

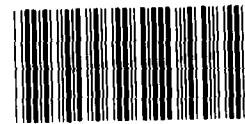
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REPORT BY THE U.S.

General Accounting Office

Review Of Oklahoma City Air Logistics Center's Dekinging Policy

The Oklahoma City Air Logistics Center is reviewing its repair kits when they come up for reprocurement. Its goal is to eliminate, from the kits, expensive parts already separately managed by the government and parts which are procured from a sole source or are source controlled. This practice should decrease costs to the government by increasing the quantity buys on parts already centrally managed and facilitating increased competition on restricted source parts. The Logistics Center's actions are prudent and reasonable and consistent with GAO's past recommendations.



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GAO/NSIAD-85-89
JULY 22, 1985

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

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-211529

The Honorable John Glenn
United States Senate

Dear Senator Glenn:

This letter is in response to your request that we review the Oklahoma City Air Logistics Center's (OCALC's) dekitting program. You expressed concern that dekitting might result in higher cost to the government. You also asked us to look at the justification for this program and to determine who authorized it.

OCALC's dekitting program involves reviewing kits when they come up for reprourement to identify those parts which should be removed from kits because they are managed by the Department of Defense (DOD) as individual parts, procured from a sole source, or are source controlled.¹ A decision is then made as to whether the remaining parts should be retained in a kit.

A repair or overhaul kit is a package of the parts, bits, and pieces that would be needed to perform a routine repair or overhaul. Kits are procured from contractors that purchase the kit parts and assemble the kits. The kit concept was adopted by the Air Force about 30 years ago to overcome problems caused by (1) parts shortages and (2) the need to manage a multitude of small parts in a nonautomated environment.

The dekitting program was initiated in 1981 by OCALC's Director of Materiel Management in response to (1) changes in the Air Force Logistics Command (AFLC) regulations directing that parts which are sole source or source controlled not be included in kits and (2) our report² which recommended that DOD centrally managed parts not be procured from modification kit suppliers.

¹A source controlled part is one which can only be purchased from one or a limited number of sources specified, by the prime equipment contractor, in the engineering data.

²Improved Management of Air Force Modification Program Can Save Millions (PLRD-81-5, Mar. 16, 1981).

You also asked us to determine what effect the dekitting decision had on the government's costs. We could not do this because the available data was insufficient to make this determination. We discussed the difficulties of acquiring reliable cost data with representatives of your Office and we agreed that it was not feasible for us to pursue this portion of your original request. However, dekitting appears to provide savings opportunities through consolidated purchasing, increased competition, and the use of reconditioned parts. Also, in discussing this issue with government and commercial maintenance personnel, we were told that the use of kits resulted in the wasteful disposal of unused or serviceable kit parts which cost more than any savings gained from the convenience offered by kits.

In terms of savings, the current kits contain expensive or source controlled parts, many of which are already individually managed by DOD inventory control points (ICPs).³ The requirements for kit parts are not known to ICP managers. If known, these managers could consolidate them, thereby facilitating larger quantity buys. Quantity buys increase the potential for savings, while at the same time offering additional savings opportunities through competitive purchases. In addition, kit suppliers' labor costs, general and administrative expenses, and profits could be avoided by going directly to the manufacturer.

Kits also result in waste since not all parts contained in a kit need to be simultaneously replaced. In this regard, serviceable parts from components being serviced are sometimes discarded, or new parts in the kits are discarded if the corresponding component parts do not need to be replaced. Rarely is there any effort to reclaim parts through cleaning and reconditioning as long as the kit contains the parts. For example, many of the parts in the kits we reviewed are bearing sets, which are all normally replaced during overhaul. No attempt is made to reclaim bearings as long as kits are used which contain a full set of bearings. Reclaimed parts cannot readily be used in conjunction with kits because after reclamation the parts would need to be preserved, packaged, stored, and ultimately shipped to a kitter as government-furnished equipment. Managing individual parts by DOD ICPs should eliminate this waste since only parts which had to be replaced would be replaced and there could be greater emphasis on reusing serviceable parts.

