storage location. At Fort Hood 42 warehouses and storage yards are dispersed throughout an area of approximately 15 square miles. Since material from a given category may be at a number of different storage locations, Fort Hood officials believe that inventorying by material category would result in wasting man-hours to locate and close each item's storage site within a warehouse or yard. Additional man-hours would be lost traveling to and from the various warehouses to conduct the inventory and required recounts. Moreover, stock on hand but not recorded in the BASOPS records through error or for other reasons would not be identified. Because Fort Hood officials believe that this procedure would be more disruptive to their operations than taking a complete (wall-to-wall) inventory they do not use the BASOPS cyclic inventory procedures. At the time of our review, the most recent complete inventory at Fort Hood had curtailed supply operations for 2 weeks. Such an action was clearly in excess of the 5-working-day limit for conducting an inventory set forth in Army regulations (AR 710-2). The base could provide only limited customer support during the inventory period, and overtime costs were incurred to conduct the inventory as quickly as possible.

Thus, the BASOPS cyclic inventory feature is not meeting its stated objectives. Supply operations for installations with multiple storage locations could be improved considerably if BASOPS procedures provided for an inventory of all material categories stored at a single location. Only one location would be shut down at a time, thus allowing normal base operations to continue.

A second problem area concerns BASOPS' inability to automatically identify interchangeable or substitute items. This condition necessitates extensive manual effort to find interchangeable or substitute items, with corresponding delays in supply responsiveness. It also creates unnecessary back orders on items for which interchangeable or substitute items are in stock which in turn contributes to the accumulation of excess stocks for some items. The accurate and timely identification of all available stocks is an important requirement for supply systems.

A third problem area concerns the compatibility of BASOPS and the Army's Combat Service Support System. This was an area of concern to the Committee in 1971. Interaction between the supply portions of these two systems requires considerable manual intervention. Because BASOPS output for use in the Combat Service Support System is often not in machine-readable form, considerable manual review and keypunching is required. Normally these steps result in lost transactions and errors. Therefore, duplicative and corrective work is needed and additional controls have to be placed over the processes. Such procedures delay supply responsiveness and increase the overall cost of operating and maintaining the system.

The Army has deferred these and other previously identified supply problems, which still exist in BASOPS, for resolution in its Standard Army Intermediate Level Supply System. The Intermediate Supply System was designed to replace the current BASOPS supply subsystem. For example, the Intermediate Supply System is intended to provide for the automatic issue of interchangeable and substitute items. Also, the Intermediate Supply System is being considered for use as the Combat Service Support System's supply system and, if used in both systems, could alleviate known compatibility problems. However, until the Intermediate Supply System is adequately tested and proven to be workable, there is no assurance that it will solve these problems.

Your Office has recognized the need for extensive testing of computer systems and system changes before implementing them. In March 1972 your Office pointed out to the Army that the extension of BASOPS had been characterized by a high

incidence of initial errors and failures in application programs after their apparent successes during prototype testings. Your Office informed the Army of the need to improve the capability to test standard applications and system changes to those applications. We consider appropriate testing to be essential to the successful development of systems such as BASOPS, the Intermediate Supply System, and the Combat Service Support System.

We noted several indications that system corrections or improvements, issued after the Army was told of the need to improve its testing capability, still caused problems. For example, one system change in November 1972 required at least nine consecutive followup changes to correct problems that it caused. With each change the problem must be analyzed, a program change must be written, and the correction must be broadcast and properly implemented at all BASOPS installations. The need to repeatedly correct previously issued system changes can be attributed to the lack of thoroughness in systems analysis and insufficient program testing. Since this problem has occurred on more than one occasion, we believe the Army should devote greater attention to analysis and test procedures to assure that actions taken correct problems without creating new ones.

In August 1971 we reported the interchangeable and substitute item deficiency and the problems with program changes to you. In November 1971 the Army staff, the Computer Systems Command, and the Continental Army Command held a joint planning conference on BASOPS to define the actions necessary to make it a workable system. The cyclic inventory problem was one of the major deficiencies which the conference identified as requiring resolution before deploying BASOPS further.

We recognize that there is a point in systems development when it may be better to install a system with some problems than to wait until all problems are resolved. However, in determining that point, both the benefits to be gained from immediate deployment and the costs of operating a system with known deficiencies should be evaluated. This was not done before deploying BASOPS. Thus, the Army was not in a position to know whether the deployment of BASOPS was cost effective. With systems as complex and pervasive as BASOPS, such an

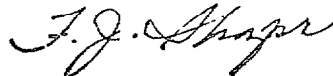
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evaluation provides one of the few sound bases for a decision on extension. We believe that your Office, in carrying out its oversight responsibilities, should provide for increased emphasis on evidence that problems have been resolved or that the benefits of extending systems with known deficiencies have been carefully evaluated.

We are sending copies of this letter to the House and Senate Committees on Appropriations, Government Operations, and Armed Services; the Joint Economic Committee; and the Secretary of the Army.

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Sincerely yours,



F. J. Shafer
Director

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