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Services Need Strategies to Reduce Cannibalizations

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Abstract
In January 2001, we reported on the major performance and accountability challenges facing the Department of Defense and identified inventory management as a high-risk area because the Department continues to maintain levels of inventory that are too high, and its management systems and procedures are ineffective. 1 We warned that if this condition persists, the Department may not have key items, including spare aircraft parts, available when needed. This would impair aircraft and other equipment readiness. To compensate for shortfalls in logistics, all the military servicesArmy, Air Force, Navy, and Marine Corpshave resorted to cannibalization. The Department defines cannibalization as removing serviceable parts from one piece of equipment and installing them in another.

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United States General Accounting Office
Washington, DC 20548

November 21, 2001

The Honorable Christopher Shays
Chairman, Subcommittee on National Security,
Veterans Affairs, and International Relations
Committee on Government Reform
House of Representatives

Dear Mr. Chairman:

In January 2001, we reported on the major performance and accountability challenges facing the Department of Defense and identified inventory management as a high-risk area because the Department continues to maintain levels of inventory that are too high, and its management systems and procedures are ineffective.[1] We warned that if this condition persists, the Department may not have key items, including spare aircraft parts, available when needed. This would impair aircraft and other equipment readiness. To compensate for shortfalls in logistics, all the military services—Army, Air Force, Navy, and Marine Corps—have resorted to cannibalization. The Department defines cannibalization as removing serviceable parts from one piece of equipment and installing them in another.

Because of your concern that heavy use of cannibalization may increase both aviation maintenance costs and workloads, you asked us to examine the practice in the services. Accordingly, we determined (1) the extent to which the Army, the Navy[2], and the Air Force depend on cannibalizations to maintain aircraft; (2) the effects of cannibalizations; and (3) the reasons for cannibalizations. In addition, we assessed the sufficiency of the actions the Department of Defense and the services are taking to reduce the practice. We participated with the services in a hearing before your Subcommittee on May 22, 2001. This report expands on the information provided in that testimony and provides recommendations. More information on the scope and methodology of our report is in appendix I.

[1] See *Performance and Accountability Series: Major Management Challenges and Program Risks: Department of Defense* (GAO-01-244, Jan. 2001).

[2] The Navy's data used in this report include data for both Navy and Marine Corps aircraft, and Navy policies are applicable to the Marines.

Results in Brief

All the military services use cannibalization extensively as a routine aircraft maintenance practice. In fiscal years 1996 through 2000, the Navy and the Air Force reported about 850,000 cannibalizations, requiring about 5.3 million additional maintenance hours. Aircraft that the services depend on to accomplish their missions had relatively high cannibalization rates. The numbers, however, are incomplete because the Navy's data are reportedly understated by as much as 50 percent, the Air Force under-reports cannibalizations, and the Army does not collect servicewide figures. As a result, neither the Department of Defense nor the services know the overall magnitude of the practice.

Cannibalizations have several adverse impacts. They increase maintenance costs by increasing mechanics' workloads, they affect morale and personnel retention, and they sometimes take expensive aircraft out of service for long periods of time. Cannibalizations can also create additional mechanical problems. The effects on workloads seem the most serious: over half of all aircraft maintenance personnel report working more than 50 hours a week, and some report working 70 hours or more. A Navy study noted that the additional work generated by cannibalizations adversely affects morale and lowers reenlistment rates. At the recent hearings before your Subcommittee, Air Force and Army officials also acknowledged that cannibalizations may have an adverse impact on morale and retention. However, because the services do not track how much time they spend on cannibalizations, they cannot assess all of the consequences.

The services have many reasons for cannibalizing aircraft and strong incentives for continuing to do so. However, with the exception of the Navy, they do not consistently track the specific reasons for cannibalizations. As a result, much of the information on causes is anecdotal. In the broadest sense, cannibalizations are done because of pressures to meet readiness and operational needs and because of shortcomings in the supply system. When parts are not available to repair a malfunctioning aircraft, and the aircraft is needed to fly a mission, the cannibalization of another aircraft for parts is often seen as the answer. A Navy study also found that cannibalizations are sometimes done because mechanics are not trained well enough to diagnose problems or because testing equipment is either not available or not working. In these cases, parts are swapped from one aircraft to another until the problem is solved.

Although the services have undertaken some initiatives to address logistics shortfalls, few specific strategies have been developed to reduce cannibalizations and the associated maintenance hours. A number of

service working groups have been asked to address cannibalizations, but they have had very limited success in determining how to reduce them. Because they view cannibalizations as a symptom of spare parts shortages, the services have not closely analyzed other possible causes or made concerted efforts to measure the full extent of the practice. As a result, neither the Department of Defense nor the services can accurately identify possible alternatives or their costs, specific improvements or changes that are needed, or the effects of cannibalizations on morale and retention.

We are making recommendations aimed at establishing standardized, comprehensive, and reliable cannibalization data collection procedures and at developing strategies to reduce the amount of time spent on cannibalizations. In comments on a draft of this report, the Department of Defense acknowledged that cannibalization is a serious issue and generally agreed with our recommendations. In accordance with the quarterly reporting requirements of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (2001 Defense Authorization Act),[3] the Department is reviewing the services' submissions to ensure that the necessary information concerning cannibalization is collected. The Department has also initiated an in-depth assessment of the cannibalization processes, including data collection and reporting procedures. The Department believes this assessment will provide a basis for the better reporting of cannibalization information and reducing cannibalization rates.

Background

Army, Air Force and Navy/Marine Corps policies allow or support the use of cannibalization to meet urgent or mission critical requirements. However, the services' maintenance policies state that such actions should be minimized, used only after certain conditions have been met, or used only as a last resort because their use tends to adversely affect morale and to aggravate the very same supply problems that they are meant to overcome. Navy policy specifically states that cannibalizations violate personnel utilization policies because they double the documentation and personnel hours needed to remove and install parts and components: two parts must be removed—from two aircraft—and two must be installed, instead of one. Although Army policy limits cannibalization to whenever a needed item is not available through the supply system, it allows

[3] P.L. 106-398, sec. 371.

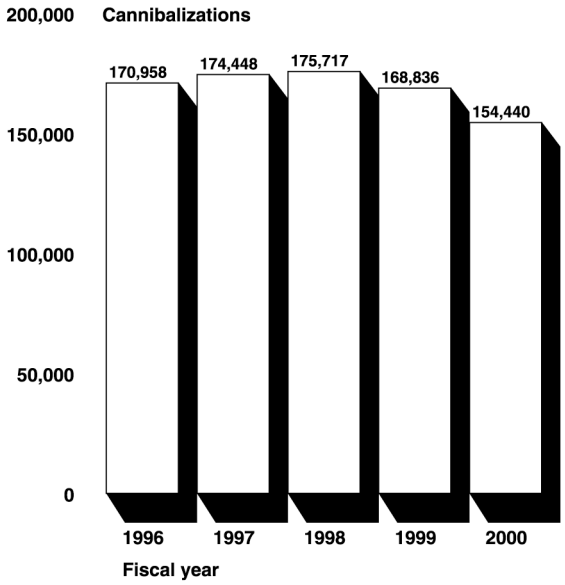
commanders at installation levels and below to use their discretion as to whether and how much to cannibalize.

Cannibalizations Are Extensive, but Full Magnitude Is Unknown

In fiscal years 1996-2000, Air Force and Navy units reported a total of about 850,000 cannibalizations, and reported annual figures ranging between 154,000 and 176,000. (See fig. 1.)

The numbers remained relatively stable in fiscal years 1996-99 and dropped slightly in fiscal year 2000, when the two services reported about 154,000 cannibalizations. The Air Force and the Navy, however, do not report all cannibalizations, and how much the Army uses cannibalizations is not known because it requires that only very selected cannibalizations be reported. As a result, total Servicewide figures may be considerably higher than those officially reported.

Figure 1: Total Air Force and Navy Cannibalizations Reported in Fiscal Years 1996-2000



Source: Air Force and Navy data.

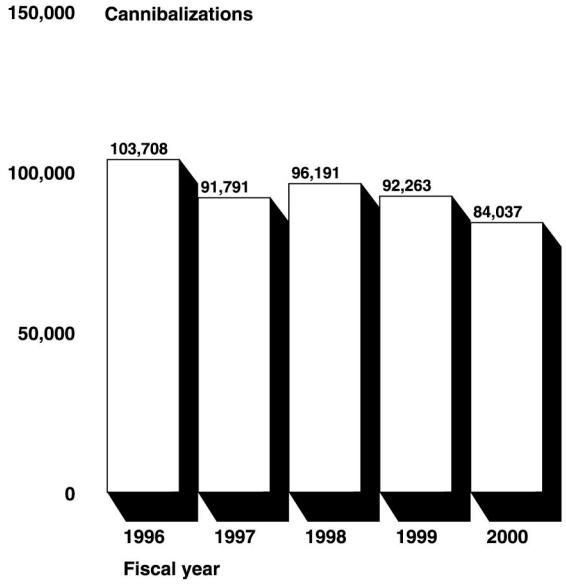
Relatively few aircraft types accounted for a large proportion of the cannibalizations in the Navy and Air Force. We found that selected aircraft that the services depend on to accomplish their missions had relatively

high cannibalization rates. Some of these aircraft experienced a significant increase in the number of cannibalizations from fiscal year 1996 through fiscal year 2000.

