

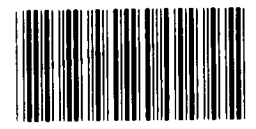
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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Secretary Of Defense

Improved Management Of Air Force Modification Programs Can Save Millions

The Air Force can save millions of dollars by (1) making greater use of the Department of Defense supply system to obtain parts needed for the aircraft modification programs and (2) following more realistic practices in contracting for other parts needed in the programs.



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

PROCUREMENT, LOGISTICS,
AND READINESS DIVISION

B-201942

The Honorable Caspar W. Weinberger
The Secretary of Defense

Dear Mr. Secretary:

This report shows that the Air Force can save millions of dollars by making greater use of the Department of Defense supply system to obtain parts needed for aircraft modification programs and by following more realistic practices in contracting for other parts needed in the programs.

This report contains recommendations to you in chapters 2, 3, and 4. 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 Director, Office of Management and Budget; the Chairmen, Senate Committee on Governmental Affairs, House Committee on Government Operations, and the Senate and House Committees on Appropriations and on Armed Services; and the Secretary of the Air Force.

Sincerely yours,

A handwritten signature in cursive script that reads "Donald J. Horan".

Donald J. Horan
Director

D I G E S T

Air Force policy is to use existing items that may be available in the Department of Defense (DOD) supply system before it purchases new items for modification kits. However, GAO found that the Air Force purchases most of its modification kits through contracts without considering the DOD supply system.

GAO believes that significant savings can result from using DOD-managed items. The following examples illustrate possible savings.

- On one billion dollar modification program, the Air Force will save about \$9 million by furnishing Air Force-managed items to the modification program, rather than allowing the contractor to furnish the items. (See p. 12.)
- On another large program, the Air Force could save almost \$21 million by identifying items currently being furnished by the contractor that could be furnished by the Air Force. (See pp. 12 to 13.)
- On six modification programs included in the GAO review, the Air Force paid higher prices to contractors for items managed by the Defense Logistics Agency than it would have paid if it had obtained the items from the DOD supply system. (See pp. 13 to 14.)

In June 1979 the Air Force Logistics Command Inspector General told the Air Force to start using the DOD supply system for its modification programs. (See p. 16.) The Air Force proposed procedures under which its contractors would requisition parts from DOD activities. (See p. 16.) As of August 1980, the proposal had not been implemented.

Air logistics center officials are concerned that implementing the new Air Force proposal will become costly because of work stoppages and other contractor costs incurred when items are not delivered timely. (See p. 17.) GAO recognizes that the Air Force proposal may result in increased use of DOD-managed items, but believes that it contains weaknesses which should prompt the Air Force to consider another alternative. (See p. 18.) GAO believes, for example, that by establishing specific criteria for using DOD items and by using existing facilities at each of the air logistics centers, modification kits can be assembled using the DOD supply system without risking contractors' work stoppages or unnecessary costs.

GAO also believes that the Air Force has other opportunities to avoid unnecessary costs when it obtains items for modification programs. Under the DOD-phased procurement policy, the Air Force automatically limits its purchases of modification kits to the quantity that can be installed each year. The Congress, DOD, and the Joint Logistics Commanders have recognized that there are exceptions to the phased procurement policy and, when significant savings could be achieved, that the exceptions should be recognized. The Joint Logistics Commanders have recommended that the DOD directive be revised to clarify this.

In two recent cases, one air logistics center identified over \$1 million that could be saved if the purchase of modification kits were consolidated. However, the Air Force interprets DOD's policy as being extremely restrictive, applying only to long leadtime procurement. Since long leadtime would not generally apply to items needed for modification kits, the Air Force has not established procedures to identify those situations where significant savings could be achieved. (See p. 25.)

RECOMMENDATIONS

GAO recommends that the Secretary of Defense require the Secretary of the Air Force to:

- Amend and clarify current regulations and procedures which deal with modification programs to eliminate confusing and contradicting statements on screening the DOD inventory for items needed in modification kits. (See p. 10.)

--Direct Air Force managers to obtain DOD-managed items through the DOD supply system where savings can be realized. (See p. 19.)

--Take maximum advantage of existing Air Force capabilities to aggregate and assemble modification kits at lower costs. (See p. 19.)

GAO also recommends that the Secretary of Defense (1) adopt the Joint Logistics Commanders' recommendation to clarify the DOD directive permitting advance procurement in situations where good business practices and significant savings can be achieved and (2) require the Air Force to establish procedures for the air logistics centers to identify, document, and report instances where substantial production costs on modification kit items can be avoided through consolidated and advanced procurements. (See p. 26.)

Air Force headquarters officials agreed with GAO's recommendations to make greater use of DOD's supply system and existing Air Force resources in the Air Force modification programs. They agreed that actions would be taken to achieve this. (See pp. 10 and 19.)



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ABBREVIATIONS

DLA	Defense Logistics Agency
DOD	Department of Defense
GAO	General Accounting Office

CHAPTER 1

INTRODUCTION

The purpose of Air Force modification programs is to correct deficiencies or to improve capabilities of existing systems. Individual modifications may vary significantly in complexity and cost. Some may involve only installing a few parts or rerouting wires or hydraulic lines. Others may involve extensive design engineering, prototyping, testing, and manufacture and require the Air Force to position a spare parts inventory to support modified systems.

Air Force modification programs are categorized into five basic classifications: classes I through V. Classes I through III are special purpose programs that are either temporary or limited in scope. The Air Force's major modifications are class IV or V programs. Class IV modifications correct deficiencies in weapon systems that relate to safety hazards, mission accomplishment, or operational inefficiency. Class V modifications provide new or improved capability to weapon systems or, in some cases, remove capability that is no longer needed.

The Air Force Logistics Command, through its five air logistics centers, is normally responsible for proposing, processing, and approving class IV modifications for weapons systems that have become operational and whose designs have stabilized. Air logistics centers can approve class IV programs costing up to \$500,000. Air Force Logistics Command approves programs costing up to \$5 million. Air Force headquarters must approve class IV programs costing over \$5 million and all class V programs.

Air Force modification programs are described in Time Compliance Technical Orders. These orders identify the system to be modified, the number of man-hours required, and the skills, material, and special tools needed to perform the modification. In addition, they provide a timetable of the planned completion date for installation of the kits.

Material needed for Air Force modifications is funded by procurement appropriations. For fiscal year 1980, the Air Force spent \$338 million for class IV modifications.

