



**REPORT TO
THE CONGRESS OF THE UNITED STATES**

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**REVIEW OF
DETERMINATION OF REQUIREMENTS
FOR AIRCRAFT GROUND SUPPORT EQUIPMENT
SHOWS NEED FOR MANAGEMENT IMPROVEMENT**

DEPARTMENTS OF THE NAVY AND THE AIR FORCE

B152600

Nov. 13, 67



**BY
THE COMPTROLLER GENERAL
OF THE UNITED STATES**

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COMPTROLLER GENERAL OF THE UNITED STATES
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To the President of the Senate and the
Speaker of the House of Representatives

This report presents our findings on a review directed primarily toward determining whether the selection, authorization, and purchase of aircraft ground support equipment was properly correlated with actual needs. Our review concentrated on ground support equipment related to the F-4 aircraft because it was one of the newest aircraft being used by the military services.

The **F-4**, Phantom II, a supersonic all-weather fighter and attack aircraft, was designed and developed for the Navy in 1954. Subsequently, the Department of Defense determined that the **F-4** would **also** be procured for the Air Force and would be adapted for use as a fighter-bomber and reconnaissance-fighter.

As part of the production contracts with the manufacturer--the McDonnell Douglas Corporation--the Navy and Air Force selected over 2,500 ground support equipment items to maintain the aircraft. The term ground support equipment refers to all items required to inspect, service, repair, safeguard, transport, or otherwise maintain the operating status of the aircraft. Purchases of **F-4** ground support equipment amounted to about \$265 million through fiscal year 1966.

Our review of the utilization of 562 of the ground support equipment items, showed that authorized allowances for 129 (23 percent) were questionable. For example, canopy and breather door struts purchased as safety equipment to prevent injury to maintenance personnel were **not** needed in the quantities purchased. We believe that this, and similar situations **evolved** because the Navy and Air Force did not provide for adequate detailed reviews of actual equipment needs at locations **where new** production aircraft were assigned.

We found that, if the Navy and Air Force had coordinated their needs for ground support equipment effectively, procurement costs could have been reduced by at least \$1.2 million. This savings could have been achieved if the Air Force had not purchased more expensive equipment than the Navy and if the Navy had not continued to purchase items recommended by McDonnell after the Air Force refused these recommendations. These conditions were found in four of the nine instances we tested in which the Navy and Air Force were not using the same type of equipment.

We believe that costs amounting to as much as \$12.5 million could have been avoided or deferred if, in procuring support equipment, the Navy had given appropriate consideration to the number of **F-4** aircraft actually on hand and if the Navy and Air Force had considered the amount of equipment already acquired from McDonnell. When we pointed out these situations during our review, military service representatives stated that immediate action would be taken to include these factors in their considerations.

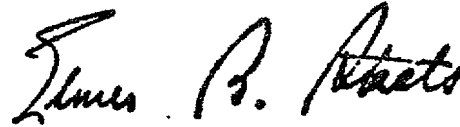
The Deputy Assistant Secretary of Defense (Materiel) concurred generally with our findings and conclusions. We were told of plans executed to achieve improvements emphasized as needed in our draft report. Procedures, developed by the Navy and Air Force, for the overall management, selection, and procurement of ground support equipment for subsequent joint service aircraft programs were reported. We were informed that more thorough reviews, including on-site surveys, would be initiated in fiscal year 1968.

These improved management policies should materially assist in preventing deficiencies such as those disclosed by our review. We plan to evaluate the effectiveness of the Department's actions as part of our continuing review of its supply management.

We are reporting this matter because the Congress has expressed interest in the **F-4** aircraft program and because we believe that the Congress should be apprised of the actions being taken to improve methods of determining needs for aircraft ground support equipment.

B-152600

Copies of this report are being sent to the Director, Bureau of the Budget; the Secretary of Defense; the Secretary of the Navy; and the Secretary of the **Air Force**.

A handwritten signature in black ink, reading "James B. Argets". The signature is written in a cursive style with a large initial "J" and a prominent "A".

Comptroller General
of the United States

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REVIEW OF THE
DETERMINATION OF REQUIREMENTS
FOR AIRCRAFT GROUND SUPPORT EQUIPMENT
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DEPARTMENTS OF THE NAVY AND THE AIR FORCE

INTRODUCTION

The General Accounting Office has reviewed the requirements for and utilization of selected ground support equipment procured by the Departments of the Navy and Air Force to service and repair aircraft.

Our review was directed primarily toward determining whether the selection, authorization, and purchase of ground support equipment for *F-4* aircraft was properly correlated with actual needs. In reviewing the requirements for and utilization of *F-4* aircraft ground support equipment, we (1) inquired into policies and procedures followed in determining what items were to be used, (2) examined requirements computations (3) reviewed contracts and related records for ground support equipment, and (4) determined whether quantities authorized in allowance documents related to actual usage experience. We did not undertake an overall evaluation of the management of the *F-4* aircraft ground support program.