Navy

During the 5-year period under study (fiscal years 1996-2000), the Navy reported approximately 468,000 cannibalizations, or on average, about 94,000 a year. (See fig. 2.) However, according to recent studies, the actual number of cannibalizations may be much higher. In fiscal year 1998, a Navy group noted that as many as half of all Navy cannibalizations may go unreported. In April 2000, the Navy Inspector General also confirmed that cannibalizations were being consistently underreported and that commanders were concerned that cannibalization was becoming an accepted maintenance practice.[4]

Figure 2: Total Navy Cannibalizations Reported in Fiscal Years 1996-2000

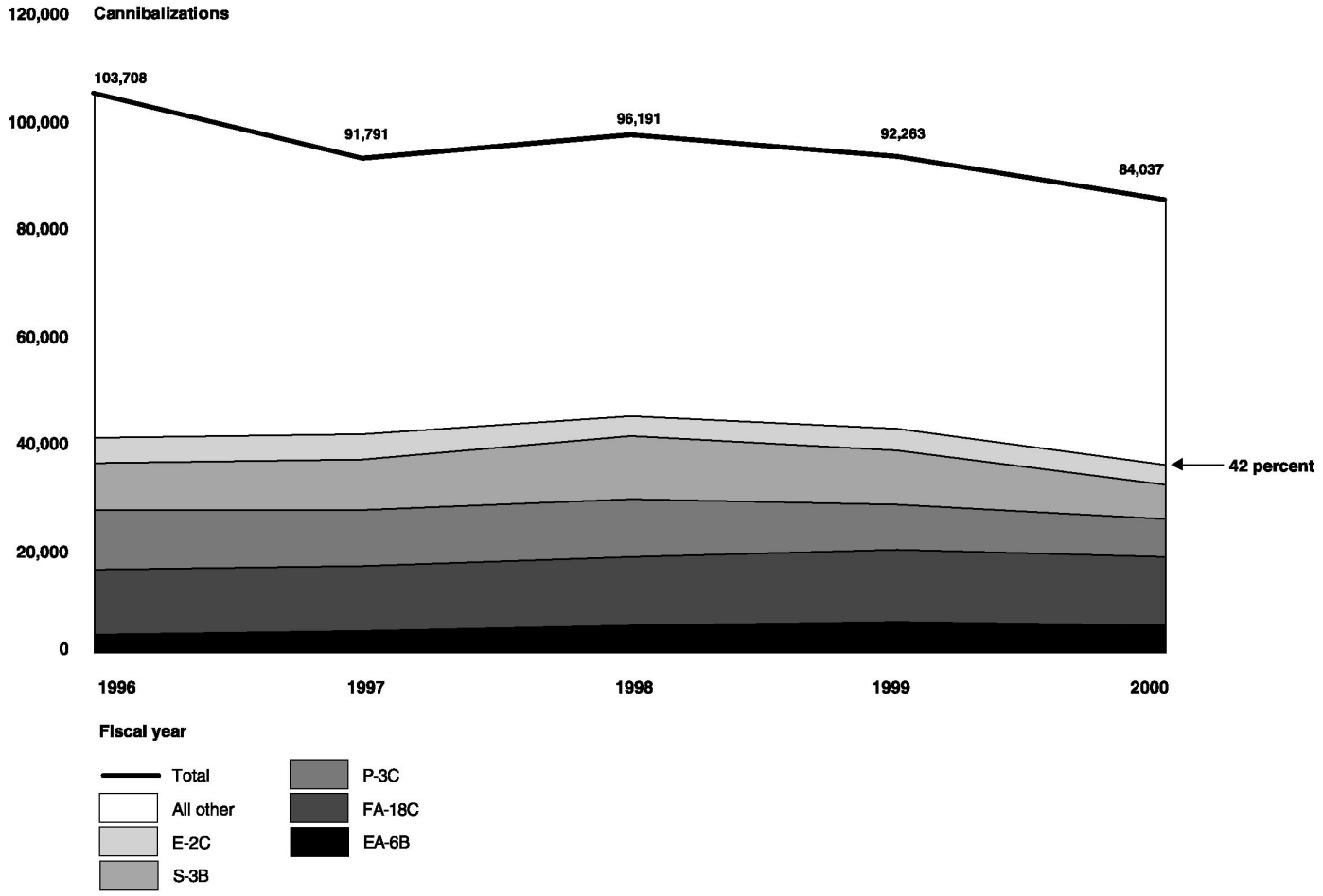


Source: Navy data.

[4] See *Final Report of Naval Aviation Spares and Readiness*, Naval Inspector General (Apr. 28, 2000).

In fiscal year 2000, the Navy reported carrying out cannibalizations on 63 different aircraft types. (See app. II.) Five of these aircraft types—FA-18C, P-3C, S-3B, EA-6B, and E-2C—accounted for about 35,000 of the service's 84,000 reported cannibalizations, or 42 percent of the total for that year. (See fig. 3.) These five aircraft types accounted for 958 aircraft, or 26 percent of the total inventory for which cannibalizations were reported in fiscal year 2000. (See app. II.) The FA-18C is naval aviation's principal strike fighter for both the Navy and Marine Corps. The P-3C provides the Navy with antisurface warfare, command communication, battle group support, littoral surveillance, and aerial mining. The EA-6B is an all-weather electronic attack aircraft that operates from aircraft carriers and land bases and is the only Department of Defense aircraft that can electronically jam enemy antiaircraft radar.

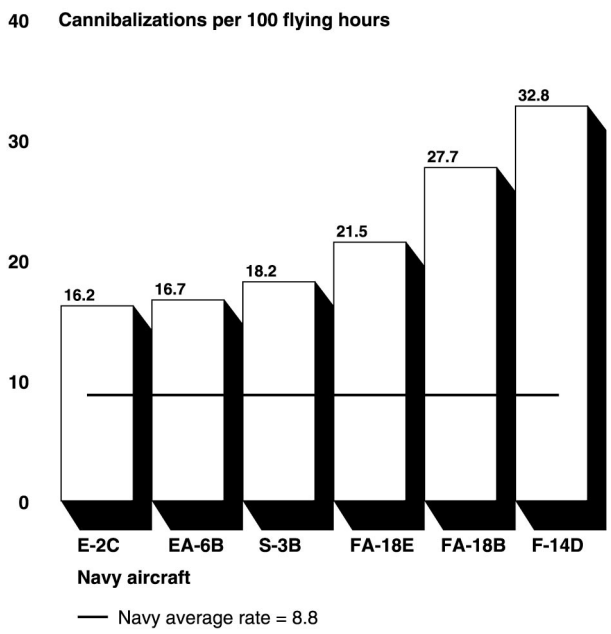
Figure 3: Navy Aircraft Reporting the Highest Number of Cannibalizations in Fiscal Year 2000



Source: Navy data.

The Navy measures cannibalization rates as the number of cannibalizations per 100 flying hours. In the 5-year period, the Navy's average cannibalization rate ranged from a high of 9.6 in fiscal year 1997 to a low of 8.8 in fiscal year 2000. In spite of the drop in the servicewide average rate, four aircraft types (S-3B, FA-18E, FA-18B, F-14D) had more than twice the average cannibalization rate in fiscal year 2000, and two others (E-2C and EA-6B) had almost twice the average rate. (See fig. 4.)

Figure 4: Navy Aircraft With the Highest Cannibalization Rates for Fiscal Year 2000



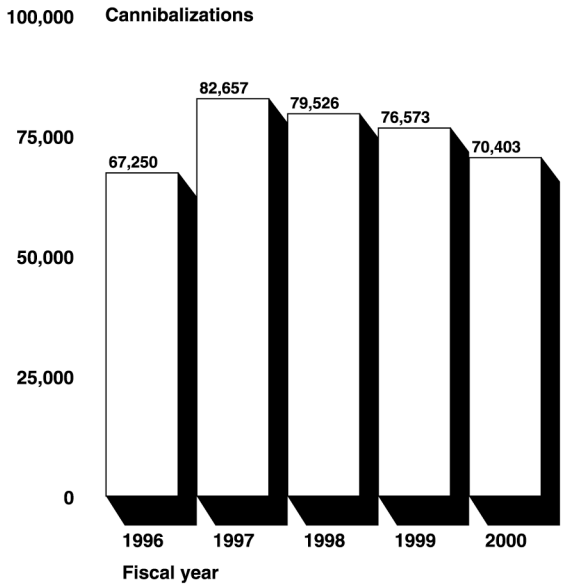
Source: Navy.

Air Force

In fiscal years 1996-2000, the Air Force reported about 376,000 cannibalizations, or on average, about 75,000 a year. (See fig. 5.) However, as with the Navy, these numbers may also be low. In a 1998 review, the Air Force Audit Agency noted that maintenance technicians did not always report cannibalizations.[5] Unlike the Navy Inspector General, the Air Force Audit Agency did not attempt to quantify the extent of underreporting. But the Air Force Deputy Chief of Staff for Installations and Logistics, at the hearing earlier this year, contended that Air Force information systems, while not perfect, do allow reasonably good insight into cannibalizations.

[5] See *Report of Audit on Maintenance Analysis Program*, Air Force Audit Agency (July 31, 1998).