Material needed for modifications is stocked, accounted for, and issued as a modification kit. A modification kit is either purchased through Department of Defense (DOD) contractors or assembled using in-house Air Force capabilities. It can vary in size, content, and cost. In some instances, a kit may be only an envelope with a single part, while in other instances, it may be several containers with hundreds of different items.

The Air Force policy is to use items that may be available in the DOD supply system whenever possible before it purchases new items for class IV modification kits. The Air Force also limits its purchases of modification kits to that quantity that can be installed each year.

OBJECTIVES, SCOPE, AND METHODOLOGY

We evaluated how effective the Air Force manages items used in its modification programs. We concentrated on class IV modifications because they contain many parts already in the supply system, whereas class V modifications deal mostly with new technology. Part of the review concentrated on determining whether the Air Force purchased parts and material needed for class IV modifications as part of modification kits when items were available through the DOD supply systems. Accordingly, we

- reviewed the manner in which modification managers screened DOD inventories to identify and use suitable available items and
- assessed whether the Air Force incurred unnecessary costs when it obtained modification kit items through contractors instead of obtaining items through the DOD supply system.

We also analyzed an Air Force proposed alternative to contracting for entire modification kits, developed another alternative, and evaluated how the Air Force phased procurement policy affected modification kit purchases.

We reviewed DOD directives and Air Force policies, regulations, and procedures which govern modification kit management. We also reviewed modification management policy and practices at the two centers which did most of the class IV modification work during scheduled overhaul of the aircraft. In addition, we:

- Reviewed and determined supply support data capabilities of the Defense Logistics Agency (DLA) and its components.
- Examined center maintenance practices on using modification kit items during depot maintenance operations.
- Reviewed Inspector General and Air Force Audit Agency reports on modification kit management effectiveness.

- Discussed purchasing and production problems with Air Force modification and procurement personnel and various DOD contractors who provide modification kits to the Air Force.
- Compared costs for selected modification kit items that were purchased through contracts and that were also managed in the DOD supply system.

To compare contractor costs with DOD supply system costs, we chose six modification programs which involved contractor support to fabricate modification kits. Because cost data for items was not available on modification kits obtained through competitive bids or negotiated contracts of less than \$100,000, we reviewed kits which had been obtained through negotiated contracts valued at over \$100,000.

Our comparison was limited because Air Force contract files did not contain contractors' cost data for items and material that were purchased as part of the modification kits. Instead, cost data was obtained from the Defense Contract Audit Agency and, in some cases, from individual contractors. Even with this cost data we were able to compare cost only on selected items.

The review was performed at

- Headquarters, DOD, Air Force, and DLA, Washington, D.C.;
- San Antonio Air Logistics Center, Kelly Air Force Base, Texas;
- Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma;
- Defense Logistics Services Center, Battle Creek, Michigan;
- DLA Supply Center, Philadelphia, Pennsylvania;
- Defense Contract Audit Agency, Wichita, Kansas; and
- Boeing Corporation, Wichita, Kansas.

Also, we held discussions with Air Force Logistics Command officials, DOD contractors, and Defense Contract Audit personnel at various locations.

CHAPTER 2

AIR FORCE PRACTICES DO NOT ASSURE THAT AVAILABLE ASSETS WILL BE USED IN MODIFICATION PROGRAMS

Although Air Force policy requires screening and the Auditor General recommended it over a year ago, Air Force managers rarely screen DOD supply systems to determine whether items can be provided to support the Air Force Logistics Command modification programs.

Our review included six major modification programs--three for the B-52 bomber, one for the C-5A cargo plane, one for the F-5 fighter plane, and one for the J-85 jet engine. These six programs had a total of 2,030 items. We found that many of these items have already been assigned national stock numbers and are being managed in the DOD supply system. For example, at the San Antonio Air Logistics Center, one engine modification kit consisted of 40 items. Of these items, 39 were managed in the DOD supply system--24 by the Air Force and 15 by DLA. Instead of screening the system, however, Air Force managers purchased the kits--including DOD-managed items--from a contractor and paid premium prices for the items.

Air Force procedures for obtaining modification kits from contractors are discussed in chapter 3. Its practices for screening the Air Force and other DOD supply systems are discussed below. While these practices were observed at only two of the five centers, the reasons for them--also discussed below--lead us to believe that similar situations exist at the other centers.

AIR FORCE INVENTORY IS NOT BEING SCREENED FOR AVAILABLE ITEMS

Air Force Logistics Command Regulation 57-21 provides that before items managed within the Air Force supply system can be purchased for a modification kit, the Air Force supply system must be screened to determine whether long-supply or excess items 1/ can be used. At the end of March 1980, the

1/Air Force Manual 67-1 defines long-supply items as that quantity in excess of the Approved Forces Acquisition Objective, about a 3-year requirement. Excess items are in inventory above all known requirements.

San Antonio Air Logistics Center reported almost \$700 million in long-supply items which were not being screened. Throughout the Air Force, long-supply items at that date totaled over \$3.8 billion.

Responsibility for screening rests with the Material Utilization Control Office located at each center. Screening is to be done for all items in modification kits with an extended value of \$5,000 or more. Our review disclosed that screening for available long-supply items was rarely done at either of the two centers. At one center--San Antonio--confusion and misunderstandings resulted in the Air Force inventory not being routinely screened. At the other center--Oklahoma City--no attempts were made to determine if long-supply items existed and could be used to offset new procurement.

San Antonio Air Logistics Center

Within this Center's Directorate of Material Management, three divisions are responsible for managing modification programs and for screening. The Propulsion Division is responsible for the engine modification programs, the Item Management Division is responsible for commodity or equipment item modification programs, and the Systems Division is responsible for aircraft modification programs.

Because of misunderstandings and confusion, two of the three divisions do not screen Air Force inventories for long-supply items. The other division has sporadically screened the Air Force system, but has no procedures to assure that screening is done routinely.

Propulsion Management Division

This division's Material Utilization Officer mistakenly thought that kit managers were screening the Air Force inventory for modification kit items. However, the kit managers thought the Material Utilization Officer was doing the screening. As a result, the division has not screened the Air Force inventory for available items needed for modification kits for the past 5 years.

Item Management Division

This division's Material Utilization Officer was not aware of her screening responsibilities for modification kits. She thought screening was being done in the modification kit section. But it was not. According to the kit modification section chief's interpretation of instructions, neither the Material Utilization Officer nor the kit manager is responsible for screening the long-supply items needed for modification kits. Instead, the manager of the item being modified has screening responsibility.