The review was conducted primarily at the McDonnell Douglas Corporation (formerly the McDonnell Aircraft Corporation), St. Louis, Missouri, and the following Navy and Air Force installations:

Bureau of Naval Weapons, Washington, D.C.¹
Navy Aviation Supply Office, Philadelphia,
Pennsylvania.
Aeronautical Systems Division, Wright-
Patterson Air Force Base, Ohio.
Marine Corps Air Station, Cherry Point,
North Carolina.
Naval Air Station, Miramar, California.
Ogden Air Materiel Area, Ogden, Utah.
MacDill Air Force Base, Tampa, Florida.
Eglin Air Force Base, Florida.
Shaw Air Force Base, Sumter, South Carolina
Headquarters, Tactical Air Command, Langley
Air Force Base, Virginia.
Headquarters, Air Force Logistics Command,
Wright-Patterson Air Force Base, Ohio.

Our review at the field locations was related to conditions existing in fiscal year 1966. This review, one of a number of reviews of the F-4 program performed in accordance with a request from the Chairman, Committee on Appropriations, House of Representatives, was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), the Accounting and Auditing Act of 1950 (31 U.S.C. 67), and the authority of the Comptroller General to examine contractors' records, as set forth in 10 U.S.C. 2313(b).

The principal officials of the Department of Defense, Department of the Air Force, and Department of the Navy responsible for administration of activities discussed in this report are shown in appendix I.

'Effective May 1, 1966, the responsibility of administering the F-4 program was assigned to the newly organized Naval Air Systems Command. For simplicity, in this report we have referred to the Systems Command predecessor--the Bureau of Naval Weapons--as the responsible agency.

BACKGROUND

The *F-4*, Phantom 11, a supersonic all-weather fighter and attack aircraft, is manufactured by the McDonnell Douglas Corporation, St. Louis, Missouri. It was originally designed and developed for the Department of the Navy under a contract awarded in October 1954.

Subsequent to the Navy's purchase of the aircraft, the Department of Defense determined that the F-4 would also be procured for Air Force use. Under a Navy contract dated August 31, 1961, McDonnell adapted the F-4 for Air Force use both as a fighter-bomber and as a reconnaissance-fighter. Although substantial quantities of the *F-4* aircraft were purchased for Air Force use, the Bureau of Naval Weapons' was responsible for negotiating and administering the contracts with McDonnell.

As a part of the production contracts with McDonnell, the Navy and Air Force have procured ground support equipment for use in servicing and repairing their aircraft and aircraft components. Through fiscal year 1966, contracts with McDonnell for F-4 ground support equipment totaled about \$265 million. In addition, a substantial amount of ground support equipment was procured by both the Navy and Air Force from sources other than McDonnell. Over 2,500 ground support equipment items were selected by the Navy and Air Force for servicing their respective versions of the F-4 aircraft.

When a new aircraft model, such as the F-4, enters the military supply system, the Navy and Air Force generally follow the same basic procedures relative to planning support for the aircraft. During the early stages of development and use of a new aircraft, the contractor usually provides the required maintenance support. The military service authorizes the contractor to procure or manufacture approved items and quantities of support equipment required

¹See footnote on page 2.

for maintenance through the contractor support period. This equipment remains in the custody of the aircraft manufacturer until the military service assumes responsibility for support of the aircraft.

Presently, with the exception of a limited number of test aircraft being supported by McDonnell, the Navy and Air Force have full logistic support responsibility for all F-4 aircraft produced.

In preparing for the military service to assume responsibility for support, the aircraft manufacturer submits listings of items and quantities of support equipment which it has determined the military service will require to maintain the aircraft during the initial period of service. Under Navy procedures, the contractor's recommendations are reviewed and approved, revised, or disapproved by the Bureau of Naval Weapons. Since the Air Force entered the F-4 program after development of the aircraft for the Navy, the Air Force was able to utilize information developed by the Navy in its equipment allowance conferences with the contractor.

From the approved contractor recommendations, the Navy and Air Force prepare equipment allowance documents which include the quantity of each item to be utilized at each maintenance level. The services procure the equipment on the basis of quantities shown in the allowance documents.

Both the Navy and Air Force have established procedures whereby the using activities responsible for maintenance are required to report unsatisfactory equipment and unrealistic equipment allowances to the activities responsible for preparation and revision of the allowance documents. In addition, the Air Force has procedures for higher level commands to perform detailed reviews at maintenance activities to determine the actual need for and usage of the equipment. The Bureau of Naval Weapons, which was responsible for preparation and revision of Navy allowance documents, does not perform regularly scheduled reviews of the equipment authorized for use by Navy maintenance activities.

We were informed during our review that no internal audits had been performed of the determination of needs for ground support equipment for the F-4 aircraft. Internal audits in this area are not regularly scheduled by the audit services, but special reviews have been performed in the past for specific aircraft. For example, we were advised that an audit of aerospace ground equipment associated with F-4 aircraft engines was made by the Air Force Auditor General and that the results were included in a report on the logistic management of aircraft engines issued in March 1964.