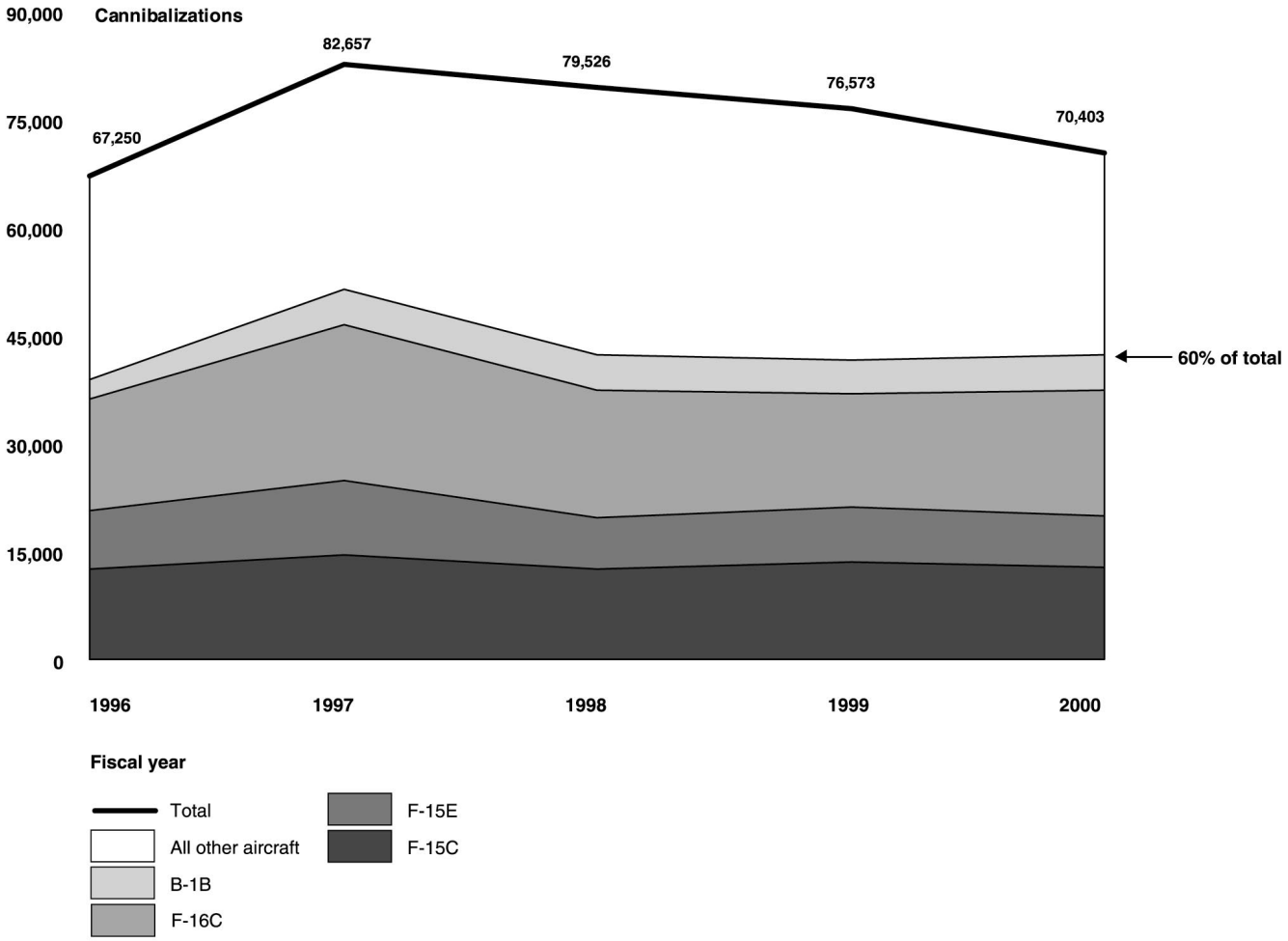
Figure 5: Total Air Force Cannibalizations Reported in Fiscal Years 1996-2000



Source: Air Force data.

Of the 28 Air Force aircraft types that reported cannibalizations in fiscal year 2000, 4 accounted for about 60 percent of the service's total. These included three fighter aircraft (F-16C, F-15C, and F-15E) and the B-1B bomber. (See fig. 6.) The active inventory represented by these four aircraft types included 1,743 aircraft or 42 percent of the total inventory of aircraft for which cannibalizations were reported in fiscal year 2000. (See app. III.) Several other aircraft types, including the A-10A, OA-10A, F-15B, E-3C, and F-117A, reported a 100-percent increase in cannibalizations over the 5-year period from fiscal year 1996 to fiscal year 2000.

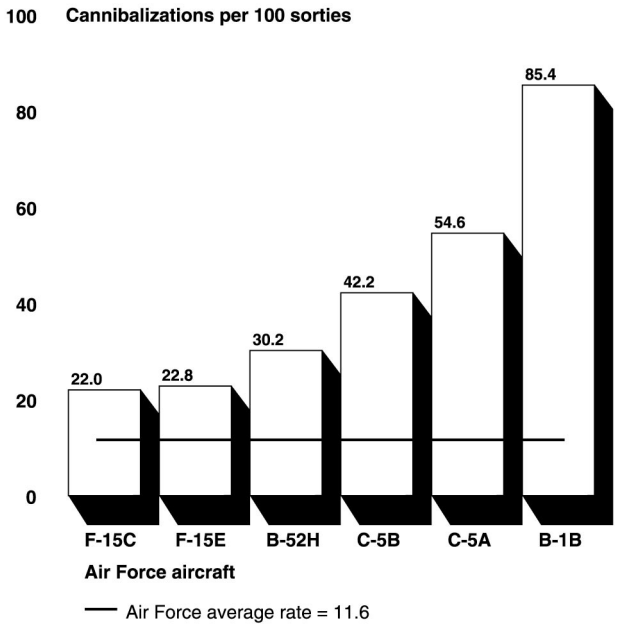
Figure 6: Air Force Aircraft Reporting the Highest Number of Cannibalizations in Fiscal Year 2000



Source: Air Force data.

Unlike the Navy, the Air Force measures cannibalization rates in terms of cannibalizations per 100 aircraft sorties (one takeoff and one landing comprise one sortie). The Air Force's average cannibalization rate during the 5-year period ranged from a low of 10.6 in fiscal year 1996 to a high of 12.7 in fiscal year 1997. However, in fiscal year 2000, the cannibalization rates of the B-52H, C-5B, C-5A, and B-1B were all well over twice the average rate of 11.6. The rates for these four aircraft ranged from 30 to 85 cannibalizations per 100 sorties. The rates of the F-15C and F-15E were almost twice the average at 22 and 23, respectively. (See fig. 7.)

Figure 7: Air Force Aircraft With the Highest Cannibalization Rates in Fiscal Year 2000



Source: Air Force data.

Army

We were unable to include Army data in our analysis because, unlike the Navy and the Air Force, the Army does not track cannibalization servicewide and does not require subordinate commands to do so. Unit commanders are allowed to report cannibalizations but do not do so consistently, and the data are not aggregated at the service level. The Army requires only that cannibalizations be reported for selected components; these make up less than 4 percent of all aviation repair parts.

According to the Army Deputy Chief of Staff for Logistics, although the Army's reporting systems do not completely track all cannibalizations, there is evidence that cannibalization rates are higher than desired and that commanders are using them more than is desired to meet readiness and mission requirements.[6] Several Army headquarters officials we spoke

[6] Statement by Lt. General Charles S. Mahan, Jr., Deputy Chief of Staff for Logistics, U.S. Army, before the U.S. House of Representatives, Committee on Government Reform, Subcommittee on National Security, Veterans Affairs, and International Relations, May 22, 2001.

with agreed that cannibalizations should be tracked to provide an overall picture of how much cannibalization is used to compensate for parts shortage or availability. However, the officials also said that they will not be able to fully track cannibalizations until a new information system is in place and that such a system will not become operational until 2003 or later.

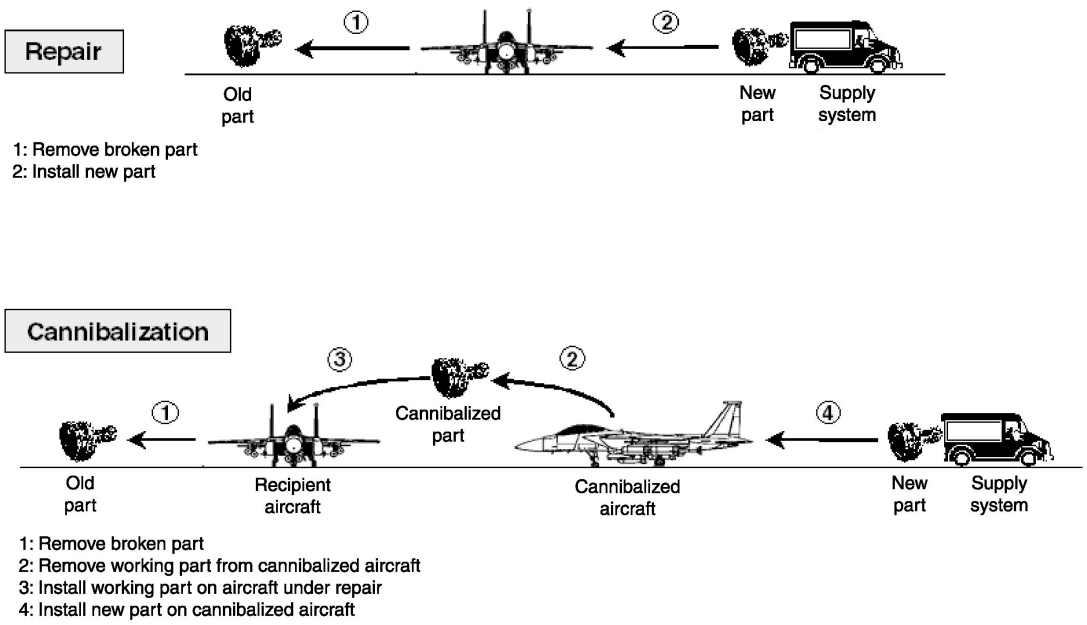
Cannibalizations Have Many Negative Effects

Cannibalizations are done to meet operational and readiness needs, but they come at a high cost. Cannibalizations have increased the workload of maintenance personnel by millions of hours since fiscal year 1996—costly time that could have been spent more productively. Evidence shows that increasing the workload of maintenance personnel also has a negative effect on morale. Cannibalizations also take expensive aircraft out of service, sometimes for long periods of time, and can create additional mechanical problems. Nevertheless, it is difficult to gauge the precise effects of cannibalizations because the services do not know how many are performed, the specific reasons for performing them, or how much time and money are spent on them.