In addition, we found that to satisfy the convenience element associated with repair kits, bench stock procedures could be used effectively in component overhaul. Bench stock

³ICPs such as OCALC are purchasing centers which are responsible for requirements computation, procurement direction, distribution management, and disposal direction on parts assigned.

procedures are used in the overhaul of identical or similar assemblies on a workbench, using parts which are stored in nearby bins.

In summary, we believe the advantages resulting from the dekitting program should more than offset any convenience that might result from continuing to buy centrally managed parts in kits. Also, bench stock procedures can be used as an effective alternative to provide convenience for component overhauls.

As agreed with your staff, we provided draft copies of this report to DOD and to G.K.S., Incorporated, for comment. DOD agreed with the report in its entirety. (See app. IV.) G.K.S., Incorporated's comments were received too late for inclusion into this report. We will, however, address them in a separate letter to you.

We are sending this report to the Chairman, Senate Committee on Governmental Affairs. Copies are also being sent to the Secretaries of Defense and Air Force and to other interested parties upon request.

Sincerely yours,



Frank C. Conahan
Director



REVIEW OF OKLAHOMA CITY AIR LOGISTICS CENTER'SDEKITTING POLICYBACKGROUND

In an effort to simplify the task of buying parts for maintaining equipment, the Air Force Logistics Command (AFLC) adopted the kit concept of spare parts support in 1955. Under this concept, most of the parts needed for each repair or overhaul of an item of equipment were to be contained in a kit and managed as one item. Other parts not included in the kit were requisitioned separately. The advantages claimed for the kit concept were (1) fewer work stoppages due to parts shortages and (2) fewer individual items to be managed in the Air Force supply system, reducing handling, storage, transportation, and administrative costs. At the time the supply system was essentially a manual operation and many of the parts were not included in the central supply system.

The decisions about kits and their contents usually are made at conferences between representatives of the Air Force and the manufacturer of the equipment to be supported. The manufacturer provides a price list of the parts and estimates frequency of replacement for each part. The parts and quantities to be included in repair kits are selected on the basis of this information and on Air Force experience with similar equipment.

The criteria for including parts in kits is prescribed in the AFLC Regulation 65-42. Although this regulation emphasizes that kits be made up primarily of low-cost parts, it does not provide specific dollar value criteria. In the early years of the kit program, only parts costing up to \$2 and disassembled during repair or overhaul were normally included in repair kits. In more recent years, parts costing up to several hundred dollars (e.g., bearing sets) have been included in repair kits.

As of March 31, 1983, the Oklahoma City Air Logistics Center's (OCALC's) repair kit inventory was over \$137 million (3,118 different kits), while annual demand for the year ending March 31, 1983, was over \$47 million (2,242 different kits). More than half the dollar value of kit components used by OCALC annually are coded as sole-source procurements. OCALC is by far the largest Air Force user of repair kits. The second largest user is the San Antonio Air Logistics Center with a total annual demand of about \$16 million.

ISSUES WHICH PROMPTED THE DECISION
FOR OCALC'S DEKITTING PROGRAM

In 1981 OCALC's Directorate of Materiel Management began evaluating the feasibility of removing source controlled and centrally managed parts from repair kits. This action was prompted by the following factors:

- A change to the AFLC repair parts kits regulation directing that sole-source and source controlled parts not be included in kits. The purpose of this change was to provide inventory control points the opportunity to either introduce or increase competition in procuring these parts, as prescribed in the Air Force Regulation 57-6, High Dollar Spare Parts Breakout Program. This program requires that parts being obtained from a sole source or from sources controlled by the prime equipment manufacturer be subjected to periodic reviews by the inventory control point to determine if parts can be purchased competitively or purchased directly from the actual manufacturer. OCALC repair kits contain many of these types of parts. The inventory control point cannot consider breakout until it has the parts identified by National Stock Number (NSN) and has knowledge of quantities needed and timing.
- Our March 1981 report criticized the Air Force practice of buying modification kits that included parts that were being managed individually by Department of Defense (DOD) agencies. The report showed that by obtaining needed modification kit parts from the Defense Logistics Agency rather than buying them from kitters, the Air Force could avoid kitters' charges, such as general and administrative expenses and profit. Although the Defense Logistics Agency was essentially buying the parts from the same sources as the kitters were, the kitters were billing the government for general and administrative expenses and profit for assembling the parts into kits. We also noted that indirect savings could also be achieved through more effective management by DOD item managers. For example, when parts are purchased by the kit supplier, the DOD item manager cannot combine the kit requirement with the other DOD requirements for the individual parts and take advantage of discounts through volume purchases. We recommended that these parts be obtained through the DOD supply system.