FINDINGS AND CONCLUSIONS

POTENTIAL SAVINGS THROUGH IMPROVEMENTS IN SELECTING, AUTHORIZING, AND COMPUTING REQUIREMENTS FOR AIRCRAFT GROUND SUPPORT EQUIPMENT

Future savings in aircraft program costs can be realized by improvements in determining needs for aircraft ground support equipment. In our review of ground support equipment for F-4 aircraft, we found that the F-4 program costs could have been significantly reduced had both military services performed adequate reviews of equipment allowances and utilization of equipment in the field. This position is based on our observation of numerous instances where (1) equipment was on hand which was not needed, (2) available and less expensive substitute equipment could have been used, and (3) equipment on hand was unsatisfactory for maintenance requirements,

We found also that, if the Navy and the Air Force had effectively coordinated their needs in the selection of this type of equipment, the cost of the F-4 aircraft program could have been reduced by over \$1.2 million. In addition, we believe that costs amounting to as much as \$12.5 million could have been avoided, or deferred, had the Navy and Air Force properly considered all available assets and losses of aircraft at the time F-4 aircraft ground support equipment requirements were computed.

The Department of Defense has informed us of improved procedures and management techniques established or planned in the Department of Defense. These measures should improve the interservice and intraservice determination of needs for ground support equipment and should result in the type of savings indicated above.

Details of our findings and observations relating to the F-4 ground support equipment are presented below.

Need for timely reviews of equipment
at using activities to identify
unrealistic equipment allowances

In our opinion, significant savings can be realized in the procurement of aircraft ground support equipment if, after the initial procurement and use of limited quantities of this equipment, the military services perform adequate reviews of the actual use that is being made of the equipment. In our review of 562 ground support equipment items authorized in Navy and Air Force equipment allowance documents, we found that authorized allowances for 129 of the 562 items reviewed, or about 23 percent, were questionable on the basis of current use being made of the items,

Our review was conducted at five installations where F-4 aircraft were stationed. At these locations we observed authorized equipment which was not used by maintenance personnel, was not used in authorized quantities, was not satisfactory for maintenance requirements, or was more expensive than substitutes which were available.

We believe that these unrealistic authorized allowances resulted from the Navy's and Air Force's relying on the using activities to report erroneous allowances rather than their performing detailed reviews at the maintenance activities of the actual need for and adequacy of the authorized equipment. We found that the Bureau of Naval Weapons, which was responsible for preparation of Navy allowance documents, had no procedures which required periodic on-site reviews of the authorized equipment and that, although the Air Force had established such procedures, only two reviews had been performed at F-4 activities in the United States at the time of our review,

We were unable to obtain detailed procurement information for 66 of the 129 items which, in our opinion, had questionable allowances. However, we determined that the procurement cost for the other 63 items was approximately \$15.3 million. We believe that a substantial portion of this procurement could have been prevented had adequate and timely reviews of equipment authorizations been made.

Examples of questionable allowance are discussed below.

Pilot canopy strut

Aft canopy strut

Breather door strut

The canopy and breather door struts were purchased by both the Navy and Air Force as safety equipment to prevent injury to maintenance personnel. Two breather door struts and one each of the canopy struts were purchased for each aircraft. At the time of our review, the Navy had purchased quantities of the items valued at \$182,000 and the Air Force had purchased quantities valued at \$352,000.

We were advised by F-4 maintenance personnel at Air Force activities that the items were needed and used in the quantities purchased. Navy maintenance personnel, however, stated that the quantities purchased were excess to actual needs.

At the Miramar Naval Air Station, maintenance personnel stated that one each of the canopy struts would be sufficient for two aircraft and that two breather door struts would be sufficient for three aircraft. At the Cherry Point Marine Corps Air Station, maintenance personnel stated that the items were required only when the aircraft were in hangars and that hangar space was available for only six aircraft at one time. Therefore, at the time of our review, only six canopy struts and 12 breather door struts were needed instead of 15 of each of the canopy struts and 30 of the breather door struts, the requirement based on the number of F-4 aircraft assigned to the air station.

We were advised by the Department of Defense that the Navy had taken the necessary steps to change the allowance.

Screwdriver

A screwdriver (FSN 5120-957-1127) was authorized for use in engine maintenance. At the time of our review, the Air Force had purchased 109 of these screwdrivers from McDonnell at an estimated cost of \$2,840, or an average unit cost of approximately \$26.

We found that the screwdrivers authorized at three Air Force F-4 maintenance activities were on hand but were not being used. Instead, we found that a different screwdriver, a regular issue item in the shop toolboxes, was being used satisfactorily in lieu of the authorized item. Air Force records indicate that the unit cost of the substitute screwdriver is 20 cents. We found also that the substitute screwdriver was the item being used by the Navy.

