DOCUMENT RESUME

04928 - [B0195088]

Economies Available through Improved Inventory Management. LCD-78-212; B-114807. January 18, 1978. 20 pp.

Report to Joel W. Solomon, Administrator, General Services Administration; by Fred J. Shafer, Director, Logistics and Communications Div.

Issue Area: Facilities and Material Management: Requirements for Equipment, Spare Parts and Supplies (702).
Contact: Logistics and Communications Div.
Budget Function: General Government: General Property and Records Management (804).
Organization Concerned: Federal Supply Service.

The General Services Administration can save millions of dollars annually through improved procedures and practices for procuring, managing, and supplying inventories. Recommendations: The Administrator of General Services should: stress the importance of making shipments direct from vendors to customers and establish a more realistic criterion for screening and selecting requisitions from user agencies that should be filled through diversion of quantities due in from vendors; establish a management information system that will require supervisors to determine that item managers use the criteria and arrange direct shipments when they are more economical; place greater emphasis on the need for timely cancellation or deferral of procurements; improve the usefulness of the overstock with due-in report; increase the units of issue quantities in the supply catalog for low-value items to quantities either consistent with the minimum commercial standard pack or to quantities repetitively ordered by customers over a short timespan; reevaluate current item authorizations for larger than economic order quantity buys to replenish depot stocks, and restrict future item authorizations for larger than economic order quantity buys to those instances justified by realistic projections of cost savings or other measurable benefits. (Author/SC)

5088

UNITED STATES
GENERAL ACCOUNTING OFFICE

Economies Available Through Improved Inventory Management

General Services Administration can save millions of dollars annually through improved procedures and practices for procuring, managing, and supplying inventories.

LCD-78-212

JANUARY 18, 1978

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

LOGISTICS AND COMMUNICATIONS
DIVISION

B-114807

The Honorable Joel W. Solomon
Administrator of General Services

Dear Mr. Solomon:

This report shows that your agency can save millions of dollars annually by improving its procedures and practices for procuring, managing, and supplying inventories.

This report contains recommendations to you on pages 7, 11, 15, 18, and 19. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to 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 Acting Director, Office of Management and Budget; the House Committee on Government Operations; the Senate Committee on Governmental Affairs; the House and Senate Committees on Appropriations; and the Commissioner of the Federal Supply Service.

Sincerely yours,

Fred J. Shafer
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE ADMINISTRATOR
OF GENERAL SERVICES

ECONOMIES AVAILABLE THROUGH
IMPROVED INVENTORY MANAGEMENT

D I G E S T

The General Services Administration (GSA) can save millions of dollars annually by improving its procedures and practices for procuring, managing, and supplying inventories. GAO found that:

--Large numbers of customer requisitions were filled from depot stocks which could have been shipped direct from vendors at less cost. Such direct vendor shipments could save GSA from $1 to $3 million in transportation costs yearly. (See ch. 2.)

--Large amounts of excess onorder stocks were not promptly identified or canceled. GSA could save millions of dollars annually in procurement costs by timely cancellation or deferral of these orders. (See ch. 3.)

--Much more cost was incurred to fill low-value requisitions than was realized in sales revenue. GSA could save hundreds of thousands of dollars annually in warehouse handling costs by establishing more economical units of issue for the low-cost items it supplies. (See ch. 4.)

--Unjustified procurements of replenishment stocks were made in larger than economic order quantities. GSA could reduce its inventory investment costs by hundreds of thousands of dollars on a one-time basis and save tens of thousands of dollars annually in inventory holding costs if these quantities were not authorized. (See ch. 5.)

GAO recommends that the Administrator of the General Services Administration correct the conditions described in this report. (See pp. 7, 11, 15, 18, and 19.)

Tear Sheet. Upon removal, the report cover date should be noted hereon.

