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

LOGISTICS AND COMMUNICATIONS DIVISION

B-133025

JUN 17 1974

The Honorable
The Secretary of Defense

Dear Mr. Secretary:

GAO is terminating its review of the Army's Routine Economic Airlift (REAL) program because the Army has suspended the program pending correction of problems which have prevented REAL from achieving planned objectives. This report summarizes our observations on the program, many of which we discussed with Army officials during our review.

The purpose of REAL was to improve the responsiveness of the Army's logistic support system and effect savings by reducing the stocks required for pipeline and onhand inventories in overseas theaters. We believe that the economic airlift concept--wherein inventory cost reductions more than offset the cost of air transportation--is valid and will lower costs and improve the effectiveness of the Army's logistic support program if the Army can solve the problems it had in initially operating the program.

The problems we have identified should be considered during the reassessment of the REAL program. For example, we found that the data used in selecting items for routine air shipment was not realistic or valid and that the universe of items deemed eligible to be considered for REAL was unnecessarily restrictive. In addition, the Army did not implement a program to evaluate the effectiveness of the REAL operation. We feel these problems contributed significantly to the program's failure.

Our examination of the REAL program involved work at Headquarters, Department of the Army; the Army Materiel Command; the Military Airlift Command (MAC); two national inventory control points and three Army depots in the continental United States (CONUS); and the U.S. Army, Pacific, in Hawaii.

we did not study the REAL program in the European theater. Details concerning our study and observations follow.

BACKGROUND

In past years, the Army's use of airlift for moving materiel between CONUS and overseas has generally been in response to high-priority requisitions. The development of heavy lift cargo aircraft and their introduction into the MAC fleet gave a new potential to deployment and resupply operations.

In July 1969, the Army Chief of Staff directed that the Army logistics systems be reviewed to identify means of taking advantage of the airlift potential. The REAL program was developed for that purpose. Its objectives were to

--effect savings by reducing the stocks required for pipeline and onhand inventories through use of airlift to resupply overseas theaters;

--give the national-level inventory managers greater item visibility and in-transit control and enable better management of worldwide inventories;

--improve supply responsiveness by quickly moving supplies from CONUS to overseas destinations; and

--maintain and improve materiel readiness.

Initially, 442 items included in the Army's selected items management system were selected for the REAL program, and shipments of these items from CONUS depots started in September 1971. By January 1973, the program had been expanded to include about 9,000 expendable items managed by the Army.

Most of the materiel airlifted under the REAL program was directed to the Far East. This is illustrated in the following statistics which show the quantities of REAL materiel shipped during the period January 1972 through June 1973.

Destination	Short tons
U.S. Army, Europe	880
U.S. Army, Pacific	4,060
U.S. Army, Alaska	154
U.S. Army Forces, Southern Command	87
Total	5,181

IMPROVEMENT NEEDED IN SELECTING ITEMS FOR AIRLIFT

At the time the increased airlift potential developed, the Army did not have a method for identifying items which could be shipped by air on a routine economic basis to overseas destinations. Therefore, DOD awarded to the Research Analysis Corporation (RAC) a contract which stipulated that RAC develop formulas to select items which could be economically shipped by air.

The criteria RAC developed were:

1. The items must be authorized for stockage overseas and must have a history of recurring demand.

2. The item must be in a buy position in the immediate (2-year) future so that stockage and pipeline reductions can result in documented procurement savings.

3. The price, weight, and cube data and requirement forecast for the item must make it eligible to produce savings at the appropriate MAC tariff rate when the RAC formula is applied to it.

The principal factors in the RAC formula were order-ship time (OST), user demand, and transportation costs. However, in applying the formula the Army used data which was not realistic or valid. As a result, many of the items selected for airlift under the REAL program offered no opportunity for savings and should never have been included in the program.

OST

Under the RAC formula, the potential reduction in OST as a result of airlift was a major factor in determining whether an item should be included in the REAL program.

In the initial application of the REAL formula, the data used for the OST factors was:

	OST (days)		
	Europe	Republic of Vietnam	Pacific
Surface	72	82	82
Air	15	16	16
Difference	57	66	66

These figures did not provide a sound, realistic basis for evaluating the effects of REAL on pipeline costs. Although OSTs for surface shipments represented average time frames based on actual experience, air shipment OSTs were uniform materiel movement and issue priority system standards which were never achieved. By using standards which were lower than actual time frames experienced, the differences between surface and air shipments were overstated and could have resulted in some items being erroneously selected for airlift under the REAL program. The OSTs for air shipments were later changed to 60 days for Europe and 58 days for the Pacific on the basis that the Army's direct support system was achieving these OSTs by air. These figures, however, were also erroneous since the direct support system OSTs represented combinations of both air and surface shipments.