We were advised, subsequent to our review, that further procurement of the specialized screwdriver had been discontinued.

Filter element cleaners

The equipment used by the Navy for cleaning hydraulic filter elements consisted of eight separate items. At the time of our review, the Navy had purchased various quantities of each of the eight items at a total cost of approximately \$255,000. One of the eight items with a total cost of approximately \$183,000 is also used on another Navy aircraft in addition to the F-4.

Our reviews at McDonnell and a Navy maintenance activity indicated that the Navy equipment did not provide sufficient cleaning capabilities and that filter elements were often discarded after cleaning because they would not pass the required tests. We found that the cleaning equipment was often inoperable and that maintenance activities had to send the filter elements to Navy overhaul and repair facilities for cleaning. At the time of our review, the Air Force did not have a filter element cleaning system authorized for use by the F-4 aircraft units and, until a system should become available for use by maintenance activities, the filter elements were being sent to Air Force depots for cleaning.

The Navy, to obtain filter element cleaners with satisfactory cleaning capability, developed new procurement specifications. We have been advised that the Navy recently let a contract for procurement of these cleaners.

Need to improve Navy and Air Force coordination to prevent purchase of unneeded equipment

The F-4 aircraft program costs could, in our opinion, have been reduced by over \$1.2 million had the Navy and Air Force adequately coordinated their needs and procured common ground support equipment. We found that the Air Force did not properly evaluate ground support equipment in use by the Navy before purchasing equipment recommended by the aircraft manufacturer and that information relating to equipment not needed by one service was not adequately relayed to the other service,

Our test of nine instances in which the Navy and Air Force were not using common ground support equipment showed that, in four instances, savings could have been realized. In the four instances, we found that (1) the Air Force purchased more expensive equipment than the Navy for servicing identical aircraft subsystems and (2) the Navy continued to purchase items recommended by the aircraft manufacturer after the Air Force had disapproved the aircraft manufacturer's recommendation or had determined that the items were unnecessary after procuring limited quantities. In the other five instances, the purchase of equipment not common to both services appeared to be justified.

The following schedule summarizes the four cases comprising the \$1.2 million that our limited test showed could have been saved in the F-4 aircraft program:

	Federal Stock Number (FSN)		Increased costs incurred		
	Navy	Air Force	Navy	Air Force	Total
Navigational sub-system test set	4920-788-0087	4920-071-3851	\$	\$ 721,000	\$ 721,000
Wheel well covers	1730-783-7183 1730-788-0210		36,000		36,000
Radar dolly		1730-066-3214		431,000	431,000
Ram air outlet cover assemblies	1730-034-6392 1730-034-6393		27,300		27,300
			<u>\$63,300</u>	<u>\$1,152,000</u>	<u>\$1,215,300</u>

Details of our findings on each of the four items above are presented below.

Navigational subsystem test sets

The Navy and Air Force purchased navigational subsystem test sets (FSN's 4920-788-0087 and 4920-071-3851) from McDonnell for testing components of the F-4 navigation system. The Air Force test set was a modification of the Navy test set. The principal modifications were the removal of certain circuitry applicable to a component which is peculiar to Navy aircraft carrier operations and the addition of a cable for testing a bearing-distance-heading indicator.

The Air Force purchased 62 units of its test sets at an average unit price of about \$14,500. In addition, McDonnell estimated the nonrecurring preproduction costs for the Air Force test set to be approximately \$352,000. The average unit price of the test set purchased by the Navy was approximately \$8,585.

McDonnell also recommended the Air Force test set for Navy use; however, the Navy replied that Navy use of the Air Force test set was not essential and labeled it a "luxury" item. We found in our review of the utilization of the Navy test set that a locally manufactured cable costing approximately \$10 was added to the test set by Navy personnel for testing the bearing-distance-heading indicator.

During our review at Air Force F-4 maintenance activities, we presented data on the Navy test set to Air Force maintenance personnel. They stated that their review of the data indicated that the Navy test set would perform all the necessary tests required for Air Force operations and, with the addition of the locally manufactured cable to the Navy test set, the performance of the two test sets appeared to be identical.

Considering the increased purchase cost of the 62 Air Force test sets and the nonrecurring costs estimated by McDonnell, we believe that the Air Force increased the cost of the F-4 program by about \$721,000 by purchasing the

FSN 4920-071-3851 test set when the Navy's FSN 4920-788-0087 test set equipment with the locally manufactured cable would have performed the required testing functions.

Wheel well covers

McDonnell recommended and the Navy purchased wheel well covers (FSN's 1730-783-7183 and 1730-788-0210) to **pre-**vent damage to the main landing gear well area of the airplane wings during maintenance operations. The Air Force, however, determined that the covers recommended by McDonnell were not needed.

We found in our review at Air Force F-4 installations that the installations either did not use covers or used locally obtained covers made of plywood or rubber when **use** of covers was considered necessary. The cost of the covers acquired in this manner was negligible. We found also that the Navy used the covers purchased from McDonnell to a very limited extent when the aircraft were located on land and that use of the covers on aircraft carriers was considered to be impracticable.

