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UNITED^{SYSTEM}ATES GENERAL ACCOUNTING OFFICE

Automated Support Of Depot Operations Could Be Improved

Defense Supply Agency Department of Defense

The Defense Supply Agency needs to make improvements in the automated logistical information systems used by its depots so that it can:

--Ship materiel more economically;

--Insure accurate preparation, recording, and reporting of materiel shipments; and

--Improve control over customer requisition processing.



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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

LOGISTICS AND COMMUNICATIONS DIVISION

B-133118

The Honorable The Secretary of Defense

Dear Mr. Secretary:

This is our report on "Automated Support of Depot Operations Could be Improved."

Our review revealed that the Defense Supply Agency has designed and developed automated depot systems that extensively support the accomplishment of its supply management responsibilities. We believe that when the recommended improvements have been made, the Department of Defense will have an operational concept worthy of consideration in its other depot activities.

We want to direct your attention to the fact that this report contains recommendations to you which are set forth on pages 13 and 14. As you know, Section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement of actions he has taken on our recommendations to the House and Senate Committees on in colour Government Operations not later than 60 days after the date of the report, and the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Defense Supply Agency; the Director, Office of Management and Budget; and the Senate and House Committees on Government Soperations, Appropriations, and Armed Services.

Sincerely yours,

R. S. Rothwell

F. J. Shafer Director

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| | ABBREVIATIONS | |
| DSA | Defense Supply Agency | |
| GAO | General Accounting Office | |
| GBL | Government Bill of Lading | |
| MOFAST | Mechanization of Freight Packing and Shipping Terminal System | |
| MOWASP | Mechanization of Warehousing and Shipment Processing System | |

Standard Automated Materiel Management SAMMS System

Page

GENERAL ACCOUNTING OFFICE REPORT TO THE SECRETARY OF DEFENSE

AUTOMATED SUPPORT OF DEPOT OPERATIONS COULD BE IMPROVED Department of Defense

$\underline{D} \underline{I} \underline{G} \underline{E} \underline{S} \underline{T}$

The Defense Supply Agency has designed and developed automated depot information systems to provide extensive support in fulfilling its supply management responsibilities. GAO believes changes should be made to these systems so that DSA could

- --ship materiel more economically; an estimated \$1 million could be saved annually, (See pp. 3 to 5.)
- --insure the accurate preparation, recording, and reporting of materiel shipments, (See pp. 5 to 9), and
- --provide improved control over the processing of customer requisitions, (See pp. 9 and 11).

GAO recommends that the Secretary of Defense require the Director, Defense Supply Agency, to:

- --Revise the automated depot systems to identify those shipments that can be combined and sent at a reduced cost.
- --Incorporate the Freight Classfication Guide System as the basis for materiel descriptions used in the automated depot systems.
- --Provide assurance that the appropriate freight tariffs are being selected at each DSA depot using these automated systems and that the information for correct transportation charge determinations appears on all bills of lading.
- --Revise automated procedures for reissuance of bills of lading to comply with Department of Defense regulations.

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- --Incorporate procedures to provide assurance that all of the information needed to identify and control the movement of the materiel and to serve as the basis for payment to the carrier is included in the permanent depot records.
- --Withdraw and resubmit their request for destroying original documents at such time as the microfiche can be relied on as a substitute.
- --Insure that the ability to make changes to the working files is minimized and, to assure that the changes are made properly, comparison of the working files should occur on a regular basis.

GAO believes that once these improvements have been made the Department of Defense will have an operational concept worthy of consideration for use at its other depot activities. (See pp. 13 and 14.)

CHAPTER 1

INTRODUCTION

The Defense Supply Agency (DSA) was established in 1961 to provide effective logistical support of common supplies and services to the military services and other Federal agencies at the lowest feasible cost. By June 30, 1975, this responsibility included the management, procurement, storage, and distribution of approximately 1.8 million items valued at about \$2.2 billion.

To meet its supply management responsibilities, DSA uses supply centers to: compute materiel requirements, procure needed materiel, process customer requisitions, and perform related financial activities. The physical handling of materiel is performed by its depots when directed by the responsible center.

USE OF AUTOMATED INFORMATION SYSTEMS TO SUPPORT SUPPLY MANAGEMENT ACTIVITIES

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To support the accomplishment of its supply management responsibilities DSA has designed and developed several automated logistical information systems. The Standard Automated Materiel Management System (SAMMS) was designed to support supply center activities and the Mechanization of Warehousing and Shipment Processing (MOWASP) was designed to support most of the depots' information requirements. A subsystem to MOWASP, the Mechanization of Freight Packing and Shipping Terminal (MOFAST) was designed to support those depot information requirements not supported by MOWASP.