Cannibalizations Increase Workloads

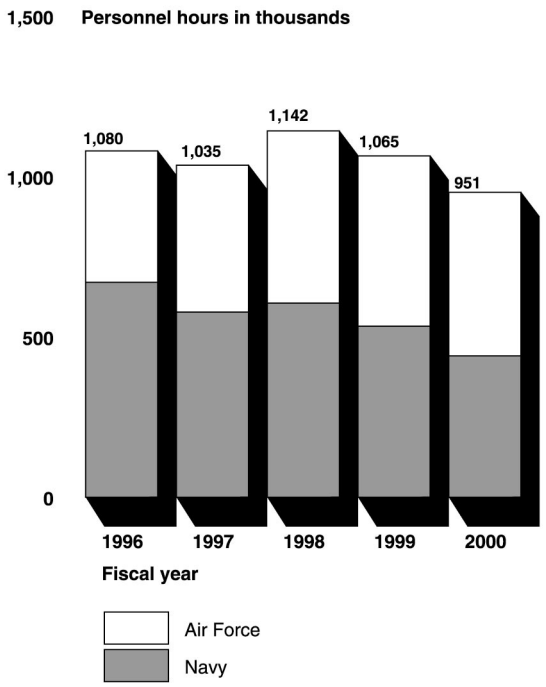
Cannibalizations increase the workload of maintenance personnel because they take at least twice as long as normal repairs. (See fig. 8.) Thus, a direct cost of cannibalizations is the additional personnel hours required to remove and reinstall a part. In the process, personnel must also check or repair other parts disturbed by the cannibalization.

Figure 8: Repairs Require Two Steps—Cannibalizations, Four



Since fiscal year 1996, the Navy and the Air Force have reported spending about 5.3 million maintenance hours on cannibalizations—the equivalent of more than 500 aviation maintenance personnel working full-time for 5 years. (See fig. 9.) In fiscal year 2000, the Navy reported spending about 441,000 personnel hours on cannibalizations at the squadron level, while the Air Force reported about 510,000 hours. According to one official, units do not have the resources to meet this increased requirement, so maintenance personnel must work harder and longer, even though they are not paid for overtime. If these people leave the military because of work and pay conditions, the services incur additional recruiting, retention, and training costs to replace them.

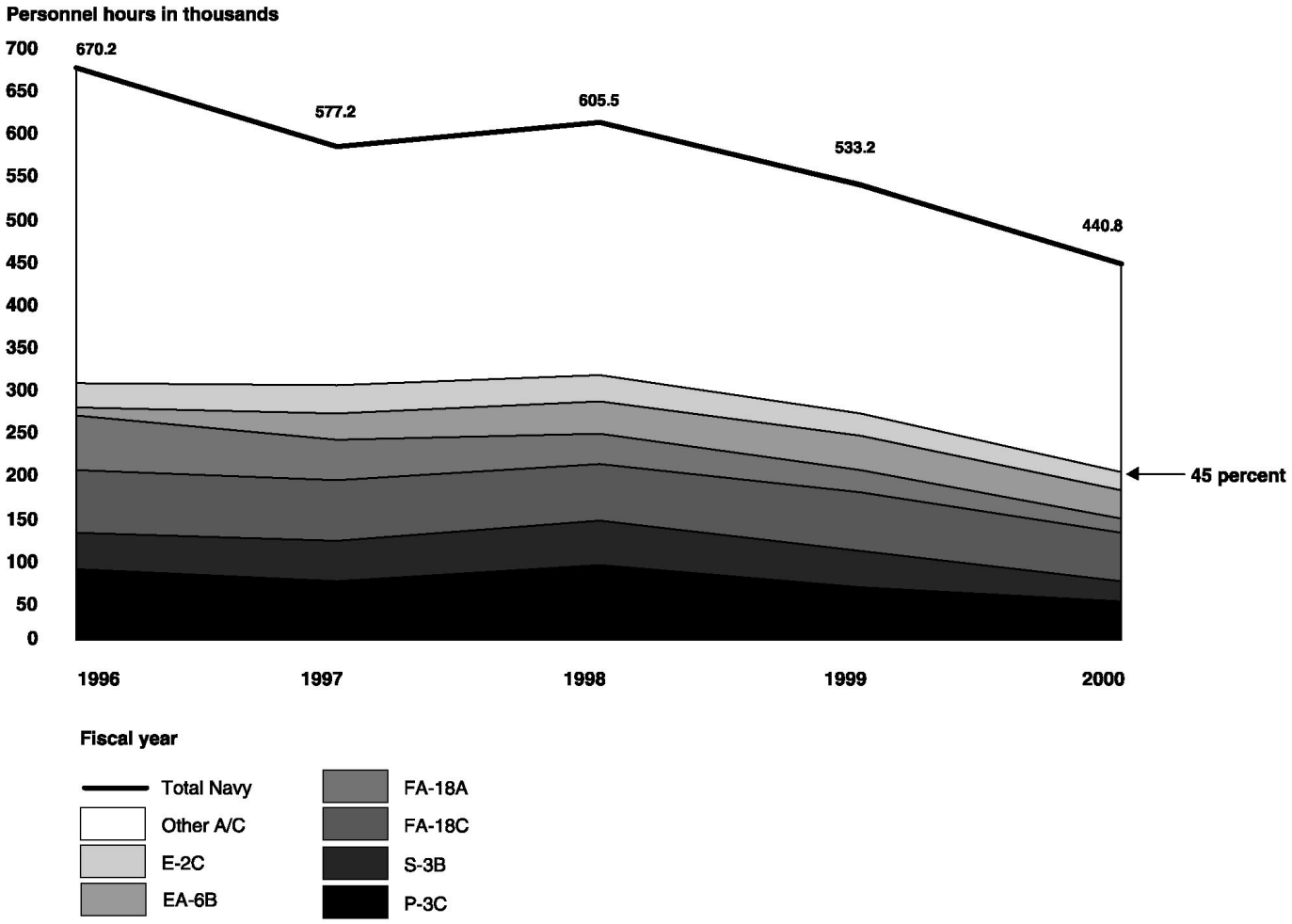
Figure 9: Total Reported Cannibalization Personnel Hours, Fiscal Years 1996-2000



Source: Navy and Air Force data.

Predictably, aircraft with the highest number of cannibalizations also accounted for a large share of maintenance hours spent on cannibalizations. For example, the Navy's FA-18A, FA-18C, S-3B, P-3C, E-2C, and EA-6B consumed about 45 percent of the total reported cannibalization hours in fiscal year 2000. (See fig. 10.) Navy data show that in fiscal years 1996-2000, about 648,000 hours were spent on cannibalizations of the FA-18, and about 152,000 hours on the EA-6B.

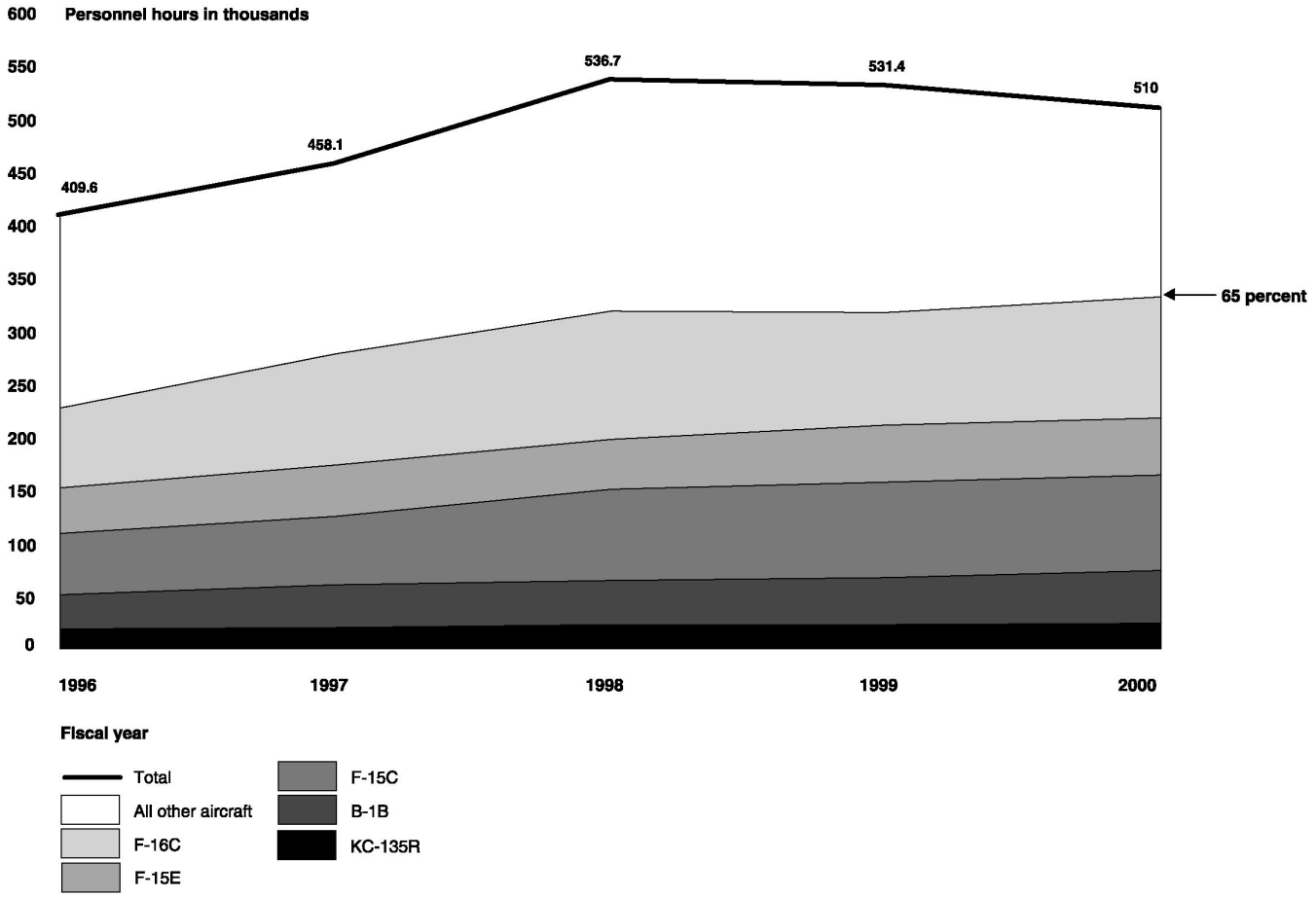
Figure 10: Personnel Hours Navy Reported Spending on Cannibalizations of Six Aircraft



Source: Navy data.