The Navy purchased 365 cover assemblies from McDonnell at an estimated total cost of approximately \$85,000. About \$36,000 of the total cost was incurred by the Navy after the Air Force had determined that the more expensive covers were not needed. This amount represents, in our opinion, F-4 aircraft program costs that could have been avoided.

Radar dolly

McDonnell recommended and the Air Force approved the acquisition of a radar dolly (FSN 1730-066-3214) for use in removing, transporting, and installing the F-4 aircraft nose radar package during maintenance operations.

McDonnell had supplied a radar dolly to the Navy during the contractor support program; however, our review indicated that this dolly was not procured when the Navy assumed logistic support of its aircraft.

We were advised by a maintenance representative at a Navy *F-4* aircraft operating activity that, under normal

maintenance situations, they did not remove the entire radar package from the aircraft. The radar was tested in the aircraft and only the defective components were removed, therefore, the use of a dolly was unnecessary.

Our review at Air Force F-4 maintenance activities showed that this procedure was also followed by the Air Force. We did find at one base that maintenance personnel used the dolly on a "nice to have" basis. However, the maintenance supervisor at that base stated, and other Air Force maintenance personnel agreed, that use of the dolly was not necessary and that the dolly could be removed from the equipment allowance document without any effect on mission accomplishment.

At the time of our review, the Air Force had procured 28 of these radar dollies from McDonnell at an estimated total purchase cost of approximately \$317,000 in addition to nonrecurring preproduction costs of the dolly, which were estimated by McDonnell to be about \$114,000. If the Air Force had reviewed the need for the dolly with the Navy after McDonnell recommended the item, we believe that the Air Force would not have procured this item and that the F-4 program costs would have been decreased by about \$431,000. We have recently been advised that the Air Force will not procure additional quantities of this item,

Ram air outlet cover assemblies

McDonnell recommended the use of ram air outlet cover assemblies (FSN's 1730-034-6392 and 1730-034-6393) to both the Navy and Air Force as a means of preventing the entry of water, debris, or other foreign objects into the ram air outlet ducts of the heat and vent system when the aircraft is on the ground. At the time of our review, the Navy had purchased 1,354 cover assemblies at a total estimated cost of \$153,000. The Air Force purchased only 38 cover assemblies before canceling its requirements for the items. The Navy purchased covers valued at approximately \$27,300 after the Air Force cancellation.

We found in our review at Naval activities that maintenance personnel considered the cover assemblies to **be**

unnecessary. They stated that there was no practical need for the covers and that the covers were not used. They stated further that the ram outlets point downward providing natural drainage and that covers over the outlets retained any moisture that might be present. Subsequent to our bringing this matter to its attention, the Navy revised its requirements for the cover assemblies and advised us that no further procurement of this item was considered necessary.

We believe that the Navy, by purchasing these cover assemblies when their need was questionable, as indicated by both the Air Force cancellation of its requirements for the items and by actions subsequently taken by the Navy, increased the costs of the F-4 aircraft program by about \$27,300.

Need to consider all available
assets and aircraft losses in
requirements computations

Significant costs under the *F-4* aircraft program, in our opinion, could have been avoided or deferred had the Navy and Air Force properly considered all available assets and losses of aircraft at the time ground support equipment requirements were computed. We estimate that the avoidable or deferrable costs attributable to the failure to properly consider all available assets may have amounted to as much as \$12.5 million. The total unnecessary costs incurred as a result of not considering lost aircraft was not readily ascertainable.

As a result of the failure of responsible Navy and Air Force activities to report assets acquired at the termination of the contractor's logistics support programs, personnel responsible for computing requirements did not consider these assets when determining quantities of ground support equipment to be procured for the *F-4* aircraft. We found also that the Navy had no procedures for deleting from the computation of requirements for ground equipment items, which are procured on the basis of the number of aircraft to be supported, aircraft lost to the supply system as a result of crash damage or other types of attrition.

Under the contractor support program for the Navy, the Bureau of Naval Weapons representative at the contractor's plant was accountable for all material acquired and supplied by McDonnell. This responsibility included a requirement that a complete inventory of residue support equipment be prepared upon completion of the support program and that the inventory be submitted to the Navy Aviation Supply Office (ASO), which is the inventory control point responsible for Navy and Marine Corps aircraft equipment. Our examination of records indicated that this inventory was not prepared.

Under the contractor support program for the Air Force, the Navy and Air Force agreements allowed the Air Force to retain all ground support equipment that it could

use with the F-4 aircraft. All equipment peculiar to the Navy version of the aircraft was transferred to the Navy. Although the Air Force base supply activity where the equipment was located was required to supply listings of the equipment acquired, Air Force personnel responsible for coordinating support for the aircraft stated that they had no knowledge of any listings' having been received.