We found also that the surface shipment OST used in the initial selection criteria for the Pacific was somewhat understated because it represented an average of OSTs to Hawaii, Okinawa, Korea, Japan, and Thailand. This would understate the surface shipment OST to the last four countries since Hawaii has a surface shipment OST much less than that of the more distant locations. Actual surface and air shipment OSTs for each destination country should have been used to provide more valid item selection criteria.

Demand data

The Army used stock requisitioning objectives instead of actual item demand data in the RAC formula. As a result, many items were selected for REAL shipment which had no recent demand history. Also, some items selected for REAL were not authorized for stockage in the Pacific theater.

Using statistical sampling techniques, we selected 201 items from the REAL universe and checked to see whether the items were stocked in the 3 major Army depots in the Pacific theater. The results of our tests were startling. Of the 201 items, only 4 were stocked in Korea, 19 in Okinawa, and 59 in Hawaii. Even these items offered little opportunity for reducing established requisitioning objectives because most of the items represented stocks positioned for safety levels, concurrent spare parts, and war reserves. The REAL concept does not apply to stocks held for these purposes because airlift offers no potential for reducing pipeline costs for contingency-type stocks which have little or no recurring demand.

When advised of our findings, Army officials stated that the items may have been selected for REAL on the basis of demands originating in the European theater, which was not included in our study. Recognizing that this was plausible, we asked the Army to screen our sample items against previous European theater demands. This screening disclosed that 49.7 percent of the items had no previous demand history even in Europe. In any event, we do not believe that item demand in one theater justifies airlifting an item to all theaters regardless of use.

Army officials agreed and told us that, in the future, items selected for REAL will be identified on the basis of theater demands to prevent airlifting items on which savings cannot be achieved.

Transportation costs

Another factor which significantly influenced the selecting of items for REAL was the difference between air and surface transportation costs used in the REAL formula. Because estimates and averages were used extensively, we questioned the validity of costs applied to the selection formula.

We could not find out precisely what items had been included in the transportation costs because the official who developed them had retired. It appears, however, that comparisons were made without considering all transportation segments and that too wide a range of distances were averaged together. For example: (1) for air transportation to Vietnam, only the MAC tariff was used, which excluded the landhaul costs of moving cargo to and from aerial ports, and (2) for the Pacific theater (excluding Vietnam), average costs included shipments to Hawaii and Korea--among others--which are over 4,000 miles apart.

We believe that the Army should direct its attention to these problems as it evaluates and seeks ways to improve the REAL program.

We would like to point out also that the Army considers the MAC tariff rate as its comparative airlift cost when evaluating the economies of air and surface transportation. This does not recognize the fact that much of MAC's airlift capability actually represents free space as far as additional cost to the Government is concerned. When the Army pays MAC for airlift space that would otherwise fly empty, it is merely transferring funds from one Government agency to another. However, when the Army ships cargo via the Military Sealift

Command because it appears to be less expensive, the command normally procures commercial container service and the Government's cost is actually increased. Accordingly, from the overall Government standpoint, it would be more economical for the Army to use available space on MAC aircraft than to procure commercial surface transportation.

GAO has from time to time made studies, issued reports, and participated in discussions with various officials in DOD and the military services, all leading to improved use of space on MAC aircraft or augmentation aircraft. The use of normal MAC industrial-fund tariff rates in the REAL program is symptomatic, we believe, of problems the military services have in fully using MAC services.

For opportune cargo not normally requiring airlift, the user service views MAC as another transportation mode competing for the service's transportation dollar. If MAC is not cost competitive, the opportune cargo will move via an alternative mode, despite the fact that use of space available on MAC is, in effect, free to DOD as a whole.

DOD should help MAC and the services identify types of cargo which are air compatible but not moving under normal industrial-fund rates. If diverting such cargo from its alternative transportation mode would be cost effective, MAC could provide incentive-type rates to encourage the traffic to move. Alternatively, MAC could experiment with "weight to cube" type incentive rates, which would apply only to cargo not otherwise requiring air shipment. Such rates should be low enough to attract the cargo and still recover the added cost of transporting it. The rates should not be so low as to attract cargo in excess of MAC's capability to lift it.

NEED FOR INVENTORY CONTROL POINTS TO IMPROVE VALIDATION PRACTICES

Other key factors RAC specified for item selection were price, weight, cube, and buy position of items. REAL procedures required national inventory control points (NICPs) to validate this data as well as data on demand. However, the NICPs' validating practices needed strengthening. For example, when most of the 9,000 REAL items were selected in November 1972, one NICP verified items only when one or more of the factors appeared to be in error. At another NICP, the validation process did not correctly assess the buy position of items and thus did not eliminate items which were to be bought (1) in small quantities, (2) for initial provisioning, and (3) as insurance items. An initially provisioned item has no demand history on which to base a requirement, and insurance items

are bought in small quantities to meet contingencies. No inventory or pipeline savings are possible on these types of items.