The end result was that no one in this division was screening the Air Force inventory for items that could be used in modification programs.

Systems Management Division

This division has occasionally screened the Air Force inventory for available items needed for modification programs. However, this practice was the exception rather than the rule. This division had not designated a Material Utilization Officer to perform the screening. The kit managers have initiated any screenings done. But these managers have established no procedures to assure that screening is done routinely. For example, the modification kit files did not contain information essential to a screening procedure, such as availability of kit items, the price of those items, the source of supply of items, or other basic data. Without this basic information, Air Force personnel cannot meet the screening criteria prescribed in Air Force regulations.

Although the reasons for not screening the inventory vary with the divisions at the San Antonio Air Logistics Center, the end results are the same: items available to offset modification kit procurement actions go undetected.

Oklahoma City Air Logistics Center

This Center occasionally screens the Air Force inventory on selected items that have been predetermined to be Government-furnished material to a modification program. As a rule, however, modification managers at this Center do not attempt to screen the Air Force inventory to determine if items are available and can be used to offset procurements of items for modification kits. Modification managers had not screened the Air Force inventory for the modifications programs we reviewed.

We did not question the Air Force criteria of screening only for long-supply or excess items because (1) screening of any sort was rarely done and (2) the Air Force's management of long-supply items will be the subject of a later review. However, our review approach for DLA screening procedures was that the system exists to satisfy customer needs and that items needed would be provided either from on-hand inventories or from procurement actions.

OTHER DOD SUPPLY SYSTEMS ARE NOT BEING SCREENED FOR ITEMS

Under the DOD supply concept, DLA manages many items (spare parts) which the Air Force needs. Air Force modification kits can contain many DLA-managed items. On the programs we evaluated, for example, 35 percent of the items in the modification kits were DLA managed. At the two centers

we visited, modification managers did not screen the DLA system for items that could be used in modification programs. For instance, personnel at one center stated that, under their operating instructions and regulations, they were not required to screen the DLA inventory, and personnel at both centers stated that they believe that DLA could not adequately support the Air Force modification program.

Air Force managers not aware of existing systems to facilitate screening

Although automated systems to facilitate screening existed and were readily available to provide information on DOD-managed items needed in modification kits, modification personnel at the centers we visited were unaware of these systems and so did not use them.

Modification kit items are identified in a document called Time Compliance Technical Order Supply Data Requirements. On some modification programs, the document identifies most of the items only by the manufacturer's part number and provides little information to identify DOD-managed items. For other programs, the document identifies items by their national stock number, indicating that the items are in the DOD supply system. However, it does not show other essential information, such as the DOD activity responsible for managing the items, the costs of the items, or item availability for the modification programs.

Kit managers at one center explained that they are required to prepare a purchase request for modification kits within 30 days after the modification program is approved and funded. According to these kit managers, time is simply not available to research manually the hundreds, and sometimes thousands, of modification kit items to determine whether the items are in the DOD supply system, where they are located, and whether they are available for use in the modification program.

Center personnel agreed that their effectiveness in managing modification programs could be improved if the type of information referred to above was provided within 2 or 3 weeks after a modification program is approved. Our discussions with DLA officials disclosed that this type information could be readily provided to the Air Force, using existing systems.

We visited the Defense Logistics Services Center in Battle Creek, Michigan, and DLA headquarters in Washington, D.C., to discuss the specific problems voiced by center officials. DLA personnel stated that the basic screening data needed by Air Force managers is readily available. For example, the Defense

Logistics Services Center, a component of DLA, has the capability to screen the Federal Supply System and to match manufacturers' part numbers with assigned national stock numbers. This service, which has been available to the military services for about 4 years, can also provide (1) the price of each item, (2) the supply source for each item, and (3) substitute items. The Defense Logistics Services Center can provide this data to the centers in about a week.

The Defense Logistics Services Center cannot provide data on the current status of individual supply items, such as on-hand and on-order quantities or the time necessary to obtain the items (procurement leadtimes). However, this type information can be obtained through a system-to-system program (formally called Logistics Capability Estimates) which was especially established to provide item availability on each DLA-managed item. Using the system-to-system program, Air Force modification personnel can receive within about 5 days (1) total on-hand assets, (2) total assets due in from contract or on purchase request, and (3) procurement leadtime and other similar information.

Guidelines for using the system are provided in Air Force Manual 67-1. However, modification personnel at both centers we visited were not aware that these systems were available and could have been used in screening for available items.

Air Force regulations frustrate the screening process

Air Force regulations and instructions concerning screening DLA's supply system are confusing and often contradictory. Center officials stated that Air Force regulations and instructions do not require them to make availability checks on DLA-managed items. For example, one center official cited Air Force Manual 67-1 (vol III, part I, ch. 11), which states that during coordination of the modification, present policies and agreements with DLA provide that verification or availability checks will not be made on DLA-managed items. As noted above, another section of Air Force Manual 67-1 provides specific guidance on obtaining availability checks for DLA-managed items.

Another center official pointed to local operating instructions which provide guidance for screening. Those instructions provide that low-cost and hardware items, such as nuts, bolts, and screws, should be eliminated from screening. Center officials stated that DLA is the primary manager for low-cost and hardware items, and therefore, the instructions justify personnel not screening DLA for items.

The above passages, as interpreted by center officials, appear to circumvent the overall Air Force policy of using

available items rather than purchasing new items for modification kits. Other regulations and instructions we found provide methods for screening the DLA inventory. For example, in the same operating instructions mentioned previously, another section provides that other service-managed components (DLA, Army, or Navy) should be used when the dollar value is significant enough to offset the additional expense in verification of availability.

Thus, regardless of one's position--screening versus no screening--justification for it can be found in Air Force regulations and instructions.

As noted previously, Air Force Manual 67-1 includes a statement that special agreements are in effect with DLA where availability checks will not be made on DLA-managed items. Air Force officials responsible for the manual could not explain the basis of the agreements. Also, DLA officials were not aware of such agreements. It was during the discussion on this subject that DLA officials advised us of the system-to-system program. After that discussion, we confirmed that the system-to-system program has been available to center officials since September 1975.

Center officials also expressed doubt that DLA could effectively support the Air Force modification programs. These concerns parallel those the military services express when proposals are presented to increase management assignments to DLA.