LCD-78-212
(943030)

Contents

ABBREVIATIONS

EOQ	Economic Order Quantity
GAO	General Accounting Office
GSA	General Services Administration
MRQ	Maximum Release Quantity

CHAPTER 1

INTRODUCTION

The General Services Administration (GSA) is responsible for procurement and supply of goods and services to Federal civil and military agencies. It is the national manager for most items in 69 classes of materials. GSA's 10 regional offices and 2 commodity centers manage about 22,000 items. As of June 30, 1977, this inventory was valued at $208 million.

The majority of GSA's sales are in fast-moving, high-volume items. From July 1, 1976, through June 30, 1977, GSA's depot sales were $681 million. Five percent or about 1,000 items accounted for $448 million, or 66 percent of these sales.

GSA inventory is financed by a revolving fund, known as the General Supply Fund. This fund also finances motor pools, property management, and administrative equipment. As of June 30, 1977, total appropriated and donated capital of the fund was $443.4 million.

GSA replenishes inventory from sales revenue which represents cost of goods sold, transportation, and a percentage markup to cover inventory adjustments and minor losses. All other costs of operating this supply function are appropriated separately by the Congress. During fiscal year 1976, total operating costs for stocked and nonstocked items charged to appropriated funds amounted to $180 million.

GSA has taken steps to improve the effectiveness of its supply support operations. On July 1, 1975, item managers became responsible for managing inventories of items on a nationwide basis rather than regionwide. Thus, each item in the supply system came under nationwide management by a single inventory item manager.

Under this system, requisitions pass through a computer screening program in Washington, D.C., which determines the depot that can fill them most economically. Item managers at the depots also receive information on stock on order, stock on hand at each depot, and orders placed by customers.

In 1975, GSA had a cash shortage in the General Supply Fund and asked the Congress to appropriate additional funds. We reported in March 1976 that overprocurement had been one of the major causes of the cash shortage. 1/ We also recommended that alternatives to reduce depot stocking of items be explored to reduce the amount of additional funding.

This report discusses other improvements in management practices and controls which should enable GSA to reduce the investment in inventory and to reduce transportation and warehouse handling costs.

1/Report entitled "Operations of General Services Administration, General Supply Fund," General Services Administration (LCD-76-421, Mar. 19, 1976).

CHAPTER 2

ECONOMIES AVAILABLE THROUGH

DIRECT VENDOR SHIPMENTS OF MATERIAL TO USERS

GSA annually ships millions of dollars worth of materiel to customers from its depots which it could ship direct from its vendors at less cost. GSA could save an estimated $1.1 to $3.0 million in transportation costs yearly by improving its procedures and practices for screening and selecting large requisitions for materiel from users to be filled by direct vendor shipments.

DIRECT DELIVERY CONCEPT AND PROCEDURES

The primary objective of the GSA supply system is to provide customers with the desired quantities of items at the time required and at the lowest possible overall cost to the Government. In many cases involving large quantity requisitions, the direct delivery method of supply from the vendor to the user may best meet this objective.

Transportation savings from filling requisitions by direct shipments from vendors to using activities results when such shipments shorten the pipeline for the flow of goods from vendors to users. In filling requisitions from stocks at GSA depots, transportation costs are incurred to transport goods from vendors to GSA depots and from GSA depots to using activities. These costs are eliminated when goods are shipped direct to using activities from vendors and the only transportation costs incurred are those to ship direct to the using activities.

GSA's regional item managers are required to establish a maximum release quantity (MRQ) for each item based on transportation and ordering economies, such as carload or truckload shipments, or quantity discounts. A primary purpose of the MRQ is to prevent the automatic issue of large quantities of items from depot stocks without prior review by the item manager for direct vendor shipment consideration.

All customer requisitions are passed through a computer screening program in Washington, D.C., which determines the most economical GSA depots to fill the requisitions. During this process, the quantities requisitioned are supposed to be compared to MRQs. If the quantities requisitioned are equal to or greater than MRQs, the requisitions are sent to the responsible item managers for review. The item managers are supposed to determine whether the requisition can be filled more economically by having a vendor deliver the quantity direct to the user.