Other factors influencing dekitting

In the early 1960s, DOD formed the Defense Supply Agency, later renamed the Defense Logistics Agency, to manage common DOD parts. The Defense Logistics Agency has gradually assumed management of most of the parts that are contained in OCALC repair kits. This has resulted in dual management of many kit parts--as individual parts by the Defense Logistics Agency and as components of kits by the Air Force. For example, in its dekitting process, OCALC has learned that about 70 percent of the kit parts are centrally managed by DOD supply activities, including the Defense Logistics Agency, Navy Aviation Supply Office, and OCALC.

When the kit concept was introduced in 1955, OCALC's supply system was essentially a manual operation. Throughout the 1960s and 1970s, however, data systems at the OCALC were implemented and improved to the extent that the total manpower involved in repair parts support has been substantially reduced. Chief among these was a system to preposition repair parts at the using repair centers and maintenance inventory control points that are convenient to specific repair shops using the parts.

MANAGEMENT SYSTEM FOR DEKITTING PARTS

Assessments of depot kits scheduled for procurement after September 30, 1983, are being made as their scheduled procurement dates approach to identify and delete from kits all parts with an NSN--managed by DOD as individual parts--and all other parts which are sole source or source controlled. Since the OCALC identifies kit parts only by manufacturers' part numbers, these part numbers must be screened by the Defense Logistics Services Center at Battle Creek, Michigan, to determine if an NSN has been assigned. Once these parts are removed, an analysis is done to ascertain if continuation of the remainder of the kit is justified. If only a few parts are left, the kit is discontinued and the parts are then catalogued into the DOD supply system.

For individual parts with NSNs, OCALC forwards its demand rates and estimated need dates to the appropriate inventory control point which determines the quantities to buy and the timing of purchases. Inventory control points are required to respond by indicating their ability to support the new requirements.

As of January 1984, OCALC had started assessing 541 kits and had completed assessment of 323. The 323 kits contained 9,461 individual parts of which 6,639, or 70 percent, had NSNs. Of the 323 kits, 103 were retained but were redesigned to contain only non-NSN parts. The kits will be assigned new NSNs and bids will be solicited from the same sources that previously expressed an interest in supplying the kits. In cases where kits will be discontinued, OCALC plans to use existing stocks of kits until supplies are exhausted. At this point, it will begin using individual parts from the supply system.

OUR ANALYSIS OF FIVE HIGH-COST KITS CONFIRMS THE NEED FOR DEKITTING HIGH-COST PARTS

Our review of five different depot repair kits with an aggregate annual demand of about \$2.8 million¹ confirmed the need for management action to delete many high-cost, sole-source, and source controlled parts from these kits and also

¹This figure includes the kitters' overhead, profit, administrative costs, and a management fee.

demonstrated the potential for savings available through dekitting. We selected these kits for review because they had high annual demands and were being procured from G.K.S., Inc.² The kits are used in the overhaul of constant speed drives for B-52, KC-135, and F-4 aircraft.

These 5 kits contained 54 individual parts with estimated annual demands that averaged \$41,000 per part. The 54 parts included 49 sole-source or source controlled parts that accounted for 99.9 percent of the kits' parts cost. (See app. III for a more complete analysis of kits selected for review.)