In our opinion, center personnel have no real basis for their concern that DLA cannot support the modification programs. Air Force headquarters personnel provided data on both the Air Force's and DLA's ability to fill requisitions for consumable items from on-hand inventory. Performance effectiveness is expressed in terms of a supply effectiveness percentage. For fiscal year 1980 DLA had an effectiveness rate of 91 percent, and the Air Force had a rate of 87 percent.

CONCLUSIONS

Air Force managers rarely screened the DOD supply system to determine whether items could be provided to support the modification programs. While these practices were observed at only two of the five air logistics centers, the reasons for them lead us to believe that similar situations could also exist at the other centers.

In our opinion, the lack of screening has resulted primarily from (1) confusion and misunderstandings on the part of the centers' personnel, coupled with vague and sometimes contradictory Air Force regulations, and (2) a lack of faith on the part of the Air Force that DLA can effectively support the modification programs.

The Air Force belief that DLA cannot support the modification programs is, in our opinion, not well founded. Automated systems are available to provide the services with timely information on DLA-managed items. But personnel at the centers did not use the systems simply because they did not know about the systems. Also, on the basis of its supply effectiveness rate for fiscal year 1980, DLA has demonstrated it can support the Air Force programs.

RECOMMENDATIONS

We recommend that the Secretary of Defense require the Secretary of the Air Force to:

- Amend and clarify current regulations and procedures which deal with modification programs to eliminate confusing and contradictory statements on screening the DOD supply system for items needed in modification kits.
- Direct Air Force managers to obtain DOD-managed items through the DOD supply system where savings can be realized.

AGENCY COMMENTS

Air Force headquarters personnel expressed different views on DLA's ability to support the modification programs than those expressed by center personnel. Headquarters personnel stated that DLA should and would be used to support the modification programs in the future. Accordingly, they agreed to clarify the regulations and instructions to make this more clear to center modifications managers.

CHAPTER 3
AIR FORCE METHOD
OF OBTAINING MODIFICATION KITS
IS UNNECESSARILY COSTLY

Air Force managers purchase most modification kits through contracts, without considering DOD-managed items. Over a year ago the Air Force recognized this problem and proposed an alternative method of obtaining kits by using DOD-managed items. But the proposal has not been implemented, and in our opinion, it is incomplete. As a result, the Air Force not only pays higher prices for modification kit items, but it also circumvents the purpose of central item management by not allowing DOD item managers to consolidate needs and make volume purchases. Further, the Air Force should consider another alternative that will enable it to use DOD-owned items in the modification kits.

THE AIR FORCE PAYS PREMIUM
PRICES FOR ITEMS PURCHASED
IN MODIFICATION KITS

Air Force officials estimate that as much as 90 percent of all modification kits are purchased through contracts. The Air Force pays premium prices for DOD-managed items which are obtained as part of modification kits, even though the kits contain many items which are being managed in the DOD supply system. Except for large modification programs, such as the billion dollar C-5A wing modification program, there is little or no coordination between Air Force and DLA item managers for items being purchased as part of modification kits. This lack of coordination and the resultant increased costs were addressed by the Air Force Logistics Command Inspector General in June 1979.

In reporting on a management effectiveness inspection at the Sacramento Air Logistics Center, the Inspector General noted that, on a contract for modification kits, Air Force inventories were not screened for kit items and that no effort was made to obtain items managed in the Air Force or the DLA inventories. The Inspector General concluded that because neither excess items in the Air Force inventory nor DLA items were requisitioned for the modification kits, the Air Force would pay more for the kits. The Inspector General recommended that DOD-managed items be made available to contractors as Government-furnished material.

Using DOD-managed material
in modification programs can
save millions

The savings resulting from using Air Force- and DOD-managed items in modification programs can amount to millions of dollars. For example, on two large modification programs--the C-5A wing modification and the B-52 avionics system modification--the Air Force could save almost \$30 million.

C-5A wing modification

To prevent the grounding of the C-5A aircraft, the entire fleet is scheduled to undergo modification to strengthen the aircraft's wing. The program is scheduled to begin in 1982 and should require about 5 years to complete at an estimated cost of \$1.4 billion. This modification program is unique in that Air Force personnel have been assigned full-time duties to manage the one modification program.

Early in the program, Air Force and contractor personnel established criteria for both Government-furnished and contractor-furnished material. The Air Force was to provide, as Government-furnished material, those items already in the DOD supply system. The contractor was to furnish items that were new to the DOD supply system.

We discussed with Air Force officials responsible for the wing modification program the rationale and benefits of providing DOD-managed items. They noted that when items are obtained from secondary sources, such as subcontractors, the prime contractor often adds overhead and handling costs as pass-through charges. They also noted that Air Force item managers can obtain these items either from existing inventory or directly from vendors. Thus, avoiding charges added on by the prime contractors. Air Force officials estimated that over \$9 million pass-through charges will be avoided by furnishing \$29 million of DOD-managed material to the wing modification program.

B-52 avionics system
modification

In September 1979 the Air Force Audit Agency issued its report on the B-52 avionics system program. Part of this report addressed the savings realized when components are furnished by the Government instead of by the contractor.

The Agency reported that DOD policy is to "break out" items for direct procurement whenever substantial net savings can be achieved without jeopardizing the quality, reliability, performance, or delivery of the end item. Component breakout

is the process whereby items previously provided by the contractor are purchased directly by the Government and are provided later as Government-furnished material. By breaking out components, prime contractor charges for material burden, general and administrative expenses, and profit are no longer added to the cost of the items.

The Agency noted that the B-52 avionics system modification program required the prime contractor to develop and install a small number of kits. After development, the contractor would produce and provide the kits to the centers for installation by Air Force personnel. The Agency noted that the contractor was providing five items which were essentially adaptations of off-the-shelf subcontractor items that require little or no work by the contractor.

While the Air Force planned to consider component breakout on the B-52 modification program for the future, the Agency found that no efforts had been made to identify those items which would readily qualify. The Agency noted that by breaking out and furnishing the five items the Air Force could achieve gross savings of about \$20.7 million in avoiding contractor profits alone. The Agency did not estimate the savings from avoiding material burden or general and administrative expenses.

The two above examples illustrate the savings which can be achieved if the Air Force uses its own system to support modification programs by providing either long-supply or excess items already in inventory or by directly supplying needed items to the modification programs through component breakout. Significant savings can also result if the Air Force obtains from DLA, rather than from contractors, low cost or hardware type items even if they are not in long supply or excess.