POTENTIAL FOR DIRECT VENDOR SHIPMENT ECONOMIES NOT BEING ACHIEVED

In order to evaluate the effectiveness of GSA's procedures and practices for screening and selecting requisitions for direct vendor delivery consideration, we analyzed the makeup of all GSA depot issues for a 3-month period. This analysis showed that issues valued at $1,000 or more had the greatest potential for direct vendor shipment economies with the least impact on item managers' workload. Although they accounted for 38 percent of the dollar value of all issues, they represented only slightly more than 1 percent of the number of issues. We then statistically sampled and evaluated the potential for direct vendor shipment economies for the 4,750 issues valued at $1,000 or more made by depots in three GSA regions. These issues represented 22 percent of GSA's nationwide depot issues for the 3-month period.

Our analyses showed that GSA could annually save an estimated $1.1 to $3.0 million in transportation costs without compromising supply responsiveness by diverting vendor shipments of portions of existing orders for depot stocks direct to users to fill requisitions valued at $1,000 or more that meet one of the following conditions.

--Shipments weighing 20,000 pounds or more.

--Shipments by air to overseas activities.

--Shipments to domestic activities located more than 50 miles from the GSA issuing depots.

Reasons direct vendor shipment economies not considered

GSA regional item managers did not consider the potential for transportation economies through direct vendor shipments of issues valued at $1,000 or more made by the depots during the 3-month test period for the following reasons:

--Maximum release quantities were not established as required to preclude automatic depot issue prior to manual screening for direct vendor shipment potential for items involving 28 percent of the issues.

--Established maximum release quantities for items involving 47 percent of the issues were unrealistically high.

--Direct vendor shipment was not considered for 25 percent of the issues, even though established MRQs for the items involved prevented automatic depot issue, because of the additional paperwork and recordkeeping involved with directing vendors to divert shipments of existing orders for depot stock direct to users to fill outstanding requisitions.

Examples of the above conditions which precluded transportation economies through direct shipments from vendors are presented below.

--A using agency in Ann Arbor, Michigan, requisitioned 36 filing cabinets valued at $3,218.40 from GSA on September 17, 1976, but the requisition was not filled immediately because the depot in Middle River, Maryland, was out of stock. The quantity requisitioned was placed on back order until the depot received additional stock from a vendor in Grand Rapids, Michigan, on November 3, 1976. Seven days later, on November 10, 1976, GSA issued the 36 filing cabinets from the depot at a transportation cost of $240. The transportation costs to move 36 cabinets from the vendor in Grand Rapids, Michigan, to the depot was $140.45. The total transportation costs to move this item from the vendor to the user via the GSA depot over a total back-tracking distance of 1,104 miles were $380.45. If 36 of the cabinets on order had been shipped directly to the user from the vendor over a direct line distance of 125 miles, the transportation costs would have been $73.39, or $307.06 less. This requisition should have been considered for direct delivery by the item manager because the MRQ is 10, which is less than the quantity requisitioned. The item manager stated there was enough time to divert the quantity requisitioned from the vendor direct to the user but could not recall the reason for not making the direct delivery.

--A using agency in Savannah, Georgia, requisitioned 30 storage cabinets valued at $1,800 from GSA on August 26, 1976, and GSA issued the storage cabinets from its depot in Edison, New Jersey, 17 days later on September 12, 1976. In total, the transportation costs to move this item from the vendor in Milan, Michigan, to the user via the GSA depot amounted to $395.89. At the time of the agency requisition, GSA had 190 cabinets on order from the vendor. The vendor shipped these cabinets to the depot on September 10, 1976, 15 days after the date of the customer requisition. If 30 of these cabinets had been diverted directly from the vendor to the user, the transportation costs would have been $311.22, or $84.67 less. This requisition should have been considered for direct delivery by the item manager because the MRQ is 25, which is less than the quantity requisitioned. But, the item manager indicated a reluctance to divert because diversions cause added paperwork, make recordkeeping more difficult, and place an additional burden on vendors. The manager expressed an opinion that GSA's function is to stock, rather than direct deliver items needed by users.