McDonnell, through the Bureau of Naval Weapons representative, submitted to ASO a listing of the equipment delivered to the Navy. ASO representatives responsible for the preparation of requirements computations, however, advised us that they had no record of the receipt of this listing and that these assets were not considered by ASO in its requirements computations.

Under the contractor support programs, McDonnell acquired quantities of **849** different ground support equipment items at a cost of about \$12,835,000. McDonnell records indicated that equipment valued at approximately \$311,000 was either retained by McDonnell or consumed during the programs. Therefore, at completion of the programs, equipment with a value of about \$12,524,000 was available for transfer to the Navy and Air Force.

Our limited review of requirements computations included **41** of the items transferred to the Navy and 35 of the items transferred to the Air Force. We found that the contractor-acquired assets were not included in requirements computations for **30** of the Navy items selected for review and for all 35 of the Air Force items. In connection with the 11 items for which ASO included contractor-acquired assets in the computations, we were advised by an ASO official that the quantities were obtained by telephone requests to McDonnell. We noted that the quantities considered by ASO were generally less than the quantities that had been acquired by McDonnell.

We found in our review of the 30 Navy and 35 Air Force equipment items, that over \$1 million worth of items were purchased in quantities which exceeded the computed requirements at the time of procurement. These purchases were made because the two services, in determining the

quantity of items needed, did not consider losses of aircraft or assets that had been transferred to them from the contractor. We are unable to state at this time the extent of unnecessary costs that these purchases represent. To the extent that the items acquired can be used to meet future needs, these purchases represent expenditures that could have been deferred. However, if, because of changes in aircraft programs or obsolescence due to technological changes, there are no requirements for the additional items procured, the purchases will represent unnecessary expenditures.

Prior to the completion of our review, military service representatives indicated that actions would be taken to consider equipment received from contractor support programs and aircraft losses in their ground support equipment requirements computations.

To illustrate our findings, we present below the information obtained in our review on three of the items.

Wing jury strut

In November 1964, ASO computed the Navy's requirements for wing jury struts (FSN 1730-788-0203) to support all Navy F-4 aircraft procured through the fiscal year 1964 production contract. A comparison of the Navy computations and our adjustment of these computations is presented below:

	<u>Aviation Supply Office</u>	<u>General Accounting Office</u>
Total aircraft procured	592	592
Less aircraft losses	<u>-</u>	49
	<u>592</u>	<u>543</u>
Quantity required (2 for each aircraft)	1,184	1,086
14 units each for 2 overhaul points	<u>28</u>	<u>28</u>
Gross requirement	1,212	1,114
Less quantity previously procured by the Aviation Supply Office	<u>933</u>	<u>933</u>
	279	181
Less quantity transferred to the Navy during contractor supply period	<u>-</u>	<u>206</u>
Net requirement	<u>279</u>	<u>-25</u>

Under a contract dated June 11, 1965, ASO issued an order for 279 strut assemblies at a cost of \$22,487. Also under that contract, ASO ordered 162 additional strut assemblies for replacement stock at a cost of \$14,580. Had ASO considered the aircraft losses in the requirements computation and considered the available contractor-acquired assets, we believe that the procurement of the 279 units computed to be required and 25 of the 162 units purchased for replacement stock, with a value of about \$24,700, would not have been necessary at that time.

Engine handling adapter

In October 1963, ASO computed the Navy requirements for engine handling adapters (FSN 1730-794-8284) to support the Navy F-4 aircraft procured through the fiscal year 1963 production contract. The computations indicated a *gross* requirement of 219, a quantity previously procured of 178, and a net requirement of 41 units which were subsequently ordered from McDonnell at an estimated cost of \$70,300.

We found that the quantity of 178 units shown in the computations as previously procured represented only the quantity of engine handling adapters which were purchased by ASO and did not include 41 units which were transferred to the Navy by McDonnell during the contractor support program. Therefore, the purchase of 41 additional units valued at \$70,300 would not have been made at the time had ASO been advised of the 41 units received by the Navy from the contractor.

Tester

The Air Force requirements computation for a tester (FSN 4920-798-1369) indicated that 149 units were needed by the Air Force for F-4 aircraft support through fiscal year 1967. The computations also indicated that the Air Force had purchased or planned to purchase the 149 units to satisfy this requirement. Our review showed that none of the units acquired by McDonnell under the contractor support program had been considered as available to satisfy Air Force requirements even though three units had been

transferred to the Air Force by McDonnell. We found that two of these units had been received by the Air Force prior to the latest Air Force procurements from McDonnell, and, therefore, we believe that, had these assets been considered, these Air Force procurements could have been reduced by two units or approximately \$20,000.

Agency action

We brought our findings to the attention of the Secretary of Defense on April 12, 1967, and pointed out the need, under multiservice aircraft procurement programs, for joint reviews to ensure that the acquisition of ground support equipment not common to both services, but recommended by the contractor, is justified. In addition, we pointed out that, when one service cancels its requirements for common usage ground support equipment, the reasons for the cancellation should be provided to the other service(s) in order for such service(s) to reevaluate their need for the equipment. We also pointed out the need for timely reviews of the use of such equipment at locations where new production aircraft are assigned.