DLA-furnished items are less expensive than contractor-furnished items

By obtaining needed items from DLA, rather than buying them from contractors, the Air Force can avoid contractor charges, such as general and administrative expenses and profit. We evaluated the modification programs at the two centers and found that DLA was managing many items needed for modification kits. Had the Air Force used DLA for parts support, sizable savings could have been achieved.

We also compared prices paid to contractors for items contained in six modification kits to the prices that DLA would have charged. The comparison was severely hindered because Air Force contract files did not show the contractors' price for individual items. Consequently, we had to

obtain cost data from the Defense Contract Audit Agency or directly from contractor personnel. In most cases, cost data was available only for some of the items. For example, one of the kits had 363 DLA-managed items which were purchased from a contractor as part of the kit. We were able to obtain actual cost data on only 130 of these items.

Although our test was limited by incomplete cost data, the data which was available indicated that DLA could have furnished items cheaper than contractors. In the six modification kits evaluated, the Air Force could have saved about \$171,000 if it had obtained the items from DLA rather than from contractors. Two modifications on which some cost data was available are discussed below.

Retrofit of the fire warning system on F-5E aircraft

In August 1978 the Air Force started procurement action of modification kits to replace a defective fire warning system on the F-5E aircraft. The Air Force considered this system to be an urgent safety modification and, under its procedures, screening for available items is not required. Consequently, it was not done. About 70 percent of the items included in the kits were being managed by DLA.

In October 1978 the Air Force awarded a sole-source contract to the manufacturer of the new fire warning system for 483 modification kits valued at \$1.7 million. The Air Force and Navy purchased 115 of the 483 kits, and foreign governments purchased the rest.

For those DLA-managed items, we compared DLA's price with the contractor's. The Air Force and Navy could have saved about \$23,400 on the 115 modification kits if DLA had been allowed to furnish the items instead of the contractor.

As noted in chapter 2, one of the reasons for the Air Force not screening the DLA supply system was a lack of faith in DLA's ability to provide the items. In this case, the Air Force was required to rely on DLA. During contract performance, the contractor was unable to obtain a particular item in time to meet delivery schedules. The contractor checked with DLA and found that the item was available in DLA's system. The contractor wrote a letter to the San Antonio Air Logistics Center stating that the needed item was available at DLA and explained the procedures to obtain the item from that agency. Subsequently, the Air Force kit manager obtained the item from DLA, and the contractor met the delivery schedules.

In addition to the kits contracted for in this case, the Air Force had recently completed this modification on about 940 T-38 aircraft. Further, the F-4, F-111, and F-15

aircraft are using the defective fire warning system. If these defective units are replaced, we believe the Air Force should use the DOD supply system and should discontinue allowing the contractor to furnish the entire modification kit.

J-85 engine modification

On a class IV-B, mission essential modification on the J-85 engine, the Air Force contracted to purchase the necessary modification kits. The modification kit contained 40 items-- 15 of which were being managed by DLA. However, the Air Force made no attempt to screen DLA's inventory for items needed in the modification program.

Since Air Force contract files did not contain complete cost data on the modification kit items and Air Force contracting officials could not explain how much the Air Force paid for each item, we had to obtain cost data from the Defense Contract Audit Agency. Using contractor prepared cost data, we found that the Air Force paid the contractor about \$118,000 for the 15 DLA-managed items. Had the Air Force obtained the items from DLA the cost would have amounted to only about \$36,000 or a savings of about \$82,000.

Other savings can result when the DOD supply system is used

By using the DOD supply system to support the modification program, the Air Force cannot only achieve significant direct savings, but it can also achieve indirect savings through more effective management by DOD item managers.

As noted earlier, DOD-managed items are being purchased for modification kits with no coordination between DOD item managers who have management responsibility for individual items and the kit managers. Item managers are responsible for computing the consolidated requirements for all users and managing the supply, control, procurement, and distribution of inventories for each individual item managed.

To perform these responsibilities effectively, the item manager must be aware of the total requirements for items. When items are being purchased in large quantities as part of a modification kit, the item manager cannot take maximum advantage of volume purchases and the resultant savings. For example, one DLA headquarters official said that more use of DLA-managed items by the services would provide more opportunities for greater price discounts through volume purchases.

We believe significant direct and indirect savings can result when DOD-owned material and the DOD supply system are used in the Air Force modification programs. Under current operating procedures, however, the Air Force does not take advantage of these savings.

THE AIR FORCE PROPOSES A NEW ALTERNATIVE
FOR PURCHASING MODIFICATION KITS

Responding to criticism by the Air Force Logistics Command Inspector General, the Air Force has been considering, for more than a year, an alternative for purchasing modification kits from contractors. Although the Air Force proposal may increase the use of DOD-owned items, we believe it contains weaknesses which should prompt the Air Force to consider another alternative.

The Air Force proposal

In June 1979 the Air Force Logistics Command Inspector General criticized one air logistics center for purchasing modification kits from a contractor without fully using available Air Force- or DLA-managed items. The Inspector General recommended that items in contractor designed modification kits be screened for identification at the Defense Logistics Services Center so that Government-furnished material may be requisitioned on a fill or kill basis. 1/ In March 1980 the Air Force Logistics Command proposed an alternative to contracting for entire modification kits. Under the proposal, contractors who design and assemble kits would be required to

- identify modification kit items that are already in the DOD supply system,
- submit a listing of Air Force-managed items to the responsible center for screening for available assets that can be shipped to the contractor as Government-furnished material, and
- requisition DLA-managed items using fill or kill requisitioning procedures.

The Air Force had not issued implementation instructions by the end of our evaluation in August 1980.

1/ Fill or kill requisitions are either fully or partially completed immediately. The requisition for any portion not filled immediately is automatically canceled.

Weaknesses in the Air Force proposal

The Air Force proposal includes provisions requiring duties that are already supposed to be accomplished by Air Force personnel. These duties are (1) identifying modification kit items that are already in the supply system and (2) screening the Air Force inventory for available items that can be used in the modification kit. Under the proposal, the contractor will identify Air Force-managed items while Air Force personnel will still be required to screen the Air Force inventory for available items.

The Air Force's proposal will also require the contractor to requisition, on a fill or kill basis, DLA-managed items. Under the proposal, DLA will have only one chance to provide needed items to the modification program and those items must be available in the inventory. Requisitions for quantities of items not on hand in DLA's inventory will be automatically canceled under the fill or kill procedures.