In fiscal year 2000, the Air Force's KC-135R, F-15C, F-15E, F-16C, and B-1B accounted for about 332,000 personnel hours associated with cannibalizations, while the F-16C accounted for about 114,000 of the total. These five aircraft accounted for about 65 percent of the total cannibalization hours reported by the Air Force during the fiscal year. (See fig. 11.)

Figure 11: Personnel Hours That the Air Force Reported Spending on Cannibalizations of Five Aircraft



Source: Air Force data.

Potential Effects on Morale

Evidence suggests that cannibalizations have a negative effect on morale because they are sometimes seen as routinely making unrealistic demands on maintenance personnel. Cannibalizations may have to be performed at any time, day or night, and very quickly in order to meet operational commitments. In such cases, personnel must continue working until the job is done (without additional pay). Cannibalizations increase the maintenance personnel hours required for specific repairs, thus increasing the overall workload. For example, in fiscal year 2000, the Air Force reported that cannibalizations added 510,000 maintenance hours to the

overall workload, or about 7.2 additional hours per cannibalization action. For the same period, the Navy reported that cannibalizations added approximately 441,000 maintenance hours, or about 5.2 additional hours per cannibalization. To the extent that cannibalizations contribute to extensive overtime, they may also have an adverse effect on morale and retention, thus adding to recruiting and training costs.

In April 2000, the Naval Inspector General reported that cannibalization is counterproductive and has a "huge" impact on morale. Our analysis of the data collected during our 1999 survey of active duty personnel showed that a significant portion of aviation maintenance personnel reported working more than 50 hours a week and that some reported working 70 hours. In August 1999, we reported that the majority of the factors that personnel cited as sources of dissatisfaction and reasons for leaving the military were work-related, such as lack of parts and materials to successfully complete daily job requirements.[7] At the recent hearing, Air Force and Army officials acknowledged that cannibalizations may have an adverse impact on morale and retention. But because they do not track all the maintenance hours they spend on cannibalizations, the services cannot assess all of the consequences.

One example we found of how cannibalizations may become the source of waste or frustration was that of a major EA-6B component. This component, which was part of the aircraft's jamming mechanism, was removed from or reinstalled on four different aircraft, for a total of 16 times in 6 days. In another case, an Air Force C-5 was missing 136 parts, 47 of which had been used to make another cannibalized aircraft operational.

Expensive Assets Unusable

Aircraft that are missing parts due to cannibalizations may remain grounded for long periods of time. These aircraft are not available for operations, thus denying the military the use of valuable assets. Air Force and Navy guidance states that, to the maximum extent possible, cannibalized aircraft should not remain grounded for more than 30 consecutive days. Yet we observed numerous cases in which aircraft were grounded for much longer periods. One wing we visited provided us a daily aircraft status report showing that 6 out of 28 aircraft downed for parts had not flown for 37 days or more. One of these aircraft had not

[7] See *Military Personnel: Perspectives of Surveyed Service Members in Retention Critical Specialties* (GAO/NSIAD-99-197BR, Aug. 16, 1999).

flown for more than 300 days and, according to the Maintenance and Material Control Officer, was missing 111 parts. As a result, the Navy had been unable to use this multi-million-dollar asset for almost a year. The officer estimated that it would take more than 1,000 maintenance hours to return the aircraft to flying status.

In another example, four cannibalized FA-18 aircraft were missing so many parts that they were referred to as the "wind chimes." (See fig. 12.) According to Navy officials, the number of days that these aircraft had not flown ranged from 903 to 1,756 days. They were finally transported to a Navy depot in July 2000. As of May 2001, one of them, which had been missing over 400 parts, had been funded for reassembly, while the remaining three were in storage awaiting funding approval. The depot estimated that the costs to reassembly the one aircraft would total about $568,000, assuming that the squadron that owns the aircraft supplies all the missing and failed parts. The depot's costs could increase if the squadron is not able to provide the parts.

Figure 12: Cannibalized Navy FA-18 Aircraft

Source: Navy.

In another case, a Navy squadron within 30 days of a major exercise reported that 6 of its 13 assigned aircraft had not flown for 30 or more days—2 aircraft could not fly because the wing directed that parts be given to other squadrons. A Navy training squadron we visited had 20 of its 29 aircraft down for parts or maintenance—6 due to cannibalizations. In fiscal year 2000, the same squadron reported an average of 113 cannibalizations a month.

Potential for Mechanical Side Effects

In order to remove a component, mechanics often have to remove other parts or components as well. This increases the risk of collateral damage to the aircraft and other components. For example, Air Force personnel stated that the removal of a cockpit gauge also requires the removal of its wiring harness. This operation, if repeated several times, causes excessive wear on the wiring and ultimately requires the wiring to be replaced as well. The other services also provided anecdotal evidence indicating that cannibalizations do indeed increase the possibility of damage to parts because they involve two aircraft rather than one and are often performed under very rushed conditions. Furthermore, cannibalizations do not replace a broken part with a new one, but with a used one. According to one study, cannibalizations do not restore a component to its full projected life expectancy but rather increase the chance that the component will break down prematurely.[8]

Services Cannibalize for Many Reasons

The services have many reasons for cannibalizing aircraft and strong incentives for continuing to do so. They are operating with chronic spare parts shortages, high operational tempo, and aging aircraft. The combination of these factors, along with intense readiness requirements, creates an environment that encourages cannibalization.

With the exception of the Navy, the services do not record the reasons for specific cannibalization actions. This lack of information makes it difficult to develop strategies to reduce cannibalizations. Without such information, it is impossible to know, for example, whether specific cannibalizations are done because a part is not available in the supply system, because a part is in the supply system but not where it is needed, or for reasons that have nothing to do with the supply system. At least one study has suggested that as many as half of all Navy cannibalizations are not caused by supply system problems.

Supply System Problems

Service officials believe that the spare parts shortage is the main reason for cannibalizations, and they claim that they must cannibalize if parts are not available in the right place at the right time. In previous reports, we addressed some of the reasons for these shortages, such as unexpectedly

[8] See Daniel C. Worra, "Analysis of Aircraft Maintenance Cannibalization With Respect to Aging Aircraft Within the EA-6B Community," Ph.D. Thesis, Naval Postgraduate School, Monterey, Calif., Dec. 2000.

high demand, production or repair delays, and higher-than-expected failure rates of components.

During an overhaul, Army mechanics found a cracked gear in a Chinook (CH-47) helicopter transmission. Because this created safety concerns, the entire fleet was grounded in August 1999 until the gears could be replaced. The ensuing demand exacerbated an ongoing shortage because there were not enough transmissions on hand to meet the average monthly demand. As of March 2001, 75 transmissions were still on back order.[9]

We previously reported that some Air Force parts were unavailable because they did not last as long as expected. Thus, the parts in stock were exhausted before the Air Force could restock them. For example, a skid detector for the C-5 aircraft had a 50-percent increase in failures, and all spare parts were used before the item could be ordered or restocked.[10]

We also reported that some Navy parts were not available because of delivery delays by the contractor. The repairs of two types of EA-6B antennas were delayed because the contractor completely halted repair work from December 1999 to about March 2000 because of a company merger. One of these antennas later had problems passing quality inspections, exacerbating the shortage.[11]

The Comptroller General recently testified that for years, the Department of Defense has had equipment readiness problems because of a lack of key spare parts. He also said that the lack of spare parts was a major contributor to lower-than-expected mission-capable rates.[12] In a recent report to Congress, the Department of Defense identified aviation readiness as one of its major problems and expressed concern about parts shortages and maintenance issues.[13] Yet despite these shortages, we found

[9] See *Army Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness* (GAO-01-772, July 31, 2001).

[10] See Air Force Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness (GAO-01-587, June 27, 2001)

[11] See *Navy Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness* (GAO-01-771, July 31, 2001).

[12] See *Major Management Challenges and Program Risks: Departments of Defense, State, and Veterans Affairs* (GAO-01-492T, Mar. 7, 2001).

[13] See *Department of Defense Quarterly Readiness Report to the Congress, January-February 2001.*

that Defense could not document whether the $1.1 billion that the Congress provided as part of the Emergency Supplemental Appropriations Act for Fiscal Year 1999 specifically for spare parts was actually used for this purpose.[14]

Readiness and Operational Demands

Readiness and operational demands put heavy pressure on the supply system to provide parts immediately and to wherever they may be needed. The goal of logistics and maintenance operations is to produce mission-ready aircraft by using approved maintenance practices—including the controlled use of cannibalization. Maintenance personnel told us, however, that they will do whatever is necessary to keep readiness ratings high, even if this means routinely cannibalizing aircraft and having personnel work overtime to do so.

The services also will sometimes cannibalize aircraft when it is faster to do so than to wait for a part to be delivered from across base or town. A Navy study group estimated that these cannibalizations may account for as many as half of all Navy cannibalizations.

Overall, the services believe that cannibalizations allow them to better perform their operational missions. Information is not available to determine to what extent cannibalizations contribute positively to readiness. But two Army studies concluded that readiness would be significantly degraded if cannibalizations were not performed.