SAMMS is operational at all DSA supply centers. MOWASP is operational at all DSA depots and MOFAST is operational at two DSA depots and over the next two fiscal years DSA plans to implement it at the five remaining depots.

Collectively these three systems assist DSA in accomplishing its supply management responsibilities. Although each of these systems is designed to provide support for specific aspects of DSA's management responsibilities, each system is dependent upon at least one of the other systems for the data required to complete its assigned functions. For example, the MOWASP system receives supply center directions for receiving, storing, and issuing materiel from the SAMMS system. In turn, MOWASP, with assistance from MOFAST, provides the results of these depot activities to SAMMS.

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SCOPE OF THE REVIEW

This review was primarily concerned with how well these three systems supported DSA's logistical information requirements for their depot supply management activities. Our work was conducted at the Data Systems Automation Office, Columbus, Ohio, which has the responsibility for the design, development, implementation, and operation of SAMMS. We also conducted our work at the Data Systems Automation Office in Ogden since this organization was responsible for the design, development, implementation, and operation of MOWASP. In addition, work was conducted at the Defense Depot, Ogden because this depot was responsible for the design, development, and prototyping of MOFAST.

We discussed the results of our review with officials at DSA Headquarters, Alexandria, Virginia; the Data Systems Automation Office in Columbus and Ogden; and the Defense Depot Ogden. The comments of these officials have been considered in the preparation of this report.

CHAPTER 2

AUTOMATED DEPOT INFORMATION SYSTEMS

COULD BE IMPROVED

Although DSA's automated information systems provide extensive support to its depot activities, some of those activities could be accomplished more economically and effectively if improvements were made to those systems.

MATERIEL SHIPMENT COSTS COULD BE REDUCED

During fiscal year 1975, DSA spent \$64.4 million to ship materiel to and from its depots. Over \$14 million of this amount was spent for parcel post shipments. Our review indicated that an estimated \$1 million could be saved annually by achieving greater consolidation of parcel post shipments with freight shipments.

Currently, customer requisitions are first grouped together by the computer into shipping units. The criteria for combining these requisitions into shipping units is based on such things as the urgency with which a customer needs the materiel, who the customer is and where he is located geographically, where the materiel is located in the warehouse, and whether the materiel is compatible for packing with the other materiel ordered by the customer. The computer, after combining the requisitions using these criteria, then determines how the shipping units will be consolidated into transportation units and whether they will be shipped to the customer by parcel post or by freight. Currently, this determination is made by a series of computer programs whose logic excludes consideration or recognition of the customer or the geographical area to which the materiel is being shipped. Instead, the determination is based primarily on the shipment unit's weight, (all shipment units weighing over 66 pounds automatically are shipped by air or motor freight while all units weighing less than 66 pounds are generally shipped by parcel post), and the urgency of need without regard to the transportation costs. Although these computer designated modes of shipment are intended to be used as guidelines or for informational purposes only, actual shipments vary little from the predetermined modes.

Because the logic used in the computer programs to determine whether a transportation unit will be shipped by parcel post or by freight does not include consideration of the customer or the geographical area to which the materiel is to be shipped, individual parcel post and freight shipments are being processed and made concurrently to the same customer or to the same geographical area when they could be combined and shipped together as freight at a reduced transportation cost without significant delay in shipping time.

For example, we found that during a one week period 1/2065 parcel post transportation units, of routinely requested materiel, were made when they could have been consolidated with transportation units, of routinely requested materiel, being sent as freight that were being processed at the same time for the same customer. 2/ The consolidation of these shipments would have reduced the depot's transportation costs by about \$4,446. Annually this could amount to \$231,000 at the Ogden depot alone. Since this depot processes 22 percent of DSA's parcel post shipments, an estimated \$1 million could be saved annually, if similar conditions prevail at the other DSA depots. Also, we believe this change would not significantly increase materiel shipment time.

For this reason we believe that the criteria to be used in identifying shipping units that can be consolidated should be changed to include recognition of the customer and the geographical area to which the materiel is to be shipped. DSA officials at Ogden have estimated that it would cost only \$4,000 to make these changes.

2/This analysis was limited to consolidating routine parcel post shipments with routine motor freight shipments. It excluded consideration of consolidating higher priority shipments and parcel post shipments with air freight shipments. We excluded consolidation of these types of shipments because the procedures are identical. Thus, our main purpose was to illustrate the desirability and feasibility of improving the computer programs to reduce materiel shipments costs and not to identify the total savings that might be attainable through the improved procedures.