We believe the Air Force proposal can be more effective by requiring Air Force managers to make availability checks, using the system-to-system program on DLA-managed items. With this data, Air Force managers cannot only determine which items and quantities are available at DLA supply centers, but they also can determine whether supply centers can purchase and provide items to the modification program.

For example, if 1,000 connectors were needed for a modification kit which was to be delivered in 8 months, DLA would be given just one opportunity to supply the full quantity. If the items were not available, the requisition would be canceled, and the contractor would be authorized to furnish them to the modification program. By making availability checks, Air Force managers might determine that DLA could provide the connectors to the modification program within 4 months.

We discussed the Air Force proposal with San Antonio Air Logistics Center officials. They expressed doubt about DLA's ability to provide the items when needed, and they noted that in the past contractors often were able to charge excessive costs under work-stoppage provisions when items were not delivered timely or when the wrong items were furnished. As discussed in chapter 2, we believe there is no basis for the Air Force doubting DLA's operational effectiveness.

We noted that contractor-provided modification kits often contained individual packages of items, such as a package of 100 bolts, a package of 50 connectors, a package of 150 fasteners, and so on. Under the proposal, DLA will provide these items to the contractor as Government-furnished material.

The contractor will simply repackage the items individually and send them back to the Air Force as part of the modification kit. We believe it is not always practical to ship an item from the DOD inventory to a contractor and then pay the contractor to repackage the item and ship it back to another DOD inventory (the Air Force) as part of a kit. We believe the alternative discussed below should be used.

An alternative to the Air Force proposal

By using existing facilities and personnel at the centers to aggregate and assemble modification kits, the Air Force can more effectively use the DOD supply system to furnish items to modification programs without risking excessive contractor cost from work stoppages to assemble modification kits.

The centers we visited could assemble their own modification kits with personnel and facilities assigned for this purpose. Officials at the two center kit assembly sections indicated that in-house assembly could be expanded easily, using existing facilities and personnel, to handle more modification kit assembly. For example, the kit assembly section supervisor at the San Antonio Air Logistics Center stated that, with proper administrative support, his section could easily handle a larger in-house kit assembly workload with current staffing and facilities.

To implement this alternative, the Air Force would have to establish criteria similar to that which is being applied to the C-5A wing modification program. Specifically, the criteria would have to state that modification kit items should be obtained from the DOD supply system and that the kit should be assembled using existing Air Force capabilities. Under this alternative, contractors will furnish unique or production-type items which would be incorporated into the modification kits. By using this alternative as a way of obtaining modification kits, we believe the Air Force can (1) achieve immediate direct savings, (2) contribute to indirect savings by allowing DOD item managers to consolidate requirements and thus obtain more favorable prices through volume purchasing, and (3) use its existing resources more effectively.

CONCLUSIONS

Rather than screen the DOD supply system for needed items, Air Force managers purchase most modification kits through contracts and incur costs unnecessarily. The Auditor General reported this deficiency to the Air Force over a year ago, and the Air Force proposed alternative procedures designed to correct it. However, the Air Force proposal has not been implemented, and in our opinion, it contains weaknesses which should prompt consideration of another alternative.

In addition to requiring contractors to perform duties Air Force personnel are already supposed to be doing, the proposal will require contractors to requisition DLA-managed items on a fill or kill basis. Thus, DLA will have an opportunity to provide needed items only if they are on hand. The proposal will not afford DLA the opportunity to provide items through procurement actions.

The proposal also requires that items be shipped to contractors who, for many items, would merely repackage and deliver them to centers. Many items can, in our opinion, be provided directly to the centers, where personnel and facilities are available for kit assembly.

RECOMMENDATIONS

We recommend that the Secretary of Defense require the Secretary of the Air Force to:

- Direct Air Force managers to screen DLA's inventory to determine what support can be provided before allowing contractors to requisition items on a fill or kill basis.
- Take maximum advantage of existing Air Force capabilities to aggregate and assemble modification kits at lower costs.

AGENCY COMMENTS

Air Force headquarters officials agreed that the Air Force should rely more on DLA for supply support and, as noted in chapter 2, will clarify its regulations to achieve this. On making greater use of resources at the air logistics centers to assemble kits, those officials stated that in the past they have discussed this with center personnel and believed that only limited capacity existed. They stated that they were encouraged by our report and will take action to make greater use of those resources. They also agreed that many common items (nuts, bolts, and the like), except for those needed in contractor production, should be shipped directly to the centers rather than to contractors for reshipment to the centers.

CHAPTER 4

OTHER OPPORTUNITIES TO AVOID

UNNECESSARY COSTS IN OBTAINING ITEMS

FOR MODIFICATION PROGRAMS

The Air Force's rigid application of DOD-phased procurement policy to its modification programs is costing millions of dollars in avoidable recurring production costs.

DOD has a policy of phasing purchases of equipment and spare parts to coincide with planned deliveries for associated end items. But DOD also recognizes the need to exempt certain items from the policy. However, in implementing the DOD policy, the Air Force automatically limits its purchases of modification kits to only that quantity that can be installed each year. Although opportunities exist to avoid recurring production costs on some items by consolidating purchases for a one-time procurement, the Air Force has not established effective procedures to identify or to take advantage of these savings. As a result, it spends additional and often unnecessary millions of dollars for its modification kits.

According to the Air Force, its procedures are in accordance with (1) DOD's policy and guidance on implementing the "full funding concept" and (2) congressional direction concerning the purchase of modification kits.

DOD FULL FUNDING CONCEPT

Full funding is the term used to describe the principle the Congress applies in providing funds for DOD programs which are covered within the procurement title of the annual Appropriation Act. The objective of the concept is

"* * * to provide funds at the outset for the total estimated cost of a given item so that the Congress and the public can clearly see and have a complete knowledge of the full dimensions and cost when it is first presented for an appropriation. In practice, it means that each annual appropriation request must contain the funds estimated to be required to cover the total cost to be incurred in completing delivery of a given quantity of usable end items, such as aircraft, missiles, ships, vehicles, ammunition, and all other items of equipment."

Guidance for implementing the concept is included in DOD Directive 7200.4.