Aging Aircraft

The Department of Defense has stated that as aircraft age, they tend to break down more often, take longer to inspect and maintain, and are therefore less available for training and operations.[15] According to figures by the Congressional Budget Office, the average age of all the services' aircraft increased from fiscal years 1980 to 2000.[16] The average age of Navy aircraft rose from 11 to over 16 years, that of Air Force aircraft climbed from 13 to over 20 years, and that of the Army's helicopter fleet grew from 10.2 to 17.6 years.

[14] See *Defense Inventory: Information on the Use of Spare Parts Funding Is Lacking* (GAO-01-472, June 11, 2001).

[15] See *Tactical Aircraft: Modernization Plans Will Not Reduce Average Age of Aircraft* (GAO-01-163, Feb. 9, 2001).

[16] See *CBO Paper: The Effects of Aging on the Costs of Operating and Maintaining Military Equipment* (Aug. 2001).

With aging aircraft, obsolescence can be a particularly serious problem. Original manufacturers may no longer make parts, forcing a new manufacturer to produce the item. This can result in long delays in filling orders and to increased cannibalizations. Army and Defense Logistics Agency officials informed us that the age of the Apache, Blackhawk, and Chinook helicopters is a contributing factor in these aircrafts' parts shortages. The Army Materiel Command Commander said in 1999 that the Army expects to maintain an upgraded model of the almost 40-year-old Chinook, for another 30 years. He added that the age of these aircraft increases parts consumption and makes cannibalization necessary.[17] Similarly, the Navy had problems finding a firm to manufacture F-14 transmitters and found itself with a shortage of parts. It had not procured the transmitter for 10 years. Potential contractors were reluctant to make the part. One contractor willing to do so could not produce the transmitters on schedule. Consequently, unfilled demands for the transmitter affected the aircraft's capability to perform its missions.[18]

Other Reasons

The Navy Inspector General has cited three other reasons for cannibalizations that are related more to maintenance deficiencies than to parts shortages: (1) lack of experience and insufficiently trained maintenance personnel, (2) outdated maintenance manuals, and (3) lack of testing equipment.[19] In other words, cannibalizations are sometimes done to diagnose a problem or to identify which component is not working properly. By removing a suspect part and replacing it with one that is known to be working, a mechanic can identify where a problem lies, even without testing equipment or proper training.

Strategies to Reduce Cannibalizations Vary Among Services

During the recent hearing, service officials acknowledged that cannibalization is not a preferred maintenance practice and that, in some cases, their cannibalization rates are higher than desired. In general, each noted its commitment to reduce cannibalizations and believes that its efforts to improve overall logistics support should achieve this result. Although maintenance policies for each of the services state that

[17] See GAO-01-772.

[18] See GAO-01-771.

[19] See *Final Report of Naval Aviation Spares and Readiness,* Naval Inspector General (Apr. 28, 2000).

cannibalizations should be minimized or used sparingly because of their adverse affects on workloads and morale, we found that, with the exception of the Navy, the services have few specific strategies in place to address cannibalizations servicewide. Until the services develop strategies directed specifically at reducing the maintenance hours associated with cannibalizations, we believe this inefficient practice will remain a routine part of aircraft maintenance.

Department of Defense

The Department of Defense is working with new reporting requirements for cannibalizations, but it has not placed the right level of emphasis on the problem and has not analyzed the full extent of the human capital costs and effects of cannibalizations. The 2001 Defense Authorization Act requires that the Department, on a quarterly basis, measure the extent to which each service uses cannibalizations. Consequently, each service was directed to report by May 15, 2001, to the Deputy Under Secretary of Defense for Logistics and Materiel Readiness (1) the cannibalization metric applicable to each weapon system or end item reported in the Department of Defense Status of Resources and Training System and (2) the maximum acceptable level for each metric and the rationale for establishing that level. Within 15 calendar days of the end of each quarter, the services are also to report to the Deputy Under Secretary (1) the data for one year's cannibalization (the last completed quarter and the prior three quarters), by weapon system or end item, and (2) narrative comments whenever an unfavorable trend for any system is identified and at least whenever the maximum acceptable level is exceeded for three consecutive quarters. The Department of Defense is currently working with each of the services to finalize the reporting requirements. Aside from that, however, it has done little to address the issue Department-wide.

Air Force

According to the recent testimony by its officials, the Air Force has implemented a multifaceted strategy of increased funding for spares, initiated a new policy, and developed organizational initiatives to reduce cannibalization rates. Beginning in fiscal year 2000, depot-repairable spare parts were funded at 100 percent of stated requirements. The Air Force also implemented a new policy permitting base supply offices to stock any consumable part that prevents an aircraft from being mission capable. It is also monitoring how long individual aircraft are in nonfly status if they have been used as the source of cannibalized parts. Aircraft that exceed the major command limit—usually 30 to 45 days—are monitored to ensure prompt return to flying status. Finally, the Air Force has begun a campaign

to identify all the obstacles to providing adequate spare part supplies. The analysis is to be completed by the fall of 2001.

The Air Force is also undertaking an initiative to minimize cannibalizations at bases in Langley, Virginia, and Elmendorf, Alaska. The bases have instituted a "consolidated" cannibalization program, referred to as the Cannibalization Dock Program. The program centralizes cannibalization management, whereby each of the squadrons in the wing provides a "donor" aircraft and a cadre of maintenance personnel on a rotating basis. The program is designed to ensure that as few aircraft as possible are cannibalized and that the cannibalized parts are better controlled. While these efforts are localized, they have reduced the number of cannibalized aircraft and the amount of time that aircraft remain cannibalized, minimized the number of personnel performing cannibalizations, and improved quality control over the process.

Navy/Marine Corps

The Director of the Fleet Readiness Division, Office of the Chief of Naval Operations, testified in May 2001 that the Navy and the Marine Corps have initiated a number of actions to reduce cannibalizations. These include increased funding for spare parts, increased operation and maintenance funding for the flying-hour program, and specific targeted efforts to improve the reliability of aircraft and reduce failures. The Director also cited new programs aimed at identifying and tracking the components that are cannibalized the most and at improving them.

In March 1998, the Navy established an Aviation Maintenance-Supply Readiness Study Group to recommend specific actions to reduce aviation maintenance and supply costs and increase readiness. The Study Group included cannibalizations in its study and recommended that cannibalizations and their causes be more closely tracked so that the reasons could be more precisely identified. As a result, the Navy initiated actions to better identify the specific causes of cannibalizations and increase the visibility of items that are being cannibalized extensively. Beginning in June 2001, the Navy implemented a requirement that more specific reasons for each cannibalization be reported. Although the Navy already required some reporting of the specific causes for cannibalizations, the new requirement increased the number of reportable reason codes. For example, maintenance personnel are now required to report whether a cannibalization was done (1) for troubleshooting, (2) because it was directed by higher authority, (3) because the part was not available in the required time frame to meet a flight schedule, (4) because the repair part was carried locally but was not on hand, (5) because the

repair part was not carried in the local supply system, (6) because the consumable part was not carried or not in stock, or (7) because of a lack of storage space or testing equipment. A Web site has also been established to better highlight the items frequently cannibalized and to provide an avenue for maintenance personnel, program managers, and inventory control personnel to comment on problems and track progress in resolving issues. In addition, a new reporting system is being implemented which, according to Navy officials, should improve reporting accuracy.

On July 31, 2001, the Navy convened a conference to address cannibalization issues. The conference was attended by senior leaders from various organizations, including the Defense Logistics Agency, the Naval Air Systems Command, the Naval Supply Systems Command, Marine Corps headquarters, and the Naval Inventory Control Point. Also attending were representatives from Naval Air Forces Atlantic and Pacific Fleets, the Center for Naval Analysis, and subordinate commands. Working groups were established to develop actions to reduce cannibalizations, including updating cannibalization guidance, determining appropriate disincentives for cannibalizations, improving the positioning of stock, and identifying more meaningful ways of measuring the extent of cannibalizations and the amount of maintenance hours spent on them.

Army

In September 1999, the Army commissioned a study to assess the status of cannibalization and to determine the need for implementing better controls over the process. The study, completed in 2000, found a strong appreciation among unit maintenance officers that cannibalization causes as many problems as it solves—doubling the man-hours dedicated to a single maintenance effort. However, it concluded that cannibalization was a good tool for commanders and that there appeared to be adequate command involvement to prevent abuse. The study recommended that the Army develop a data-collection system that would identify all cannibalization actions, thereby improving data analysis with regard to cannibalizations.

The study cited a controlled experiment conducted by the Army in 1987 to determine the effects of cannibalizations on the readiness rates of similar helicopter units. When the units were forced to stop cannibalizations, readiness rates dropped more than 25 percent, then returned to previous levels when cannibalizations resumed. Although the Army did not repeat the experiment, the 2000 study cited the experiment to conclude that

operational readiness would suffer if units were not allowed to cannibalize.

In testimony before your subcommittee on May 22, 2001, the Army Deputy Chief of Staff for Logistics noted that the full extent to which cannibalization is used is unknown, as the current information system used in maintenance and supply has only a limited capability to capture aircraft data. However, recognizing the need to gain greater visibility over cannibalizations, the Army is planning to initiate several actions. It is updating its information system to more effectively capture data on cannibalizations from existing aviation readiness reports. It is developing a new logistics automation system that should be able to track cannibalizations, but the system is not expected to become available until the second quarter of fiscal year 2003. In addition, it is investing heavily in a repair parts/spares recapitalization program, working to improve the reliability of its repair parts, and undertaking a series of improvements in its logistics system to increase the availability of spare parts at both the retail and wholesale levels. It is also undertaking a program to extend the service life of its helicopters and to replace parts most likely to fail.

