INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202

REPORT
NO. 92-027

December 19, 1991

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)

SUBJECT: Quick-Reaction Report on the Army's Adjustment of Wholesale Inventory Levels After Operation Desert Storm (Project No. 1LE-5003.01)

Introduction

As part of the Audit of Requisitions in Support of Operation Desert Storm (Project No. 1LE-5003), we reviewed Army inventory control points' (ICPs') adjustments to logistical requirements after hostilities ended. One of the objectives of the overall audit was to evaluate the effect of Operation Desert Shield/Storm (ODS) requisitions on the DoD wholesale supply system's inventory requirements. The Army ICPs initiated large cutbacks in previously approved purchases after ODS. However, our review revealed that additional cutbacks could be made because logistical requirements for stocks were not adequately adjusted to exclude ODS demands and to allow wholesale inventories to deflate to levels appropriate to support peacetime operating forces.

Background

The Army has six ICPs that manage spare and repair parts. The ICPs procure spare and repair parts based on forecasted requirements generated by the Requirements Determination and Execution System (the System). One of the primary factors used by the System to forecast future requirements and to compute inventory stockage objectives is the average monthly demand (AMD). The AMD for an item is usually based on the last 24 months of demands or a combination of an engineered factor based on expected maintenance failures and the actual demands, if the item has less than 24 months of demand history.

To ensure adequate supply support for ODS, the Army Materiel Command (AMC) authorized the ICPs to adjust a number of elements in the System that would cause larger stockage objectives and therefore increase inventory levels. Among the authorized adjustments, the AMD could be based on the most recent 12 months of demand history instead of 24 months of demand history and the ICPs could categorize all requisitions (recurring and non-recurring) for ODS as recurring demands.

Upon cessation of hostilities, ICPs were to adjust inventories to support future peacetime requirement levels. The AMC directed that AMDs used for requirements' computations be established using a 24-month demand period and that procurement actions be reduced to conform to the newly computed requirement levels. Our review of three of the six ICPs disclosed that the Tank-Automotive Command, the Missile Command, and the Aviation Systems Command promptly initiated actions to reduce procurements after hostilities ended. By June 1991, those ICPs reduced or canceled procurement actions valued at about $336.5 million.

The AMC officials advised us that they expected that the broadening of the demand base period from 12 months to 24 months would mitigate the effect of ODS demands in the computation of the AMD and our review of a small number of items disclosed that the broadened base usually had that effect. However, because the AMDs of some items were not based on a 24-month period, we asked the three ICPs to identify those items that were based on less than a 24-month period with purchases in process (contracts not yet awarded). The three ICPs identified 2,403 items with purchases in process valued at $580.6 million (Tank-Automotive Command, 1,018 items valued at $186.8 million as of April 18, 1991; Missile Command, 283 items valued at $117.9 million as of April 24, 1991; and Aviation Systems Command, 1,102 items valued at $275.9 million as of July 19, 1991).

We judgmentally selected 40 of the 2,403 items (12 at Tank-Automotive Command, 17 at Missile Command, and 11 at Aviation Systems Command) to determine whether AMDs had been adjusted to minimize the effect of ODS demands on forecasts for future requirements. For 19 of the 40 items, 15 percent or more of the computed AMDs were based on ODS demands. We determined the influence of ODS demands on the AMDs relating to procurements in process ($47.6 million) for the 19 items and computed alternate AMDs using 3 other bases, 12-month demands without ODS demands and 24-month demands with and without ODS demands. We recalculated forecasted requirements for the items using the highest AMD among the three alternates and the most recent AMD for the item before ODS, and using existing program change factors. A list of activities visited is in Enclosure 4.

Discussion

Although the ICPs took aggressive actions to reduce procurements after ODS hostilities ended, the quantity of materiel on purchase requests (procurement action initiated, but contracts not awarded) at the ICPs was excessive for some items, based on future peacetime requirements. Purchase of the materiel could result in unnecessary or premature investments in

inventory. Our review of 40 items showed that 19 items with $47.6 million of purchases in process, had appreciable ODS demands and 12 of the 19 items had purchases of materiel valued at about $14.0 million that were in excess of forecasted peacetime requirements. This occurred primarily because the demand bases were not always expanded to a 24-month base period, and the shorter demand bases that were used in forecasting requirements were not adequately adjusted for the effect of ODS requisitions.