<u>l</u>/Depot officials selected a one week period as being representative of their annual workload. It was their view that an analysis of the routine shipments made during this one week period would be indicative of any savings that DSA could achieve annually through improved procedures for consolidating routine parcel post and routine freight shipments.

Depot officials agreed that transportation costs for parcel post shipments could be reduced if these changes were implemented. These officials are currently testing several methods of reducing transportation costs including the methods we have suggested. We plan to monitor these tests and the procedures selected by these officials which are intended to reduce the depot's and DSA's transportation costs.

PREPARATION, RECORDING, AND REPORTING OF MATERIEL SHIPMENT INFORMATION NEEDS IMPROVEMENT

Preparation of bills of lading for freight shipments is the responsibility of commercial carriers. However, because it is mutually beneficial, carriers allow the Government to prepare its bills. After shipments have been delivered, the related bills are paid without the accuracy of the rates and charges being determined. The bills are then audited by the Government, and necessary adjustments are made directly with the carrier.

DSA's automated depot systems do not have the procedures and controls necessary to ensure that materiel shipment information is properly prepared, recorded, or reported. Therefore, the automated systems are not

--describing materiel properly, --citing freight tariffs correctly, or --using GBL numbers properly,

Also, shipments are reported to both the centers and the customer without assurance that information needed to identify and control the movement of the materiel and to serve as a basis for payment to the carrier has been permanently recorded.

Inaccurate materiel descriptions

A proper description of the materiel being shipped to or from a depot is necessary to assure the appropriate assessment of transportation charges. It is for this reason that the Department of Defense regulations require the military services to use the materiel descriptions provided in the Freight Classification Guide System. This system is managed by the Military Traffic Management Command. DSA depots are responsible for assuring that materiel descriptions in the system are correct for the materiel managed by DSA. When a materiel description is incorrect, the depots are to report such deficiencies to the Military Traffic Management Command for correction.

DSA's automated depot system did not use the Freight Classification Guide System's materiel descriptions, although their use was required by Department of Defense regulations. Instead, materiel descriptions, requiring judgmental decisions by DSA depot officials, were developed without using the Guide System as a basis. We found locally developed descriptions that did not accurately describe the materiel that had been shipped and thus, materiel had been misclassified. Misclassification normally results in the use of erroneous transportation charges which may be detected by the General Services Administration's postaudit but only when the General Services Administration has reason to believe the descriptions are in error. However, the General Services Administration must generally rely on the descriptions on the bill of lading because it never sees the materiel that was shipped.

Depot officials agreed that the materiel descriptions contained in the Freight Classification Guide System should be used in their automated depot information systems. They began incorporating these descriptions into their system in April 1975. As of December 1975, the incorporation of this information into the depot's automated information system has resulted in the identification of approximately 1250 line items that had missing, incomplete, or erroneous descriptions in the Freight Classification Guide System. This condition has primarily occurred because the Guide System was being revised and corrections and additions had not been made since July 1974.

Although the revisions to the Guide System are not expected to be completed until June 1976, the Military Traffic Management Command has prepared and adopted interim procedures for resolution of the types of deficiencies identified at Ogden. Therefore, DSA should base the materiel descriptions in its automated system on the Guide System and when deficiencies are identified prescribed procedures should be followed.

Incorrect tariff citations

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Proper transportation charges for freight shipments depend not only upon the materiel being properly described but also on the selection of the correct freight tariff. In addition to the charges to be applied to different types of materiel, each tariff identifies the types of materiel requiring special consideration (such as materiel that requires a signature receipt) and the participating carriers.

Although the ability to select a freight tariff for use on bills of lading has been included in DSA's automated information system, computer program logic needs to be improved so that the transportation costs shown on the bills are correct. For example, our review disclosed that the computer calculated transportation cost estimate, shown on the bills of lading, on the average, overstated the actual transportation costs by about 25 percent, with some individual estimates being two to three times the final transportation cost. We found that, in addition to incorrect estimates of transportation costs, other bills of lading had been produced that contained

- --a motor carrier tariff for a shipment by air freight,
- --a tariff for an intrastate shipment that was not applicable, and
- --a tariff for materiel given to an unauthorized carrier.

The incorrect bills of lading were caused by the logic in the computer programs which disregarded the carrier to be used, disregarded the special provisions of various tariffs, and contained improperly structured rating files and programs. These conditions precluded the depot from being able to: compute accurate shipping cost estimates, take advantage of reduced transportation costs available with certain tariffs when special considerations apply, and select appropriate carriers.