DOD guidance to the services

The directive also provides some guidance on time-phased procurements. It notes that when major weapon systems, such as aircraft, ships, and tanks, are purchased, related support equipment and spare parts should be purchased so that deliveries will be consistent with deliveries of the end items. While the directive does not specifically address modification kits, the Air Force interprets it to mean purchase only that quantity of kits expected to be installed during the current year.

However, the directive does permit advance procurement of some items. It states, for example, that while the full funding policy is intended to ensure that funds for the total estimated cost of an item will be available in the year in which procurement action is initiated, an extension of this policy will permit, under certain conditions, procurement of long leadtime items in advance of the fiscal year in which the related end item is to be procured. The directive notes that since this, in effect, constitutes an advance against a future program, it must be applied judiciously. The directive warns that proposals for advance funding should fully consider the applicability of the items to other programs or as spares in the event that the prospective program fails to materialize. This practice has been accepted by the Congress as a means to facilitate certain procurement programs.

Congressional direction

In a March 1980 report to the House Committee on Appropriations, the Survey and Investigations staff noted that the full funding concept, with its phased procurement provision, has been applied to modification programs by congressional direction. According to that report, the Congress recognizes that purchasing modification kits under the phased procurement policy has certain advantages, despite the potential for increased unit prices. The advantages are:

- Modification kit inventories are minimized.
- Cost liabilities are reduced if the modification program is canceled before completion.
- Better control is achieved by the services because procurement efforts are coordinated with the capability to install the kits.

The report further noted that, in spite of these advantages, the Congress also recognizes that

"* * *Certain exceptions to this rule [phased procurement] have been allowed, as when procurement of the total requirement will result in a significant cost savings."

Thus, the Congress has recognized that there are exceptions to the phased procurement policy which should be recognized where significant savings can be achieved. However, in implementing DOD's full funding concept, the Air Force automatically limits the number of modification kits to be purchased to the quantity that can be installed each year. Although DOD regulations recognize that there may be exceptions, the Air Force has not established procedures to identify these savings or to obtain waivers to the policy.

AIR FORCE-PHASED PROCUREMENT POLICY
IS COSTING UNNECESSARY MILLIONS

Air Force headquarters has instructed centers to limit, without exception, modification kit purchases to that quantity which can be installed each year. On multiyear programs, this would require awarding annual contracts for small quantities of modification kits.

Center officials believe that the headquarters policy is costing the Air Force millions of dollars because they cannot take advantage of volume purchases. For example, center officials referred to a current engine modification which was initiated in fiscal year 1976 and is scheduled to be completed during fiscal year 1983. The Air Force purchased the modification kit, which consisted of only one unique item, from a contractor. In its initial estimate, dated October 1975, the Air Force showed the quantity of engines to be modified each year and the costs to do so, as follows.

	Fiscal year						
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Quantity	89	67	51	56	65	80	67
Amount	\$74,671	\$61,841	\$51,765	\$62,496	\$79,820	\$108,080	\$99,562

Using Directive 7200.4 as its guide, the Air Force purchased modification kits based on the quantity of kits which could be installed annually. The unit price of the kit increased from \$865 in fiscal year 1976 to \$6,660 (Air Force estimate) in fiscal year 1982 (a 770-percent increase). The incremental cost escalation can be seen in the table below.

	Fiscal year						
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Quantity	89	67	51	44	77	80	67
Amount	\$76,985	\$63,750	\$53,379	<u>a/\$61,600</u>	\$227,920	\$355,200	\$446,220
Kit unit cost	\$865	\$951	\$1,047	\$1,400	\$2,960	\$4,400	\$6,600

a/Actual cost of 44 kits instead of 56 approved.

As previously noted, one of the advantages of phased procurement is reduced cost liabilities should the program be canceled before completion. We believe some situations exist where it can be safely assumed that the program would not be canceled, that is, class IV-A, safety modifications and some class IV-B, mission essential modifications. Air Force regulations define a class IV-B, mission essential modification as a change required because the deficiency would cause mission failure if not corrected. The example shown above was identified by the Air Force as a class IV-B, mission essential modification.

Center personnel cited this as but one example where savings could result from consolidated procurement. The following table illustrates that, at any time during the planned modification period, the Air Force could have purchased the remaining quantities and saved money. For example, even as late as fiscal year 1980, a consolidated purchase of the remaining 224 kits would have resulted in more than \$366,000 savings.

Estimated Benefits Resulting from Consolidated
Purchase of Modification Kits

<u>Fiscal year</u>	<u>Consolidated kit purchase qty</u>	<u>Unit purchase price</u>	<u>Air Force total cost</u>	<u>Savings to Air Force (note a)</u>
1976	475	\$ 865	\$410,875	\$874,179
1977	386	951	367,086	840,983
1978	319	1,047	333,993	810,326
1979	268	1,400	375,200	715,740
1980	224	2,960	663,040	366,300
1981	147	4,440	652,680	148,740
1982	67	6,660	446,220	

a/Savings estimated on the basis that the Air Force will purchase 475 kits during the above period and that the total cost will be \$1,285,054.

Considering the fact that this is a mission essential modification, we believe that by the fifth year of the program the need for the remaining kits could be firmly established, thereby satisfying congressional and DOD concerns about purchasing kits for programs that may be canceled.

Center officials also provided information on two recent modification programs which if modifications kits were procured only once rather than in piecemeal quantities over \$1 million initial savings could result. One such program required purchasing kits over a 2-year period. If the Air Force was allowed to purchase all of the kits in one year, it could save \$786,000. The other program requires purchasing 477 modification kits over an 8-year period with a total estimated cost of \$1.1 million. The average annual expenditure under planned procurement equals about \$137,000. Center officials said that all 477 kits could be purchased on a one-time buy for \$603,405, thereby saving \$469,000--over 42 percent. On both programs, center officials stated that they asked the Air Force Logistics Command for a waiver to the phased procurement concept. The request, however, was included as a brief note on the documentation which advised the Air Force Logistics Command of the proposed modifications.

THE AIR FORCE HAS NOT ESTABLISHED
PROCEDURES TO IDENTIFY RECURRING
PRODUCTION COSTS OR TO OBTAIN
EXCEPTIONS TO DEFENSE POLICY

We discussed the procedures for obtaining exceptions to DOD's-phased procurement policy with Air Force Logistics Command and Air Force headquarters officials. The Logistics

Command official was not aware of procedures that would allow exceptions. Accordingly, he could not recall an instance where an exception had been granted.