Demand base. The peak demands for ODS occurred from August 1990 through January 1991. When demands of that 6-month period are included as part of the demand base used to forecast an item's future requirements, ODS-related demands can adversely affect wholesale inventory investments.

If the demand base period used in the development of a requirements forecast includes demands for ODS that are not representative of what may be expected to support peacetime operating forces, the computed AMD and stockage objective may be significantly overstated and could result in premature or unnecessary purchases of inventory.

Of 19 items with appreciable ODS demands, purchases of $17 million for 9 items were predicated, in part, on AMDs that were derived from a 12-month demand base period. As a result, the AMDs for the items were from 15 percent to 155 percent greater than if the AMDs of the items had been based on demands over a longer period, as prescribed by AMC, or had been adjusted to exclude the effect of ODS demands. Had the requirements forecasts for those nine items been based on AMDs that discounted ODS demands, the purchase quantities could have been reduced by $9.3 million. For example, as of March 28, 1991, the requirements objective for a digital multiplier, National Stock Number (NSN) 7025-01-263-1815, was calculated at 195 units using an AMD of 6.66 units that was based on the latest 12 months of demands. We recalculated the requirements objective using a 24-month base period. This resulted in an AMD of 4.41 units and a requirements objective of only 138 items. The net effect of revising the demand base period from a 12-month to a 24-month base reduced forecasted requirements by 57 items, valued at $1.46 million. A detailed comparison of AMDs for the nine items using different length demand base periods and different considerations of ODS demands is in Enclosure 1.

The ICPs neither expanded the demand base period to 24 months, as instructed by AMC, nor excluded ODS demands in accordance with the guidance of the Department of the Army, as described below. We recognize that special circumstances might warrant an item's AMD to be based on a shorter period than 24 months, even though 24 months of demand history are available.

However, if a shorter base period is appropriate, adequate consideration should be required and given to the exclusion of ODS demands in the base period.

Our review indicated that the ICPs did not adequately consider the effect of ODS demands on AMDs developed from shorter demand base periods. For example, the Aviation System Command calculated the AMD for a nozzle assembly, NSN 1560-01-172-5044, at 9.58 units, based on 118 demands in the preceding 12 months. However, the 118 demands included 73 units for ODS support. Had the ODS demands been eliminated from the base, the AMD would have been 3.75 units. By comparison, the System's computation of AMD for this item before ODS was 4.0 units and the item manager calculated it at 2.66 units. Had the ICP used an AMD of 3.75 units in its requirements determination process, its purchases in process of 470 units could have been reduced by 362 units valued at $2.5 million. We attributed this condition to a lack of specific guidance to and oversight of the ICPs on how to avoid an adverse effect of ODS demands on requirements' forecasts. The Army's guidance was not specific enough to be used to extract ODS demands from the demand data base.

In April 1991, the Army directed that the ICPs' automated supply systems be programmed to extract ODS peak demands from the demand data base to enable the systems to return to calculating requirements at predeployment peacetime operating levels. Specific implementing instructions were not provided. In response to the Army's guidance, AMC developed a System change that identified the ODS demands that originated in the Southwest Asia area. Additionally, through the use of program change factors, the ICPs applied decreasing weights to those demands over a period of time so that there would be a steadily diminishing effect of ODS demands on forecasts for future requirements. However, the System change was not implemented by all of the ICPs for all items affected by ODS. Further, the System change did not extract ODS demands that originated with CONUS units, and the System change was not adopted for any item at the Aviation Systems Command. Only 3 of the 10 items at Tank-Automotive Command and Missile Command, for which we concluded that requirements were overstated, had the Southwest Asia area breakout.

Other Causes. The effect of ODS demands did not exceed 15 percent of the items' AMD for the remaining 3 of 12 items with overstated requirements. The primary causes for excessive procurements on the three items were the use of an unreasonably low unserviceable return rate and the inappropriate exclusion of on hand repairable assets in the calculation of future requirements. This report does not contain any recommendations on these matters because they were not peculiar to ODS requirements.

General conditions on requirements' determinations at ICPs will be addressed in our report on the Audit of Requirements for Current Procurements of Repairable Items for Wholesale Inventories (Project No. OLE-0078).