Conclusions

Cannibalization is a serious problem with many negative effects. While it is unlikely that the practice may be completely eliminated, we believe there are opportunities to reduce it. The services are not recording all cannibalizations, the specific reasons for them, or how much time or money they spend on them. Although the Air Force and the Navy have systems in place to measure the number of cannibalizations, the data may not be sufficiently accurate. The Army's current information system does not allow for the reporting of servicewide data on cannibalizations. As a result, neither the Department of Defense nor the services can accurately determine (1) which cannibalizations are necessary and what alternatives, if any, are available to reduce the number of those that are not; (2) what specific improvements or changes need to be implemented to effectively limit the adverse effects of cannibalizations; and (3) to what extent reducing the workload associated with cannibalizations would increase personnel morale and retention rates. Having standardized data on cannibalizations should help managers make sound economic decisions concerning the relative costs of alternatives, such as changing the stockage levels or storage locations for specific parts.

We believe that the new requirement to report the use of cannibalizations as part of the current readiness reporting system outlined in the 2001 Defense Authorization Act will be beneficial. However, we believe that the

new reporting requirement established by the Department in response to this Act could be improved by including the amount of time spent on cannibalizations. In our opinion, it is the amount of maintenance personnel time spent on cannibalizations—not only the number of cannibalizations—that contributes the most to morale and retention problems and to higher maintenance costs.

Because they view cannibalization as a symptom of supply problems, the services are relying on improvements in the logistics system to reduce the practice. We agree that improvements in the supply system should help reduce cannibalizations, but we believe that actions aimed specifically at reducing the maintenance hours expended on cannibalizations are also needed. Although the services have taken some initiatives to address cannibalizations, and although we believe these initiatives are steps in the right direction, the magnitude of the problem and the many reasons for cannibalization call for a more coordinated approach that involves both the Department and the services. Because cannibalization is a problem whose causes are not service-specific and whose effects cut across all areas of Defense, the Department must provide the services with guidance and leadership in tackling the issue.

Recommendations for Executive Action

To permit the Department of Defense and the services to more accurately determine the extent of cannibalizations, we recommend that the Secretary of Defense direct the Army, the Navy, and the Air Force to establish standardized, comprehensive, and reliable cannibalization data-collection procedures and systems for cannibalizations. The procedures should require the accurate documentation of the number of cannibalizations, the associated maintenance hours, and the specific reasons for the cannibalizations. They should also require the services to identify any adverse effects of cannibalizations on maintenance costs and personnel.

The 2001 Defense Authorization Act requires the Department of Defense to measure, on a quarterly basis, the extent of cannibalizations. We recommend that the Secretary of Defense require the services to measure and report the number of maintenance hours associated with cannibalizations.

We also recommend that the Secretary of Defense direct the services to develop strategies to reduce the number of maintenance hours spent on cannibalization, ensure that cannibalized aircraft do not remain grounded for long periods of time, and reduce the adverse effects of cannibalizations

on maintenance costs and personnel. At a minimum, the strategies should include criteria to determine (1) which cannibalizations are appropriate, (2) cannibalization- reduction goals, and (3) the actions to be taken to meet those goals. The services must assign responsibility for ensuring that goals are being met and allocate resources for this purpose.

Agency Comments and Our Evaluation

In written comments on a draft of this report, the Department of Defense concurred with the intent of all our recommendations and commented that cannibalization is a serious issue. The Department indicated, however, that cannibalization accounts for a "negligible percentage" of total maintenance hours. We believe that that the 5.3 million maintenance hours spent by the Navy and the Air Force on cannibalizations in fiscal years 1996-2000–the equivalent of more than 500 aviation personnel working full-time for 5 years—is significant, especially considering that, as our report points out, the Navy's data are probably understated by as much as 50 percent, the Air Force underreports cannibalizations, and the Army does not collect servicewide figures. In addition, virtually all Navy and Air Force aircraft types reported cannibalization actions for fiscal year 2000. Several of these aircraft experienced cannibalization rates from about 2 to over 7 times the service average. These data suggest that the services may benefit most by focusing their attention on specific aircraft types where cannibalization problems are the most severe.

The Department does not agree that cannibalization is a pervasive problem throughout the military. While the Department indicated that a few weapons systems are showing cannibalization rates higher than desired, overall cannibalizations are declining—for example, the levels for fiscal year 2000 are the lowest in 4 years. Even so, as our report indicates, the Navy and the Air Force still reported spending almost 1 million personnel hours cannibalizing aircraft that year. And senior service officials, who testified before your subcommittee on May 22, 2001, acknowledged that cannibalization rates are too high and need to be reduced.

The Department concurred with our recommendation to establish standardized, comprehensive, and reliable cannibalization data collection procedures. According to the Department, an in-depth assessment of the impact of cannibalization has already been initiated. The Department said that the assessment will identify the causes and effects of cannibalizations and will recommend improvements. The Department said this assessment will provide a basis for potential modifications to logistics management policies and strategies.

With regard to our recommendation that the number of maintenance hours associated with cannibalizations be included in the Quarterly Readiness Report to the Congress, the Department said the recommendation was "redundant" because existing legislation already requires that this be done. However, our review of the latest readiness report (for the quarter ending June 2001) revealed that while cannibalization rates were being reported by weapon system, the associated maintenance hours were not. We believe that the hours spent on cannibalizations, not the number of cannibalizations, are the most important indicator of the negative impact of the practice on maintenance personnel and that this information should be included in the readiness reports. Although the Department has not made the number of personnel hours spent on cannibalizations part of its reporting requirement, it did state that it is reviewing the data submitted by the services to ensure that all necessary information is collected.

We performed our work from July 2000 through November 2001 in accordance with generally accepted government auditing standards. Our scope and methodology are provided as appendix I.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issuance. At that time, we will send copies of this report to the Secretaries of Defense, the Navy, the Air Force, and the Army; the Commandant, U.S. Marine Corps; the Director, Defense Logistics Agency; and the Director, Office of Management and Budget. We will make copies available to other interested parties upon request. If you or your staff have any questions about the report, please contact me at (202) 512-5140.

Key contributors to this assignment were William Meredith, Harry Taylor, Hugh Brady, Douglas Mills, Janine Cantin, and Stefano Petrucci.

Sincerely yours,

Neal P. Curtin
Director, Defense Capabilities and Management

Appendix I: Scope and Methodology

We performed our review at the Office of the Secretary of Defense, service headquarters, aviation commands, and other locations as appropriate. To identify Department of Defense and service policies and practices regarding cannibalization, we interviewed Office of the Secretary of Defense and service headquarters and aviation command personnel responsible for aircraft maintenance policies and oversight, reviewed applicable regulations and other guidance concerning the practice, and analyzed statistical data regarding cannibalization rates. We held discussions concerning the pros and cons of cannibalization, its impact on readiness, the alternatives and their relative costs, and any efforts on the part of the Department of Defense to address the issue. We obtained statistics concerning cannibalizations from fiscal year 1996 through fiscal 2000, identified weapons systems most dependent on the practice to maintain readiness, and documented the reasons for dependence. We did not independently verify the number of cannibalizations, associated maintenance hours, or cannibalization rates provided by the individual services. We also visited aircraft maintenance units to discuss the use of cannibalizations and tracking processes. We discussed the impact of cannibalizations on personnel and other readiness issues, the time involved, the processes used to decide when cannibalizations should be used, and alternatives.

To determine the extent to which the services depend on cannibalizations, we requested that the services provide statistics for fiscal years 1996—2000 covering the total reported cannibalization actions, rates, and associated maintenance hours broken out by weapon system. With the exception of the Army, these data were provided by Navy and Air Force headquarters organizations; the Navy's data included Marine Corps figures. The Navy's and Marine Corps' data on cannibalizations were obtained from the Navy's Aviation Maintenance and Material Management Information System (AV-3M), and the Aircraft Inventory Readiness Reporting System (AIRRS) maintained at the Naval Air Systems Command located at the Patuxent River Naval Air Station, Maryland. The Air Force's data were obtained from the Reliability and Maintainability Information System (REMIS) and provided to us by Headquarters U.S. Air Force. Since the Army does not collect data on servicewide cannibalizations, we discussed the extent that the Army cannibalizes aircraft with officials at the Army's Aviation and Missile Command in Huntsville, Alabama; U.S. Army Forces Command, Ft. McPherson, Georgia; and the Army's 101st Airborne Division at Ft. Campbell, Kentucky. Although they provided us with some limited statistics regarding the number of cannibalizations, we did not include them in our report because the data were not comparable to those provided by the other services.

To determine the effects of and reasons for cannibalization, we discussed the issues with maintenance and supply personnel and obtained studies and documentation during visits to various military headquarters and aviation activities, including the Commander, Naval Air Forces, Atlantic, Norfolk, Virginia, and Pacific, San Diego, California; headquarters and selected squadrons of Strike Fighter Wing U.S. Atlantic and Pacific Fleets, located at Oceana Naval Air Station, Virginia Beach, Virginia, and at Lemoore Naval Air Station, California, respectively; and Commander, Electronic Attack Wing Pacific and selected squadrons at Whidbey Island Naval Air Station, Washington. For the Air Force, we held discussions with and obtained available documentation from officials at the Headquarters, Air Combat Command, 1st Tactical Fighter Wing and selected fighter squadrons at Langley Air Force Base, Hampton, Virginia; Air Mobility Command Headquarters, Scott Air Force Base, Illinois; and the 436th Airlift Wing at Dover Air Force Base, Delaware. We also held discussions with and obtained documentation from officials at the Army's Aviation and Missile Command, U.S. Army Forces Command, and Headquarters 101st Airborne Division, 101st Aviation Brigade, and the 159th Aviation Brigade at Ft. Campbell. We also discussed and obtained documentation on the effect of cannibalization on personnel with officials at Marine Corps Headquarters, II Marine Air Wing and various squadrons at Marine Corps Air Station, Cherry Point, Havelock, North Carolina, and at New River Marine Corps Air Station, Jacksonville, North Carolina.