Air Force headquarters officials stated that DOD policy does not permit them to take advantage of opportunities to consolidate purchases of modification kits. They stated that DOD's policy on advance procurement is extremely restrictive in that only long leadtime items can be considered, and then only one additional year's requirement can be purchased. They concluded, therefore, that procedures to obtain exceptions were not necessary.

While we were not able to pinpoint specific reasons for cost increases of the magnitude illustrated by these examples, we did discuss the problem with Air Force procurement officials and contractors. Whenever quantities of modification kits were spread over a period of years, in addition to inflation, contractors experienced recurring production cost that could have been avoided if one-time procurements had been made. For example, both Air Force and contractor officials said that phased procurement of modification kits could often cause the Air Force to pay recurring production costs. These costs include starting up, testing, sampling, engineering, and disassembling the production line.

We discussed the full funding concept with the Deputy Director of Procurement, Office of the Secretary of Defense. According to the Director, Directive 7200.4 will not limit advance procurement where substantial savings can be achieved. He noted that other factors, such as budget constraints, production capability, and installation schedules, should also be considered. He emphasized the need to report all cases where substantial savings can be achieved through advance procurement so that prudent budget decisions can be made. As noted above, however, the Air Force does not have procedures to do this.

We also discussed the full funding concept with other DOD officials. We found that the problem of limiting advance procurement has been under study by the Joint Logistics Commanders. On September 24, 1980, the Joint Logistics Commanders submitted to the Deputy Secretary of Defense a recommendation to clarify Defense Directive 7200.4 permitting advance procurement in situations where good business practices or savings can be achieved. DOD had not responded to the recommendation at the completion of our review.

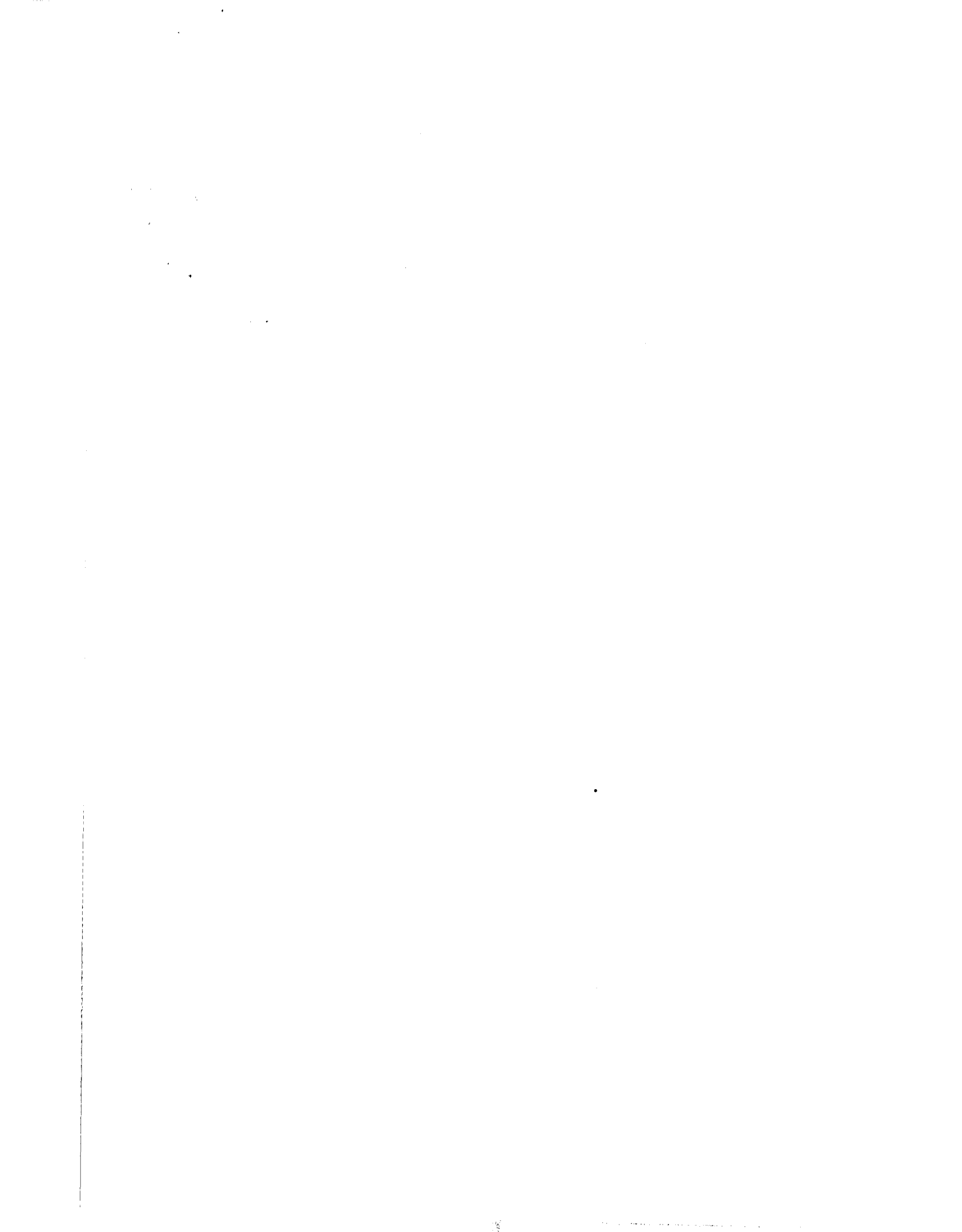
CONCLUSIONS

In its application of the phased procurement policy, the Air Force overlooks opportunities for significant savings. The Congress, DOD, and the Joint Logistics Commanders have all

recognized that, in certain situations, exceptions to the phased procurement policy may result in significant savings. Personnel at the centers pointed out situations where savings could have been achieved but were not. However, under the current DOD policy the Air Force has not established procedures for either identifying or reporting instances where significant savings could be realized by consolidating modification kit purchases.

RECOMMENDATIONS

We recommend that the Secretary of Defense (1) adopt the Joint Logistics Commanders' recommendation to clarify the DOD directive permitting advance procurement in situations where good business practices and significant savings can be achieved and (2) clarify the current DOD policy permitting procurement of modification kits in optimum quantities where significant recurring production costs can be avoided without risking canceled programs. We also recommend that the Secretary require the Secretary of the Air Force to establish procedures for the air logistics centers to identify, document, and report instances where recurring production costs on modification kit items can be avoided through consolidated and advanced procurements.



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