Summary. Army ICPs are procuring and will continue to procure wholesale stock for items affected by ODS demands. Because the investment in these items may be substantial, the appropriateness and timeliness of adjustments made to compensate for the effect of ODS requisitions on forecasted peacetime requirements is critical to minimize wholesale inventory investments.

We are specifically not advocating the use of a 24-month demand base in our recommendations to the Army, because by the time the recommendations are implemented, the ODS period will be 12 months in the past and the use of a 12-month base would be more effective in minimizing the effect of ODS requisitions. The cited examples were to illustrate the relative impact at the time of our audit work.

Recommendations for Corrective Action

We recommend that the Department of the Army, Deputy Chief of Staff (Logistics):

1. Establish specific guidance on the exclusion of Operation Desert Shield/Storm demands from the computation of forecasted peacetime requirements objectives and require feedback from the inventory control points on the implementation of the guidance.

2. Direct that the Army's inventory control points recalculate forecasted requirements for items affected by Operation Desert Shield/Storm demands using the new guidance and adjust purchase quantities accordingly.

Management Comments

The U.S. Army Deputy Chief of Staff for Logistics responded to our draft quick-reaction report on November 15, 1991. He concurred with the recommendations but did not identify specific implementing actions or completion dates. He agreed with $9.8 million of the $14 million potential quantifiable monetary benefits after discounting our estimate by 30 percent to eliminate surcharges included in standard prices. The complete text of the Army's response is in Enclosure 2.

Audit Response

We consider the Army's comments to Recommendation 1. to be nonresponsive. The Army did not identify the specific guidance that it had provided to its ICPs for excluding ODS demands from the computation of forecasted requirements. The Army's comments to Recommendation 2. were also nonresponsive because it did not provide specific information to indicate that it had directed the ICPs to recalculate requirements affected by ODS demands, using the new guidance, and to adjust purchase quantities. We agree with the Army that the quantifiable monetary benefits in our draft report would be about $9.8 million if our estimate of $14 million was adjusted by 30 percent to remove estimated surcharges from standard prices. However, we believe it is appropriate to base our estimates on standard prices because a reduction in purchases of materiel should be accompanied by an avoidance of the costs that the surcharges represent. If there is no purchase, there is no cost to purchase or to hold materiel.

DoD Directive 7650.3 requires that all audit recommendations and potential monetary benefits be resolved promptly. Therefore, we request that the Army reevaluate its position and provide specific information and completion dates for implementation of Recommendations 1. and 2. and identify the savings resulting from its review of forecasted requirements as a result of implementing Recommendation 2. Final comments on the unresolved issues in this report should be provided by January 7, 1992.

The courtesies and cooperation extended to the audit staff are appreciated. If you have any questions regarding this quick-reaction report, please contract Mr. James Helfrich, Program Director, or Mr. John Issel, Project Manager, at (614) 238-4141 (DSN 850-4141). Audit team members are listed in Enclosure 5. Copies of the final report are being distributed to the activities shown in Enclosure 6.

Edward R. Jones
Deputy Assistant Inspector General
for Auditing

Enclosures

cc:
Secretary of the Army

COMPARISON OF AVERAGE MONTHLY DEMAND RATES FOR SELECTED ITEMS [1/]

NSN	Standard Unit Price	Average Monthly Demand (AMD)										
		12-Month Demand Base						24-Month Demand Base				
		Before ODS	With ODS Demands	Without ODS Demands	Difference in AMD			With ODS Demands	Without ODS Demands	Difference in AMD		
					No.	Percent	Value			No.	Percent	Value
	A	B	C	D	E (C - D)	F (E ÷ D)	G (A x E)	H	I	J (H - I)	K (J ÷ I)	L (A x J)
AVSCOM [2/]												
1560-01-172-5044	$ 6,931	4.00	9.58	3.75	5.83	155.47	$ 40,408	6.71	3.69	3.02	81.8	$ 20,932
MICOM [3/]												
6920-01-169-8776	13,523	3.08	3.76	3.26	0.50	15.3	6,762	3.30	3.05	.25	8.2	3,381
1270-01-265-6947	111,626	8.16	10.0	5.42	4.58	84.5	511,247	8.58	6.37	2.21	34.7	246,693
1270-01-259-0154	9,180	2.92	5.71	2.46	3.25	132.1	29,835	3.90	2.30	1.60	69.6	14,688
7025-01-263-1815	25,620	2.83	6.66	3.58	3.08	86.0	78,910	4.41	2.98	1.43	48.0	36,637
1270-01-211-5639	7,921	N/A [4/]	13.16	8.41	4.75	56.5	37,625	N/A	N/A	N/A	N/A	N/A
4730-01-305-7672	1,572	.16	.64	.37	0.27	73.0	424	N/A	N/A	N/A	N/A	N/A
TACOM [5/]												
6110-01-285-9848	3,609	N/A [6/]	17.97	13.47	4.50	33.4	16,241	16.93	14.67	2.26	15.4	8,156
2815-01-280-2961	12,974	3.50	8.83	4.50	4.33	96.2	56,177	4.91	3.41	1.50	44.0	19,461