--A requisition for 100 boxes of paper towels costing $1,016.90 was filled from a depot in Norfolk, Virginia. The item manager had established an MRQ of 4,000 boxes, or about six carloads which is about twice the quantity on the largest requisition filled during our test period. Since the MRQ was higher than the quantity requisitioned, the item manager did not consider diverting a quantity due in to fill this requisition. Direct delivery of this item from the vendor in Mechanicsville, New York, to the user in Tobyhanna, Pennsylvania, would have resulted in a savings of $100.48 in transportation costs.

NEED TO ESTABLISH A MANAGEMENT INFORMATION SYSTEM

Although there is potential for saving transportation costs if item managers specify direct delivery of items to fill certain large requisitions from using agencies, GSA top management had not emphasized the importance of this program or provided information which would enable top management and regional supervisors to determine whether or not item managers effectively implemented the program.

Such information is necessary if GSA is to take advantage of the potential savings available through shipment diversion. If such information were available, GSA's management personnel could determine the reasons why direct deliveries were not made on large requisitions and, where applicable, take corrective action.

CONCLUSIONS

GSA could realize substantial annual transportation cost savings by improving its procedures and practices for screening and selecting large requisitions from using agencies to be filled by direct vendor shipments. Also, GSA has no management information system that will enable its top management and local supervisors to assure that item managers have considered direct shipments from vendors to using activities and have scheduled direct deliveries when they are economical and feasible.

RECOMMENDATIONS

We recommend that the Administrator of General Services stress the importance of making shipments direct from vendors to customers and establish a

--more realistic criterion, such as customer requisitions of $1,000 or more, for screening and selecting requisitions from user agencies that should be filled through diversion of quantities due in from vendors and

--management information system that will require supervisors to determine that item managers use the criteria and arrange direct shipments when they are more economical.

CHAPTER 3

IMPROVEMENTS NEEDED IN SYSTEM

FOR CONTROLLING STOCK EXCESSES

GSA can save millions of dollars annually in procurement costs through improved procedures for and increased management emphasis on timely cancellation or deferral of orders for items excess to requirements.

SYSTEM FOR CONTROLLING STOCK EXCESSES

In March 1976, we reported to congressional appropriations committees that GSA could alleviate its supply fund shortages by taking the necessary actions to control substantial overprocurements of some items at the expense of other items. Subsequently in April 1976, GSA initiated a system to identify and control the overprocurement of stocks. Under this system, GSA's Central Office automatically produced and distributed monthly to its regional management centers a report entitled "Overstock with Due-ins Report" which showed items whose onhand plus onorder quantities exceeded requirements.

Each regional item manager is supposed to review copies of this report monthly to determine whether any item for which he has responsibility is in an overstock condition. If so, the item managers are supposed to review their order files to determine whether the overstock condition can be alleviated by canceling or deferring excess quantities on order.

NEED FOR MORE TIMELY CANCELLATION OR DEFERRAL OF EXCESS ONORDER STOCKS

As of the end of November 1976, GSA's 12 regional management centers had $11.2 million worth of excess stocks on order or due in for items for which there was already $10.3 million worth of excess stock on hand. The five regional management centers reviewed by us were responsible for $9.1 million worth of these excess onorder or due-in stocks. To test the effectiveness of GSA's system for controlling excess stocks, we examined a selection of items managed by the five centers, each of which had excess onorder quntities valued at $2,500 or more. The total excess onorder stocks for these items as of the end of November 1976 was $5.5 million.