We could not determine the extent of validation actually done; however, at both NICPs, items were erroneously selected for REAL because incorrect prices were used in the selection process and the validation failed to disclose these errors. Since item data validation is an important control procedure to ensure that potential items actually qualify for airlift, the NICPs should improve their validation practices.

UNIVERSE OF ITEMS DEEMED ELIGIBLE FOR CONSIDERATION FOR REAL WAS UNNECESSARILY RESTRICTIVE

The REAL program was limited to Army-managed expendable repair parts for maintenance support of equipment. By restricting the program to these materials, the Army excluded thousands of items in its logistics system which were candidates for airlift resupply and which offered excellent opportunities for savings in reduced pipeline and inventory investment. For example, reparable assemblies, which are generally high-dollar-value items, were excluded from the REAL program as were common-use items furnished to the Army by the Defense Supply Agency and the General Services Administration. These items make up a large share of the Army's logistics requirements.

REAL SHIPMENTS UNNECESSARILY DELAYED AT INTERMEDIATE CONSOLIDATION POINTS

Some REAL shipments were delayed in CONUS because they were processed through intermediate consolidation points--New Cumberland depot on the east coast and Sharpe depot on the west coast--before they were forwarded to the MAC aerial port of embarkation.

Shipping REAL items to intermediate consolidation points unnecessarily delays the shipments since some materiel is consolidated at the aerial ports anyway and MAC tariff rates include charges for the consolidation services.

Army officials defended shipment through the intermediate consolidation points on the basis that shipments might be unduly delayed if consolidated at the MAC aerial ports. They said aerial ports can hold shipments up to 3 days for consolidation, whereas a standard of 2 days has been established for

consolidation delay at the Army's intermediate points. They also said that this procedure would require an additional sorting of the shipment at overseas terminals for shipment to final in-country destinations.

We do not agree with the Army's position. The Army has generally exceeded the 2-day standard for handling shipments at its intermediate consolidation points. In addition, air shipments consolidated at the intermediate storage points have contained materials destined for multiple consignees.

Army officials agreed to look into the problem of delays at the intermediate consolidation points as they consider re-implementation of the REAL program.

NO BASIS FOR MANAGEMENT EVALUATION OF PROGRAM RESULTS

The Army did not structure a management information system to accumulate data on costs and savings attributable to the REAL program. Costs associated with the program were absorbed by other Army logistics programs, such as the direct support system and air intensive management items, and there was no evidence of documented savings attributable to the program.

We believe that many of the problems which we have identified would have surfaced for management attention if the Army had implemented a system to monitor the operation of the REAL program in terms of performance, cost, and savings.

OTHER OBSERVATIONS

In assessing the REAL program, the Army should consider several other problems we noted. Although we did not fully explore these problems, we believe they contributed to the program's failure.

--It appears that the Army did not indoctrinate field activities sufficiently when planning and implementing the REAL program. Personnel in the field often did not understand the program's concept, purposes, and procedures. In some instances, this led to handling practices which tended to defeat the program's objectives.

--The electronic data processing systems used in the Army's direct support units did not provide the flexibility needed to compute separate stockage objectives

for air and surface shipments on the basis of different OSTs. Savings could not be realized, therefore, by means of pipeline inventory reductions because the units could not take advantage of reduced OSTs achieved by REAL. It may not be economically feasible for the units to compute OSTs for airlifted items, and we are not recommending that their data systems be upgraded for this purpose. However, the NICPs perhaps could perform this function for the units.

--REAL shipping documents were marked "air mandatory" but shipment priorities were not upgraded to require expeditious processing. Most shipments were processed on the basis of priority and not on the air-mandatory statement on the document. In the future, the priority of REAL requisitions should be upgraded to ensure expeditious handling of the items at CONUS depots and overseas processing points.

Army officials said that this was not feasible because lower priority requisitions, if upgraded, could preempt a requisition for materiel having a genuine high priority because it was needed to maintain an acceptable materiel readiness status. The officials agreed, however, that REAL requisitions probably could be upgraded to higher priority after materiel release orders are received at storage depots.

CONCLUSIONS

The problems discussed in this report had a crippling effect on the REAL program and contributed greatly to its failure. However, the REAL concept is valid and offers considerable potential for economy in the Army's total distribution system and improved management of its logistics resources. The concept also offers opportunities for better visibility, management, and control of materiel because it eliminates the need for overseas field management of large physical inventories.

Although we did not obtain formal written comments from the Army, we discussed our observations with appropriate Army officials and considered their comments in preparing this report. The Army generally agreed with our observations, except as noted.

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We do not plan further work on the REAL program until the Army has had an opportunity to improve and reimplement the

program. However, we would appreciate receiving your comments on the matters discussed in this report.

We are sending copies of this report to the Director, Office of Management and Budget, and to the Secretaries of the Army and the Air Force.

Sincerely yours,

F. J. Shafer

F. J. Shafer
Director