To identify the actions that the Department of Defense and the services are taking to reduce cannibalizations, we held discussions with the responsible offices within each service and the Department of Defense, analyzed regulations and guidance, and reviewed studies and other documentation. We focused our work concerning this objective at the following headquarters locations: Department of Defense's Office of the Deputy Under Secretary of Defense for Logistics and Materiel Readiness, the Naval Air Systems Command located at the Patuxent River Naval Air Station, the Air Force Headquarters Logistics Directorate, the Air Combat and Mobility Commands, Department of the Army Headquarters, U.S. Army Forces Command, and the Army Aviation and Missile Command. In addition, we attended a Navy Conference addressing cannibalization issues. We also obtained and analyzed testimony by the Director, Fleet Readiness Division, Office of the Chief of Naval Operations, U.S. Navy; the Deputy Chief of Staff/Installations and Logistics, U.S. Air Force; and the Deputy Chief of Staff for Logistics, U.S. Army, provided at the May 22, 2001, hearing before the Subcommittee on National Security, Veterans Affairs, and International Relations, House Committee on Government Reform, on cannibalization of military aircraft parts.

Appendix II: Cannibalization Data for the Navy and Marine Corps

Table 1: Cannibalization Rate, Active Inventory, and Average Age of Navy/Marine Corps Aircraft Reporting Cannibalization Hours in Fiscal Year 2000

Type/ model/ series	Cannibalizations per 100 fly/hrs. (FY 2000)	Active inventory (Mar. 2000)	Average age in years (Mar. 2001)
F-14D	32.8	46	14
FA-18B	27.7	31	17
FA-18E	21.5	26	2
S-3B	18.2	111	25
EA-6B	16.7	123	19
E-2C	16.2	73	9
F-14A	14.3	87	21
SH-3H	13.6	17	36
MH-53E	13.5	43	11
CH-46D	12.7	26	34
TAV-8B	12.0	18	12
AH-1W	11.3	194	11
FA-18C	11.2	407	9
YSH-60F	11.0	1	0
F-14B	10.8	71	15
FA-18A	9.7	225	15
SH-60F	9.7	75	10
P-3C	9.2	244	24
AV-8B	8.2	153	8
FA-18D	8.2	142	9
CH-53E	7.5	165	13
CH-60S	7.0	3	0
UH-60A	7.0	1	16
UH-1N	6.9	103	26
HH-1N	6.5	35	28
KC-130F	6.0	35	39
CH-46E	5.7	229	33
SH-60B	5.2	158	12
UH-3H	5.2	53	37
EP-3E	5.0	11	31
CH-53D	4.9	56	31
HH-60H	4.4	39	8
UH-46D	4.4	11	35
C-2A	4.0	38	14
FA-18F	4.0	28	1
KC-130R	4.0	14	24
SH-2G	4.0	14	13
TA-4J	4.0	19	32
HH-46D	3.8	42	36

Type/ model/ series	Cannibalizations per 100 fly/hrs. (FY 2000)	Active inventory (Mar. 2000)	Average age in years (Mar. 2001)
F-5E	3.0	32	16
KC-130T	3.0	28	12
T-2C	3.0	110	29
T-38A	3.0	10	13
TH-57C	3.0	84	18
TH-6B	3.0	6	10
C-130T	2.0	20	7
T-45A	2.0	74	6
T-45C	2.0	50	2
VH-3A	2.0	2	39
C-130H	[a]	0	N/A
C-20D	[a]	2	14
C-20G	[a]	5	7
C-9B	[a]	17	25
DC-9	[a]	11	14
E-6A	[a]	4	10
E-6B	[a]	12	11
F-5F	[a]	4	21
OH-58C	[a]	4	4
P-3B	[a]	28	33
TE-2C	[a]	2	13
UP-3A	[a]	4	38
UP-3B	[a]	0	N/A
VP-3A	[a]	5	39

Legend:
N/A = not applicable

[a]Reported rate more than zero but less than one cannibalization per 100 flying hours.

Appendix III: Cannibalization Data for the Air Force

Table 2: Cannibalization Rates, Active Inventory, and Average Age of Air Force Aircraft Reporting Cannibalization Hours in Fiscal Year 2000

Aircraft model/ series	Cannibalizations per 100 sorties (FY 2000)	Active inventory (Mar. 2001)	Average age in years (Mar. 2001)
B-1B	85.4	93	14
C-5A	54.6	74	30
C-5B	42.2	50	13
B-52H	30.2	94	39
F-15E	22.8	217	10
F-15C	22.0	346	18
E-3C	17.6	9	18
E-3B	17.1	23	23
C-130J	16.7	12	1
C-141C	13.6	63	35
OA-10A	10.7	118	20
C-5C	10.5	2	31
KC-135R	10.3	356	39
F-16C	9.5	1,087	11
C-141B	9.3	61	34
KC-135T	9.3	54	41
A-10A	8.3	249	20
KC-135E	7.8	132	42
F-15A	7.0	102	23
F-15B	6.9	20	24
F-15D	6.8	54	18
C-130E	5.5	223	36
C-130H	4.4	286	14
F-16A	3.8	84	18
F-16D	3.6	182	11
C-17A	3.4	73	4
F-16B	3.0	41	19
F-117A	1.7	52	10

Appendix IV: Comments From the Department of Defense

DEPUTY UNDER SECRETARY OF DEFENSE FOR
LOGISTICS AND MATERIEL READINESS
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

OCT 31 2001

Mr. Neil P. Curtin
Director, Defense Capabilities and Management
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Curtin:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "MILITARY AIRCRAFT: Services Need Strategies to Reduce Cannibalizations," dated September 26, 2001 (GAO Code 350087).

The DoD agrees that cannibalization is a serious issue, but does not agree that cannibalization is a pervasive problem throughout the military. While a few weapon systems are showing cannibalization rates higher than desired, cannibalizations overall are declining--with fiscal year 2000 having the lowest levels in four years. Furthermore, available data indicate that cannibalization actions represent a negligible percentage of total maintenance man-hours.

The DoD strives to provide a cost-effective mix of logistics resources and processes that satisfy mission requirements and readiness objectives. In pursuing this goal, the Department recognizes that: a) judicious use of cannibalization is essential for optimizing the availability of mission-capable weapon systems and equipment; b) high levels of cannibalization are normally the result of logistics process shortfalls (i.e., problems in other areas); and c) the key to improvement is resolving those shortfalls. Accordingly, this past Summer my staff commenced an in-depth assessment of the impact of cannibalization throughout the DoD. The assessment will include identification of both the causes and effects of the cannibalization process in order to better understand the true cost of cannibalization and to recommend improvements to DoD policy to minimize the impact of cannibalization actions on materiel readiness and our workforce.

The DoD generally concurs with the intent of the GAO's recommendations. However, the Department believes the second recommendation contained in the GAO draft report is redundant with existing requirements included in previous actions by the Congress. An explanation of the DoD position on the report's recommendations is enclosed.

Sincerely,

Diane K. Morales

Enclosure:
As stated

GAO-02-86/ GAO CODE 350087

"MILITARY AIRCRAFT: SERVICES NEED STRATEGIES TO REDUCE CANNIBALIZATIONS"

DEPARTMENT OF DEFENSE COMMENTS TO THE RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Army, the Navy, and the Air Force to establish standardized, comprehensive, and reliable cannibalization data collection procedures and systems. The procedures should require accurate documentation of the number of cannibalizations, the associated maintenance hours, and the specific reasons for the cannibalizations. They should also require the Services to identify any adverse effects of cannibalizations on maintenance costs and personnel. (P.26/Draft Report).

DoD RESPONSE: Concur with intent. Consistent, complete, and accurate reporting by the Services of all types of maintenance actions, not just cannibalizations, is essential to effective management oversight of logistics support processes. The Deputy Under Secretary of Defense for Logistics and Materiel Readiness (DUSD (L&MR)) is conducting an assessment of the cannibalization processes, including data collection and reporting procedures, employed by each of the Services. The results of this assessment will form the basis for specific recommendations to standardize, where warranted, the documentation of cannibalization actions, and otherwise improve our ability to assess the effectiveness of logistical support processes.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense require the Services to measure and report [to the Congress] the number of maintenance hours associated with cannibalizations. (P.26/Draft Report).

DoD RESPONSE: Concur with the intent, though previous legislation required this already. The National Defense Authorization Act for Fiscal Year 2001 requires DoD to include information on the extent to which each of the Services uses cannibalizations in the reporting required by 10 USC 117. The DoD commenced reporting under this requirement with the Quarterly Readiness Report to the Congress (QRRC) for the quarter ending June 30, 2001. DUSD (L&MR) is reviewing the Service's submissions to ensure the necessary information is collected and provided as required.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense direct the Services to develop strategies to reduce the number of maintenance hours spent on cannibalization, ensure that cannibalized aircraft do not remain grounded for long periods of time, and reduce the adverse effects of cannibalizations on maintenance costs and personnel. At a minimum, the strategies should include criteria to determine which cannibalizations are appropriate, cannibalization reduction goals, and actions to be taken to meet those goals. The Services must assign responsibility for ensuring that goals are being met and allocate resources for this purpose. (P.26/Draft Report).

DoD RESPONSE: Concur with intent. Policies and strategies aimed at most efficiently utilizing all logistics resources while meeting mission requirements and readiness objectives are essential elements of a strong national defense. The DUSD (L&MR) is conducting an assessment of the Services' cannibalization processes, including strategies for reducing unacceptably high cannibalization rates. This assessment will provide a basis for potential modifications to logistics resource management policies and/or strategies.

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