At four of the five regional management centers, no action had been initiated to cancel or defer procurement of any of the $3.1 million worth of excess onorder stocks for 84 percent of the selected items. This condition existed because the responsible regional item managers had not reviewed the November 1976 "Overstock with Due-ins Report" and, therefore, were not aware of the excess position for these items. According to the item managers, review of the overstock reports was too time consuming because the reports contained too many items with low-value excesses. Additionally, the managers told us that review of the overstock reports and subsequent cancellation or deferral of excess onorder stocks was assigned a low priority in relation to other inventory management center workload.

Subsequent to our bringing the $3.1 million worth of selected excess onorder stocks to the attention of GSA central and regional management officials, action was taken to cancel $326,000 worth of the selected excess onorder stocks. In our opinion an additional $724,000 could have been canceled if the regional item managers had taken timely action when the items first appeared on overstock reports. Many of the selected excess onorder items were on overstock reports available to the item managers several months prior to contract award. For example:

--The June 1976 overstock report showed that a socket wrench (stock number 5120-180-1013) managed by the Kansas City Tool Center had a 48-month excess supply of stock valued at $9,370. In October 1976 the item manager contracted for additional quantities of this item. By April 1977, the overstock increased to 99 months. The item manager had not reviewed the overstock reports prior or subsequent to the October 1976 contract award and was not aware of the overstock condition.

In contrast to the lack of action taken by the four centers to cancel or defer procurement of excess onorder stocks, the New York Center was effectively using the overstock report as a management tool for identifying and canceling or deferring procurements for items in excess supply. Prior to our inquiry, the New York Center had canceled $1.1 million of the $2.4 million excess onorder stocks for the test items selected by us. Unlike the other four centers reviewed by us, the New York Center required its item managers to investigate monthly items appearing on the overstock report and, where feasible, to cancel or defer procurement of items in excess supply. Additionally, the New York Center had a management information feedback system for evaluating the performance of item managers in canceling or deferring procurements of items reflected on the overstock report.

Overstock with due-in report needs to be improved

The overstock with due-in report considerably understates GSA's overstock position because the report shows only the extent to which stocks on hand and on order exceed requirements by 3 or more months. GSA's November 1976 overstock report showed $21.5 million worth of excess stock on hand and on order. Had the 3-month permissive overstockage been excluded from the computation, the amount of overstock would have been $43.9 million.

Additionally, the report includes many due-in items with very low dollar value. According to a number of item managers and their supervisors, these insignificant items cause the most problems in trying to make a detailed analysis of the report. As an example, one item manager's report showed 56 items with an overstock due-in value of $95,987. Only 12 of these items had overstock of over $1,000 but their total value was $80,426. Because each of these 12 items had overstock of 5 or more months and comprised 84 percent of the total, concentration on these items might have resulted in appreciable deferral or cancellation of quantities due in. Also, the overstock data shown on the report does not distinguish between types of due-ins which could potentially be canceled or deferred and those which cannot. Consequently, the overstock position on an item shown on the report is sometimes caused in part by interdepot transfers and merchandise returns which cannot be canceled or deferred.

In January 1977, GSA changed the overstock reporting cycle from a monthly to a quarterly basis. GSA headquarters had queried the inventory management centers regarding how often the report should be produced. Although the responses were about evenly divided between monthly and less frequent reporting, GSA headquarters officials decided to go to quarterly reporting. One of their reasons was that item managers could review the report in more detail. However, in our opinion, quarterly reporting prevents item managers from taking timely cancellation actions that monthly reporting allows.

Management information system needed

GSA's system for controlling excess stocks does not provide for information feedback to GSA's central or regional management officials on the performance of item managers in canceling or deferring procurements of items that appear on the overstock report. Hence, there is little incentive for item managers to aggressively pursue the cancellation or deferral of procurements for items in excess supply. Only one of the five regional centers reviewed had a management information system for monitoring the performance of item managers' responses to the overstock reports. As previously mentioned, this center was far more successful in canceling excess onorder stocks than the other centers reviewed.