These conditions were thoroughly discussed with Depot officials who, subsequent to our review, began revising the automated procedures used to prepare the bills of lading. These actions are intended to improve the system's ability to select the correct tariff citation and to properly estimate and print the transportation charges, recognizing that the final amount of the transportation charge is subject to determination by the General Services Administration.

Incorrect use of bill of lading numbers

To prevent duplicate payments of transportation costs, Government bills of lading are assigned individual numbers. When bills of lading are prepared by the computer, unnumbered forms are generally used with the computer providing the controls necessary to insure that duplicate bills are not issued. If a prepared bill, for any reason, cannot be used as a shipping document, a new bill must be prepared. When bills of lading must be reissued, the automated depot system reissues the bills using the same bill numbers. This practice is contrary to Department of Defense regulations which are designed to provide control and accountability for the assignment of title to Government materiel and the eventual payment of Government funds. These regulations state that numbers assigned to voided bills be canceled and reissued bills be assigned new numbers. This is intended to prevent the unauthorized use of these bills.

Depot officials stated that the need to reissue bills of lading was primarily caused by torn sheets. They agreed that revisions to the automated procedures for the reissuance of bills of lading must be made in order to comply with Department of Defense regulations; however, corrective action had not been initiated as of September 1975.

Controls for permanent records of shipment information need improving

After a bill of lading has been issued, the information in the computer is transferred and permanently recorded on microfiche to provide DSA with a permanent record of the materiel it has shipped and a means of readily responding to shipment inquiries. These microfiche are used as the primary source of information for responding to shipment inquiries because less time is required for research than is needed for manually searching file cabinets or active record storage locations.

Although DSA's automated depot systems control the introduction and processing of data with record counts and verification procedures to insure all data is introduced into the system and it is accurate, the bill of lading data is recorded on microfiche without any assurance that the computer has transferred all the information needed to properly describe the shipped materiel or that all the information transferred has been recorded on the microfiche. Without assurance that the information has been completely transferred and properly recorded on the microfiche, the microfiche should not be relied on to serve as the depot's permanent record of the materiel it has shipped.

The reliability of the microfiche becomes even more important in those cases when it is the depot's only source of information for transportation and supply data. During our review, DSA, on July 22, 1975, requested GAO's approval to destroy its retained copy of the bill of lading containing the transportation and supply data relating to its shipments and rely solely on the microfiche for such data. We believe that DSA should develop and use record counts and verifications procedures that will provide the assurance that the bill of lading information is completely transferred to and properly recorded on the microfiche before destroying its retained copies of the bill of lading. Also, since the depot's records may be necessary in cases of litigation against carriers and others and under certain conditions microfiche records are admissible as evidence in cases of litigation, DSA must be able to provide the assurances necessary to prove that the microfiche are accurate representations of the original documents, particularly when the original documents are no longer available. Thus, we believe DSA should withdraw its July 22, 1975 request until the microfiche can be relied on as a substitute for the original document.

CONTROL OVER DEPOT PROCESSING OF CUSTOMER REQUISITIONS COULD BE IMPROVED

Depot processing of customer requisitions is supported by two automated systems (MOWASP and MOFAST). Although the MOFAST system was designed to be a subsystem of MOWASP, DSA Headquarters had directed that it be developed to operate with its own working file. Therefore, on a daily basis, the MOWASP combines requisitions selected for processing into shipments and records this data in its working file. This data is then transferred to the MOFAST system and, as the shipments are processed through the depot, the MOFAST system working file reflects the changes to the status of the ship-At the end of each day, the data concerning shipment ments. processing completions are transferred to the MOWASP working file. The MOWASP then makes the appropriate reports to the customer and supply centers and establishes the depot's historical records for the shipment.

Controlling shipment records

To support the control of processing customer requests for materiel the automated depot systems use working files that reflect the status of the request while it is being prepared for shipment by the depot. When these records are transferred from one system (MOWASP) to the other (MOFAST) record counts are used to insure that each file contains the same basic records.

However, depot procedures allowed employees to make changes in one file without making similar changes in the corresponding file. Thus, these procedures soon resulted in the use of working files which did not contain the same basic shipment records.

| | Records in | Records in | |
|----------------------------|-------------|-------------|-------------|
| Time | MOWASP, not | MOFAST, not | Total |
| Period | in MOFAST | in MOWASP | differences |
| March 6 to March 30, 1975 | 180 | 372 | 552 |
| March 30 to April 23, 1975 | 157 | 160 | 317 |
| May 4 to May 24, 1975 | 2,399 | 728 | 3,127 |

These identified differences were primarily caused by

- --changes to the status of shipments being improperly entered into the automated systems, and
- --delays in correcting and processing invalid shipment records.