Many kit parts were already
being centrally managed and/or
were contained in other kits

Forty-two of the parts in the selected kits (27 of which were bearing sets), accounting for 95 percent of the total parts cost, had NSNs and were being centrally managed by either the Defense Logistics Agency, the Navy Aviation Supply Office, or OCALC. None of the kit parts were being obtained from these sources. The item managers for the kits were not aware that many parts had NSNs and the general practice was to let the kit supplier buy them.

Many of the parts with NSNs in the five kits we reviewed are also contained in other kits being managed at the OCALC. We found 33 parts in at least 1 other kit and 1 part in 20 other kits. Procurements could be consolidated if these parts were obtained from inventory control points.

Reusing parts can save money

Reusing many of the parts in the kits presents an additional potential for savings. For example, 27 of the 54 parts included in the kits reviewed are bearing sets with demands of about \$1.5 million a year, or 69 percent of the total demand for these kits' parts (see app. III). These bearings are all normally replaced in the constant speed drive assembly being overhauled. No attempt is made to reclaim bearings as long as kits are used that contain a full set of bearings. Through discussions with overhaul technicians and the OCALC bearing shop foreman, we learned that many of these bearings could be reconditioned and reused. On occasion, the bearings had been reconditioned and reused when shortages of kits occurred. The recovery rate of the bearings after reconditioning was 80 to 85 percent. The OCALC has an on-going program to recover bearings

²G.K.S., Inc., is a private contractor that has provided kits to OCALC in recent years. It had expressed concern about the economy of dekitting.

used in other areas (e.g., engine overhaul). OCALC officials said that they will be in a much better position to consider the reuse of parts once they are dekkitted.

Bench stock procedures could have been used for the kits reviewed

Some overhauls or repairs can be accomplished using bench stock procedures rather than repair kits, thus achieving the convenience associated with kits. For example, our discussions with mechanics and equipment and maintenance officials and our observations revealed that for the five kits reviewed, bench stock procedures could be used effectively in component overhaul in lieu of repair kits. Bench stock procedures entail overhauling identical or similar assemblies on a workbench, using parts which are stored in bins nearby. In fact, we found that component overhaul was being performed in one location at workbenches which had sufficient space to bench stock parts needed for overhaul.

KITS APPEAR TO BE WASTEFUL

We contacted an official at an overhaul facility of one of the larger commercial airlines to determine to what extent repair kits were used in the overhaul of its constant speed drives. The official said that repair kits were not used in constant speed drive overhaul or in any other depot level overhauls. The official considered kits to be wasteful because they encouraged the automatic replacement of parts regardless of need. The official also took the position that the waste would be more than any savings gained from convenience offered by kits.

Repair center supervisors at OCALC confirmed that waste was a major disadvantage of kits. Since kit parts have no individual identity in the DOD supply system, there is no convenient way to return unused or serviceable kit parts to inventory. The mechanic often is faced with a choice of discarding either a new part provided in a kit or a serviceable part removed from the component being overhauled. If the part is still serviceable and difficult to remove, the new part is usually discarded. This type of waste is easily avoidable when bench stock procedures are used.

We found that 16 new parts of the 54 parts included in the 5 kits reviewed were discarded more often than they were used. The annual cost of these parts contained in the five kits was about \$161,000. One kit part (totaling \$69,000 from repeated buys) was always discarded.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to evaluate the dekitting program and determine (1) who authorized the program and (2) the justifications for implementing the program. We

- reviewed our prior reports;
- interviewed OCALC officials from the Directorates of Materiel Management, Contracting, Maintenance, and Distribution;
- obtained information concerning each Directorate's position on dekitting and documented each one's opinion for and against the program;
- talked with officials responsible for implementing the dekitting program; and
- interviewed the equipment specialists who determine the contents of repair kits and have the responsibility for making changes to kits when needed.

We also attempted to determine the cost of implementing the dekitting program and whether there were any increased costs associated with the program. After spending considerable time attempting to determine whether implementing the dekitting program resulted in cost increases, we became convinced that precise determinations or reliable estimates of such costs were not feasible because of the number of DOD organizations involved and the lack of accounting data to produce such information. OCALC completed a program analysis at about the time we completed our review. The OCALC analysis attempted to determine the benefits and costs of dekitting. We found that the estimates were not reliable because of limited sampling, use of old data, and unsound methodology.