The Deputy Assistant Secretary of Defense (Materiel), by letter dated June 19, 1967 (see app. II), informed us that the Department of Defense concurred generally with our findings and conclusions. Data was presented on the methods in effect or planned which would accomplish the needed improvements cited in our report. The reply identified procedures which the Navy and Air Force have developed for the overall management, selection, and procurement of support equipment required for subsequent joint service aircraft programs. It also indicated that more fully expanded reviews, including on-site surveys of actual usage experience, would be initiated in fiscal year 1968.

The Deputy Assistant Secretary stated in his letter that there were a few minor aspects of the report with which the Department disagreed. We have discussed these matters with his representatives and have made appropriate changes and revisions to this report.

Contractor comments

We also presented our findings to the McDonnell Douglas Corporation on April 12, 1967, and requested any comments and information it might wish to furnish. The replies, dated May 12, 1967, and August 15, 1967, indicated that the McDonnell Douglas Corporation was in general agreement with the findings presented.

Conclusions

Our limited review and tests related to F-4 ground support equipment identified a significant amount of program costs, which we believe could have been saved had the Navy and Air Force adequately determined their needs for ground support equipment. In our opinion, savings would have been possible had greater coordination existed between the Navy and Air Force in the selection of equipment. Additional savings could have been obtained had the military services adequately considered aircraft losses and all available assets at the time requirements were computed. We believe that other economies could have been effected through on-site reviews of the actual use of equipment at the units where assigned.

When we pointed out during our review that aircraft losses and equipment received from contractor support programs were not being considered in equipment requirements computations, military service representatives stated that action would be taken to include these factors in their computations.

The Deputy Assistant Secretary (Materiel), in commenting on our findings, identified new programs and procedures designed to obtain the management improvements which we identified in our review as being needed. Although we have not tested the implementation of the policies, procedures, and practices established for aircraft programs subsequent to the F-4, we believe that they should, if properly implemented, materially assist in preventing situations such as those disclosed by our review. We will inquire in our future reviews into the effectiveness and adequacy of the new procedures and other actions to be taken.

APPENDIXES

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE
THE DEPARTMENT OF THE AIR FORCE
AND THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
From	To

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

Robert S. McNamara	Jan. 1961	Present
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DEPUTY SECRETARY OF DEFENSE:

Paul H. Nitze	July 1967	Present
Cyrus R. Vance	Jan. 1964	June 1967
Roswell L. Gilpatric	Jan. 1961	Jan. 1964

ASSISTANT SECRETARY OF DEFENSE
(INSTALLATIONS AND LOGISTICS):

Thomas D. Morris	Sept. 1967	Present
Paul R. Ignatius	Dec. 1964	Aug. 1967
Thomas D. Morris	Jan. 1961	Dec. 1964

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE:

Dr. Harold Brown	Oct. 1965	Present
Eugene M. Zuckert	Jan. 1961	Sept. 1965

ASSISTANT SECRETARY OF THE AIR
FORCE (INSTALLATIONS AND LOGIS-
TICS) (formerly Materiel):

Robert H. Charles	Nov. 1963	Present
Joseph S. Imirie	Apr. 1961	Sept. 1963

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE
THE DEPARTMENT OF THE AIR FORCE
AND THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT (continued)

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

DEPARTMENT OF THE AIR FORCE (continued)

COMMANDER, AIR FORCE LOGISTICS COMMAND (created April 1, 1961, formerly Air Materiel Command):

Gen. Thomas P. Gerrity	Aug. 1967	Present
Gen. Kenneth B. Hobson	Aug. 1965	July 1967
Gen. Mark E. Bradley, Jr.	July 1962	July 1965
Gen. William F. McKee	Aug. 1961	June 1962

COMMANDER, AIR FORCE SYSTEMS COMMAND (created April 1, 1961, formerly Air Research and Development Command):

Gen. James Ferguson	Sept. 1966	Present
Gen. Bernard A. Schriever	Apr. 1959	Aug. 1966

COMMANDER, AERONAUTICAL SYSTEM DIVISION (AIR FORCE SYSTEMS COMMAND) (created April 1, 1961, formerly Aeronautical Systems Center):

Maj. Gen. Harry E. Goldsworthy	Aug. 1967	Present
Maj. Gen. Charles H. Terhune	July 1964	July 1967
Maj. Gen. Robert G. Ruegg	July 1962	June 1964

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE
THE DEPARTMENT OF THE AIR FORCE
AND THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT (continued)