When differences were identified by depot personnel, the causes of the differences were never determined.

We believe that the ability to make changes to the working files should be minimized. For example, changes to the working files should only be permitted through the MOFAST system since this file was designed to reflect changes to shipment status and, when materiel has been shipped, the MOFAST working file automatically updates the MOWASP working file records. However, as was happening, changes that are made directly to the MOWASP working file will not cause an update to the records in the MOFAST working file and record imbalances will occur as illustrated above. Also, to insure that the changes are properly made, working file comparisons should be made on a regular basis with differences being investigated and causes corrected.

These corrective actions need to be taken to insure that the control capability of the working files is maintained. Depot officials agreed. Depot personnel have been instructed in the correct methods for making changes to the working files. Also, action has been initiated to have the two working files automatically compared on a weekly basis.

Automated systems contain incorrect information

Whenever shipments have not been processed within the established timeframe, the automated system generates an exception report. Although this report requires specific investigation so that corrective action can be taken, the investigations were not sufficient to identify the actual status of the shipments. As a result, incorrect transportation modes, shipment dates, and GBL numbers were being reported to customers and supply centers and recorded in the depot's permanent records. For example, materiel reported as shipped on March 3, 1975, under a specific GBL was actually shipped April 14, 1975, under a different GBL. Without accurate information, the system is not able to provide center and depot officials with the ability to properly respond to customer requests for status information. Therefore, to correct this deficiency, depot personnel were again instructed in the system procedures related to the entry of exception type information into the automated system. If properly followed, these procedures should provide correct information.

AUTOMATED SUPPORT HAS BEEN EXPANDED

Although DSA's automated systems had been developed to support the timely processing and shipment of customer requisitions, expanded support was possible with only minor changes. In March 1975, we informed depot officials that these changes would utilize information already available in the computer system and assist in the audit of GBL.

When shipments are being made to different customers in the same geographic area on the same truck, the shipping costs, for individual shipments, are sometimes based on the total weight of all shipments plus the various charges for distribution of the individual shipments. Because the individual bills do not contain the information to support the proper determination of transportation costs, a manifest showing the total weight of the individual GBLs and related distribution points is provided the carrier. Normally, the GBLs included on a manifest are not submitted for payment or audited at the same time. Because a copy of the manifest is not always provided at the time of the audit, the total shipment weight and related distribution point are not always known. Without the related manifest, the propriety of the transportation charge payment can not be determined and additional correspondence is necessary before the payment can be audited.

Since this information is contained in DSA's automated depot system at the time the GBLs are prepared, it is possible for the computer to print the total shipment weight and related distribution points on each GBL. This information eliminates the need for the manifest at the time of audit and provides the information needed for determining the propriety of the related transportation charges. Officials at the depot agreed that this information could be printed on the individual GBLs and have made the necessary changes so that this information is now included on the appropriate bills of lading.

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CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

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The DSA uses automated information systems to provide extensive support for the accomplishment of its supply management responsibilities. However, in addition to the changes made by DSA in the printing of the total shipment weight and distribution points on the GBL, we believe changes should be made to these systems that would allow DSA to

- --ship materiel more economically; an estimated \$1 million could be saved annually by changing the criteria for identifying and selecting parcel post shipments,
- --provide improved control over processing customer requisitions, and
- --insure accurate preparation, recording and reporting of materiel shipments

Once these improvements have been accomplished, we believe DSA's automated information systems will provide the Department of Defense with an operational concept worthy of consideration for use at its other depot activities.

RECOMMENDATIONS

To achieve these improvements in the operational support provided DSA depots by its automated depot systems, we recommend that the Secretary of Defense require the Director, Defense Supply Agency, to

- --revise the automated depot systems to identify those shipments that can be combined and sent at a reduced cost;
- --incorporate the Freight Classification Guide System as the basis for materiel descriptions used in the automated depot systems;
- --provide assurance that the appropriate freight tariffs are being selected at each DSA depot using these automated systems and that the information required for correct transportation charge determinations appears on all bills of lading;

--revise automated procedures for the reissuance of bills of lading to comply with Department of Defense regulations;

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- --incorporate procedures to provide assurance that all of the information needed to identify and control the movement of the materiel and to serve as the basis for payment to the carrier is included in the permanent depot records;
- --withdraw and resubmit their request for destroying original documents at such time as the microfiche can be relied on as a substitute; and
- --insure that the ability to make changes to the working files is minimized and, to assure that the changes are made properly, comparison of the working files should occur on a regular basis.

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