We reviewed kit procurement contract files to determine which individual parts were being procured by kit suppliers and to identify which of these parts had restricted sources of procurement. According to the AFLC repair parts kits regulation, restricted source parts¹ were no longer to be included in kits. We visited repair centers where kits were being used and interviewed line supervisors and repair technicians who are involved in the daily use of repair kits to determine whether kits affected productivity. We discussed the problems involved

¹Restricted source parts are parts which are not obtained through open competition (e.g., sole-source and source controlled parts).

in having to stock more parts with officials of OCALC's Directorate of Distribution and we studied selected kit parts to see how many were also being stocked at OCALC as individual items to gain some insight as to whether dekitting would increase workloads and related cost.

We asked the Defense Logistics Supply Center in Battle Creek, Michigan, to determine if parts were centrally managed elsewhere within DOD. For centrally managed parts, we obtained the NSN and the locations of inventory control points. For kit parts found to be centrally managed at OCALC, the Defense Industrial Services Center, and the Navy's Aviation Supply Office, we visited the managing activities to obtain information on prices, procurement histories, supply sources, users, and inventories. Our objective was to determine whether (1) dekitting would significantly increase the number of items that would be centrally managed and (2) whether the addition of dekitting parts could increase the quantities so that economic order quantities were more likely to be purchased and competition introduced.

We reviewed five high-annual demand kits being procured from G.K.S., Inc., in an attempt to determine:

- Whether kit parts are the types that should be procured in kit form.
- Whether the parts are being managed as individual items by DOD.
- How DOD's cost of individually managed parts compared with the cost of the parts to the kit supplier (G.K.S., Inc.). (We were, however, unable to arrive at a realistic comparison because many parts either had not been procured recently by DOD or had been procured by DOD in much smaller quantities than were required for the kits.)
- The need for the kit in end-item overhaul and the frequency of usage of individual parts in overhaul.

We also contacted an overhaul facility of one of the larger commercial airlines to determine its policies for using depot level repair kits.

Our review was performed in accordance with generally accepted government auditing standards.

Analysis of Parts Included In Our Selected Kits

Kit NSN	Kit unit price	Number of parts			Annual demand for parts if procured individually					
		Annual demand	In each kit	With NSNs	Sole source or source controlled	Over \$100,000	\$50,000 to \$100,000	\$10,000 to \$50,000	\$2,500 to \$10,000	Under \$2,500
<u>1650-01-003-3988</u>										
Application: Constant speed drive F-4 Aircraft										
	\$ 616	\$ 889,602	16	15	16	2	3	2	7	2
<u>1650-00-798-7359</u>										
Application: Constant speed drive KC-135 & B-52 Aircraft										
	1,089	317,066	8	5	6	0	3	1	2	2
<u>1650-00-798-7036</u>										
Application: Constant speed drive KC-135 & B-52 Aircraft										
	1,326	379,051	8	5	5	0	1	4	0	3
<u>1650-01-003-3337</u>										
Application: Constant speed drive F-4 Aircraft										
	682	1,036,337	9	9	9	3	2	1	3	0
<u>1650-01-003-3334</u>										
Application: Constant speed drive F-4 Aircraft										
	139	202,148	13	8	13	0	1	2	5	5
Total		\$2,824,204 ^a	54	42	49	5	10	10	17	12
Total annual demand for parts in kits		\$2,222,995				\$1,111,529	\$734,782	\$280,140	\$86,328	\$10,216
		100%				50.02%	33.07%	12.61%	3.84%	.46%

Total annual demand for 49 parts which are sole source or source controlled \$2,220,942^b

Total annual demand for 42 parts with NSNs \$2,106,997^c

Total annual demand for 27 bearings included in kits \$1,546,130^d

^aThis figure includes the kit maker's overhead, profit, administrative costs, and a management fee.

^bThis figure represents 99.9 percent of the dollar value of the annual demand for all parts in the kits we surveyed.