1/ Sampled items for which average monthly demand rate included ODS demands that were more than 15 percent greater than an item's average monthly demand rate that excluded ODS demands.
2/ Aviation Systems Command
3/ Missile Command
4/ Demand history prior to ODS not representative because major design change expected to improve reliability.
5/ Tank-Automotive Command
6/ New item, current AMD based on demands received for this item and substitute items.

ENCLOSURE 1

MANAGEMENT COMMENTS: DEPARTMENT OF THE ARMY

Final Report

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS
WASHINGTON, DC 20310-0500

DALO-SMP 14 NOV 1991

MEMORANDUM THRU

DEPUTY CHIEF OF STAFF FOR LOGISTICS

for ~~DIRECTOR OF THE ARMY STAFF~~ MARCIA R MORGAN LTC, GS, ADAS

ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS, LOGISTICS AND ENVIRONMENT)

FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING, DEPARTMENT OF DEFENSE

Eric A Orsini
Assistant Secretary of the Army

SUBJECT: Draft Quick-Reaction Report on the Army's Adjustment of Wholesale Inventory Levels After Operation Desert Storm (Project No. 1LE-5003.01)--INFORMATION MEMORANDUM

1. Reference DODIG memorandum, 29 Oct 91, subject as above forwarded by memorandum, SAIG-PA, 30 Oct 91, subject as above (Tab P).

2. Army comments reference subject report are as follows:

a. Disagree with the projected quantifiable monetary benefits of $14 million. DODIG report used the AMDF prices which included the surcharge rate which is approximately 30 percent. Actual purchase price reductions would exclude the surcharge; therefore, the estimate is overstated by $4.2 million and the maximum monetary benefits would be $9.8 million.

b. Report findings indicate that not all Inventory Control Points (ICPs) implemented the system change to diminish the impact of Operation Desert Storm demands on requirements. When the inspection occurred in Apr 91, the ICPs were implementing the change. Subsequently, all ICPs have implemented it.

c. Concur with recommendations.

Encl

James W. Ball
JAMES W. BALL
Major General, GS
Director of Supply
and Maintenance

Enclosur deleted

SUMMARY OF POTENTIAL MONETARY AND OTHER BENEFITS RESULTING FROM AUDIT

Recommendation Reference	Description of Benefits	Amount and/or Type of Benefit
1. and 2.	Economy and Efficiency. Improve operations by avoiding premature or unnecessary investments in wholesale inventory.	Funds Put to Better Use. The report identifies about $14 million in quantifiable monetary benefits. Additional unquantified monetary benefits should result from the Army's implementation of the recommendations.

ACTIVITIES VISITED OR CONTACTED

Department of the Army

Office of the Deputy Chief of Staff (Logistics), Washington, DC
Headquarters, Army Materiel Command, Alexandria, VA
Army Aviation Systems Command, St. Louis, MO
Army Missile Command, Huntsville, AL
Army Tank-Automotive Command, Warren, MI

AUDIT TEAM MEMBERS

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Commander, Army Materiel Command
Commander, Aviation Systems Command
Commander, Missile Command
Commander, Tank-Automotive Command

Non-DoD Activities

Office of Management and Budget
U.S. General Accounting Office, NSIAD Technical Information Center

Congressional Committees:

Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Senate Ranking Minority Member, Committee on Armed Services
House Committee on Appropriations
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House Ranking Minority Member, Committee on Appropriations
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House Subcommittee on Legislation and National Security, Committee on Government Operations