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
<u>DEPARTMENT OF THE NAVY</u>		
SECRETARY OF THE NAVY:		
Paul R. Ignatius	Sept. 1967	Present
Charles F. Baird (acting)	Aug. 1967	Sept. 1967
Robert H. B. Baldwin (acting)	July 1967	Aug. 1967
Paul H. Nitze	Nov. 1963	June 1967
Fred Korth	Jan. 1962	Nov. 1963
John B. Connally	Jan. 1961	Dec. 1961
UNDER SECRETARY OF THE NAVY:		
Charles F. Baird	Aug. 1967	Present
Robert H. B. Baldwin	July 1965	July 1967
Kenneth E. BeLieu	Feb. 1965	July 1965
Paul B. Fay, Jr.	Feb. 1961	Jan. 1965
ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS AND LOGISTICS):		
Graeme C. Bannerman	Feb. 1965	Present
Kenneth E. BeLieu	Feb. 1961	Feb. 1965
CHIEF, NAVAL MATERIAL COMMAND:		
Vice Adm. Ignatius J. Galantin	Mar. 1965	Present
Vice Adm. William A. Schoech	July 1963	Mar. 1965
Vice Adm. G. F. Beardsley	July 1960	June 1963

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF DEFENSE
THE DEPARTMENT OF THE AIR FORCE
AND THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT (continued)

Tenure of office	
From	TO

DEPARTMENT OF THE NAVY (continued)

COMMANDER, NAVAL AIR SYSTEMS COM-
MAND (created May 1, 1966,
formerly Chief, Bureau of Naval
Weapons) :

Rear Adm. R. L. Townsend	May 1966	Present
Rear Adm. Allen M. Shinn	May 1964	May 1966
Rear Adm. W. T. Hines (acting)	Mar. 1964	May 1964
Rear Adm. K. S. Masterson	Nov. 1962	Mar. 1964
Rear Adm. Paul D. Stroop	Sept. 1959	Oct. 1962

COMMANDING OFFICER, AVIATION *SUP-*
PLY OFFICE:

Rear Adm. H. J. Patrick Foley, Jr.	June 1966	Present
Rear Adm. H. F. Keuhl	Feb. 1962	June 1966
Capt. John V. Koch	Dec. 1961	Feb. 1962



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

INSTALLATIONS AND LOGISTICS

19 JUN 1967

Mr. J. H. Fasick
Associate Director, Manpower
U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Fasick:

This is in reply to your April 12, 1967 letter enclosing the GAO Draft Report entitled, "Potential Savings Through Improvements in Determining Needs for Aircraft Ground Support Equipment." {Code 72002, OSD Case #2587}

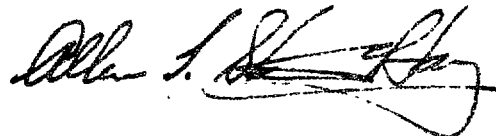
The Department of Defense is interested in the findings of the draft report as it pertains to the F-4 Weapon System, because the Joint Service Project Office concept was established for such systems as the F-4 in order to reduce, if not eliminate, the problems reported in your findings. The attached (Attachment #1) copy of DoD Directive 5010.14, "System/Project Management," details the functions of the Service Project Office (SPO) Chief. Each SPO has within its organization, representatives of each Service who are concerned with all phases of the particular weapon system such as research and development, test and evaluation, procurement, production, training, deployment and support. Therefore, there should be a minimum of the type of problems highlighted in the GAO draft report.

While we admit that optimum integrated support management on new weapon systems has not yet been obtained, we do know that the SPO concept is effective and has reduced development, production and support costs through exchange of information and a high degree of item commonality. Intensive efforts have been initiated to achieve the Joint Army Materiel Command/Naval Materiel Command/Air Force Logistics Command/Air Force Systems Command (AMC/NMC/AFLC/AFSC) Commanders' objectives of interchanging information, achieving uniformity and of preventing logistic duplication between Services. At present there are 25 joint panels/groups engaged in studies designed to achieve the above objectives. A resume of the missions of seven of these panels/groups involved in problems presented in GAO Report is attached (Attachment #2).

Our first SPO was organized for the **F-4** program and it is not surprising that there may have been some errors that are discernible in retrospect. Early decisions which, at the time, appeared to be sound later proved to be incorrect, as you pointed out. This is due, in part, to changing technology and tactics.

We intend to alert our other SPO's and Joint Logistics Commanders to insure that we continue to make improvements in selection, procurement and utilization of Ground Support equipment in order that they can avoid situations which might lead to deficiencies of the type you have reported. This is not to imply that we completely concur with the report; to the contrary, there are, as indicated, a few minor aspects with which we disagree.

The following summary of our position with respect to specifics of the report is defined in greater detail in Attachment #3.



ALLEN T. STANWIX-HAY
Major General, USA
Deputy Assistant Secretary (Material)

Attachments (See GAO note.)

GAO note: Appropriate changes have been made to this report on the basis of the material presented in the attachments. In view of these revisions, we have omitted the attachments from this report.

B-152600
AUTHOR
November 13, 1967

TITLE

DUE|NAME

B-152600

November 13, 1967