^cThis figure represents 95 percent of the dollar value of the annual demand for all parts in the kits we surveyed.

^dThis figure represents 69 percent of the dollar value of the annual demand for all parts in the kits we surveyed.



THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D C 20301 4000

MANPOWER,
INSTALLATIONS
AND LOGISTICS

23 APR 1985

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
U.S. General Accounting Office
441 G. Street, N.W.
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "Review of Oklahoma City Air Logistics Center's De-Kitting Policy," dated April 10, 1985, GAO Code No. 942286, OSD Case No. 6728.

The contents of this report support the current Air Force de-kitting program. DoD agrees with the GAO position taken. DoD did not find any technical or factual errors and does not have any clarifying comments.

Thank you for giving DoD the opportunity to comment on this report.

Sincerely,


Jerry L. Calhoun
ASST Assistant Secretary of Defense
(Manpower, Installations & Logistics)

United States Senate

WASHINGTON, D.C. 20510

April 5, 1983

Mr. Charles A. Bowsher
Comptroller General of the
United States
441 G Street, NW
Washington, DC 20548

Dear Mr. Bowsher:

For nearly thirty years the United States Air Force has logistically supported the overhaul of aircraft engine and engine accessory repair with spare parts kits.

More than twenty years ago the Government had the good sense to create a competitive market place for the procurement of these spare parts kits, resulting in a supporting industry, employing several hundred people, known as "kitters."

Due to the nature of the commodities over which Oklahoma City Air Logistics Command (OC/ALC), located at Tinker Air Force Base, Oklahoma City, Oklahoma, has cognizance, they have traditionally been large users of kits.

One of my constituents, G.K.S., Inc. of Westlake, Ohio, is an award winning, well recognized supplier of kits to OC/ALC. G.K.S., Inc. has brought to my attention a "Management Decision" which was made by Directorate of Material Management personnel at OC/ALC which not only threatens their very existence but which appears to have absolutely no economic or logistic benefit to the United States Government.

The procedure, called "de-kitting" was initiated July 1, 1982, with the purpose of reviewing all kits under control of Tinker (except life support and field kits) and breaking down the kits into their component parts, and then requisitioning or purchasing the components individually.

In searching out an answer to this problem, G.K.S. has discussed the implementation of this procedure with high ranking Air Force and Navy personnel who have had overhaul and service responsibility in both war and peace time environments. The answer is universal, the results of this procedure will be catastrophic.

It seems inconceivable that a time proven and accepted procedure such as this could be altered with no input from private industry and no cost benefit analysis, or trial, to support the decision to proceed. The potential additional procurement and logistic support costs for initiation of this program would

Page Two
Mr. Bowsher

appear to be significant and worthy of your concern. As an example, analysis by G.K.S. of over fifty (50) kits accepted by the de-kitting program indicate an increase of more than 900% in administration costs. I am, therefore, requesting that you initiate and conduct, with the utmost urgency, a detailed audit of this de-kitting procedure to determine:

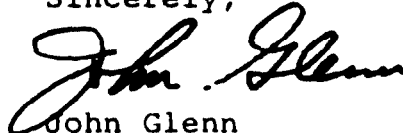
1. What, if any, justification was documented prior to implementing subject de-kitting program?
2. Who authorized said action?
3. What are the real costs of implementing this change? Including but not limited to: additional procedural costs; increased funding to support additional inventory; additional contract administration costs; additional logistic costs; additional packaging and freight costs; costs of delays in receipt of material; and, additional costs in tracking down shortages of components on the overhaul line.
4. Increased cost of employment and training of Government personnel to procure, administer and inspect the additional line item workload?
5. What documentation and targeting of objectives are authorized and by whom, to assure that adequate objective reviews and approvals are applied to programs of major impact on our defense programs.

For your information, I have enclosed a recent letter from the Department of the Air Force which I feel does not fully or accurately address the problem that G.K.S. Inc. has encountered.

I must stress that immediate action be taken to analyze this de-kitting program, before additional costs are incurred.

Best regards.

Sincerely,



John Glenn
United States Senator

JG/cbw
Enclosures

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