CONCLUSIONS

GSA can reduce excess investments in inventories by millions of dollars annually by improving its system for controlling stock excesses and by placing greater management emphasis on the need for timely cancellation or deferral of procurements for items in excess of normal system requirements. Three months overstockage permitted under current reporting results in a buildup of inventories in excess of computed system requirements. Reporting only those stocks that exceed the 3-month overstockage avoids presenting a realistic inventory position on which management can base decisions. In addition, GSA management has no feedback mechanism or information system to determine that the reported data is used to accomplish its intended purpose.

RECOMMENDATIONS

We recommend that the Administrator of General Services:

--Place greater emphasis on the need for timely cancellation or deferral of procurements for items in excess supply.

--Improve the usefulness of the overstock with due-in report by (1) changing back to a monthly reporting frequency, (2) eliminating the 3-month permissive overstockage from the computation of stock excesses, and (3) show summary totals broken down by onhand and onorder stocks of total stock excesses but restrict line item display to items with relatively significant excess onorder dollar values.

--Establish a management information system that will provide GSA's central and regional management with a means for monitoring and evaluating regional item managers' performance in canceling or deferring procurements of items in excess supply as reflected on the periodic overstock with due-in report.

CHAPTER 4

SAVINGS AVAILABLE THROUGH MORE

ECONOMICAL ISSUES OF LOW-COST ITEMS

In one year, GSA incurred warehouse processing costs equal to 144 percent of the selling price in making 937,000 small issues of $2 or less. The total sales value of these issues was $1,130,000. GSA's warehouse processing costs related to these sales was $1,689,000. This occurred because, although GSA catalogs list standard pack quantities for low-value items, it accepts and fills requisitions in smaller units of issue quantities. GSA could reduce the number of small-value issues and related warehouse costs by establishing more economical units of issue for the low-cost items it supplies.

NEED TO ESTABLISH ECONOMICAL UNITS OF ISSUE

During September through November 1976, GSA depots filled about 234,000 requisitions having a sales value of $2 or less per requisition. These low-value requisitions amounted to only two-tenths of 1 percent of the total sales for the period; however, they represented 15 percent of the total requisitions filled. The following table shows the requisitions by value and the relationship of small-dollar issues to total issues.

Sales Nationwide
September through November 1976

Dollar value range of issues	No. of issues	Percent of issues	Sales value	Percent to total sales
$ .01 to $1.00	113,027	7	$ 65,820	.05
1.01 to $2.00	121,134	8	181,732	.15
	234,161	15	247,552	.20
Over $2.00	1,336,378	85	125,287,259	99.80
Total	1,570,539	100	$125,534,811	100.00

Frequently, issues for $2 or less were made to the same customer for the same item on a repetitive basis. For example, GSA depots made the following number of repetitive issues of the same items to the same customer during the above period.

Repetitive Issues of Same Items to Same Customers

Number of issues	Total issues
2	23,150
3	7,722
more than 3	26,743
	57,615

Examples of repetitively ordered small quantities of the same items by the same customers:

Item	Minimum standard pack	Month issued	Unit of issue	Quantity ordered	Value
Finger pads	12 dozen	October 1976	Dozen	3	$1.23
"		November 1976	Dozen	1	.41
"		November 1976	Dozen	1	.41
Plastic tab signals	18 hundred	October 1976	Hundred	3	.60
"		October 1976	Hundred	3	.60
"		November 1976	Hundred	6	1.20
Correction tape	5 rolls	October 1976	Roll	3	.39
"		November 1976	Roll	3	.39
"		November 1976	Roll	2	.26
"		November 1976	Roll	1	.13

The GSA cost to fill a small-bin requisition is about $1.74 for warehouse handling costs. Total estimated warehouse processing cost to fill requisitions for $2 or less during the 3-month period was about $407,000. The sales price of the items was about $283,000. On an annual basis, the total estimated warehouse processing cost would be about $1.6 million to fill orders with a sales value of $1,130,000.

Our analysis of low-value issues covered a 3-month period; however, it is indicative of the repetitive issues of the same items to the same customers which probably occurs over longer periods. On an annualized basis, we estimate that such repetitive issues exceed 230,000. If only these repetitive issues could be reduced to one a year, or by 163,000, GSA could realize an annual cost reduction of approximately $284,000.

CONCLUSIONS

GSA supply depots filled many individual requisitions for low-value amounts, many of which were repetitive, and incurred processing costs almost 1-1/2 times their sales value. The large volume of these low-value issues made yearly by GSA depots could be substantially reduced and significant savings in warehouse handling costs realized by establishment of more economical units of issue quantities for low-cost items in GSA's supply catalog.

RECOMMENDATIONS

We recommend that the Administrator of General Services increase the units of issue quantities in the supply catalog for low-value items to quantities either consistent with the minimum commercial standard pack or to quantities repetitively ordered by customers over a short timespan.

CHAPTER 5

NEED FOR GSA TO REEVALUATE CURRENT AUTHORIZATION

FOR BUYING ITEMS IN EXCESS OF ECONOMIC ORDER QUANTITIES

GSA could reduce its inventory investment costs by hundreds of thousands of dollars on a one-time basis and save tens of thousands of dollars annually in warehouse holding costs by eliminating unjustified procurements of items in excess of economic order quantities.

AUTHORIZATION FOR BUYING IN EXCESS OF ECONOMIC ORDER QUANTITIES

GSA regional management centers are required to use the Economic Order Quantity (EOQ) principle to compute depot stock replenishment requirements. The EOQ principle is a mathematical device for arriving at the purchase quantity that will result in the lowest total costs for ordering and holding inventory to meet expected supply requirements. Once economic order quantities are established for items, the purchase of any other quantity will generally increase costs. An exception to this is when substantial price discounts are obtained on large-quantity purchases.

GSA's inventory system provides for procurement of depot replenishment stocks under or over economic order quantity levels if such a condition will result in cost savings or other benefits. If authorized by GSA's Central Management Office, the regional management centers can input a decimal multiplier into their automated programs which will increase or decrease depot stock replenishment requirements in relation to the economic order quantity level. The use of an EOQ multiplier greater than 1.0 results in a buy requirement that exceeds the economic order quantity.

BUYING IN EXCESS OF ECONOMIC ORDER QUANTITIES NOT JUSTIFIED

At the time of our review, GSA had directed use of economic order quantity multipliers of either 1.5 or 2.0 to compute depot stock replenishment buys for 534 items managed by eight regional centers. We found no evidence that GSA had made any studies prior or subsequent to authorization of the multipliers to evaluate the potential cost savings or other measurable benefits, if any, that would result from buying more than the economic order quantities.

As a result of buying more than economic order quantities for the 534 items, the eight GSA regional management centers incurred increased inventory investment and holding costs as follows:

Inventory Management Center	No. of items	One-time increase in inventory investment	Annual increase in holding costs
Kansas City Tool Center	137	$418,837	$ 90,567
Washington, Region 3	349	399,869	103,023
New York, Region 2	12	28,290	7,437
Atlanta, Region 4	4	4,363	1,265
San Francisco, Region 9	21	38,879	9,592
Chicago, Region 5	2	5,145	1,286
Seattle, Region 10	8	12,178	3,031
Fort Worth, Region 7	1	1,176	294
	534	$908,737	$216,495

The additional $216,495 in annual inventory holding costs would be reduced by an estimated $125,625 in annual inventory ordering costs because use of an EOQ multiplier greater than 1.0 decreases the number of annual replenishment orders for these items. Thus, the additional costs to the Government was about $91,870 annually.

Ordering stocks in multiples of economic order quantities can result in lowering the unit cost of the stocks in some instances because of price breaks available on procurements in large quantities. However, this was not the case for the 534 items in question because the majority of these items were purchased under national term contracts. Under this type of contract, a fixed unit cost is established based on a minimum order quantity over a period of time.

In order to determine whether buys of the 534 items resulted in measurable benefits other than cost savings, we made a detailed analysis at the Kansas City Tool Center. This Center managed 137 of the 534 items and experienced the largest amount of increased costs from buying in excess of economic order quantities.

Measurable benefits not apparent at Kansas City Tool Center

In August 1976, GSA's Central Office directed the Kansas City Tool Center to use economic order quantity multiplier factors of either 1.5 or 2.0 for 137 items on the basis that these were high-demand items which were putting an ever-increasing workload on item managers. GSA's Central Office asked the Kansas City Tool Center to monitor the impact that the use of these multipliers had on item managers' workload and to report by November 1976 on whether expected benefits were being achieved. In November 1976 the Center requested a 9-month delay to August 1977 in reporting because of other priority work. As of the end of August 1977, th Center had still not made this evaluation.

We found that the use of the economic order quantity multipliers in computing depot replenishment stock buys for the 137 items had no measurable impact on the workloads of item managers at the Center. The 137 stock items are distributed among 21 item managers. These individuals managed a total of 13,205 items. The number of items managed by each manager ranged from 27 to 1,100 and the number of items with economic order quantity multipliers ranged from 1 to 21 for each manager.

The individual managing 27 items had 1, or 4 percent of his items affected by a multiplier. Likewise, the manager responsible for 409 items had 21 or 5 percent of his items affected by multipliers. Therefore, as a percentage of line item workload, the number of items with multipliers is not significant.

To further determine the effect on item manager workload, we randomly selected and reviewed 37 of the 137 items which had economic order quantity multipliers. These items were managed by 15 individuals who had responsibility for 123 of the 137 items. Each of these managers was responsible for an average of 675 items, including an average of 8 with multipliers. Ten of the 15 item managers said that overall workload had not decreased since the multiplier was initiated in August 1976. The remaining five were uncertain, but felt their workloads were manageable without the use the multipliers.

CONCLUSIONS

GSA management directed the use of EOQ multipliers without making any analyses or studies to assure that reduced costs or other measurable benefits would be realized. GSA could realize significant savings in future inventory investment and holding costs by not authorizing larger than economic order quantity buys to replenish depot stocks unless justified by prior studies showing that cost savings or other measurable benefits will result.

RECOMMENDATIONS

We recommend that the Administrator of General Services:

--Reevaluate current item authorizations for larger than economic order quantity buys to replenish depot stocks and rescind those authorizations not justified by demonstrated overall cost savings or other measurable benefits.

--Restrict future item authorizations for larger than economic order quantity buys to those instances justified by realistic projections of cost savings or other measurable benefits.

CHAPTER 6

SCOPE OF REVIEW

We reviewed and examined GSA policy, procedures, and practices at GSA headquarters and regional offices for (1) making direct delivery shipments from vendors to customers, (2) identification and cancellation of stock excess due-; (3) making small dollar issues out of depot stock, and (4) procuring certain items in multiple Economic Order Quantities. We also interviewed GSA headquarters and regional officials responsible for the implementation and operation of these programs.

We made our review during December 1976 to September 1977. Detailed work was done at the following locations:

--Federal Supply Service Headquarters, Washington, D.C.

--National Tools Center Headquarters, Washington, D.C.

--National Furniture Center, Washington, D.C.

--Federal Supply Service, Region 2, New York, New York

--Federal Supply Service, Region 3, Washington, D.C.

--Federal Supply Service, Region 6, Kansas City, Missouri

--National Tools Center, Commodity Division II Kansas City, Missouri

At the conclusion of our fieldwork, we held exit conferences with responsible officials of each audited activity. We also briefed cognizant officials of GSA's Central Office on our findings and conclusions.

(943030)