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Report to the Subcommittee on  
Readiness and Management Support,  
Committee on Armed Services,  
U.S. Senate

July 2011

# AIR FORCE WORKING CAPITAL FUND

## Budgeting and Management of Carryover Work and Funding Could Be Improved

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Highlights of [GAO-11-539](#), a report to the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

## Why GAO Did This Study

Three Air Force depots support combat readiness by providing repair services to keep Air Force units operating worldwide. To the extent that the depots do not complete work at year end, the work and related funding will be carried into the next fiscal year. Carryover is the reported dollar value of work that has been ordered and funded by customers but not completed at the end of the fiscal year. GAO was asked to determine the extent to which: (1) budget information on depot maintenance carryover approximated actual results from fiscal years 2006 through 2010 and, if not, any needed actions to improve budgeting for carryover; (2) depot maintenance carryover exceeded the allowable amount and any adjustments were made to the allowable amount; and (3) there was growth in carryover at the depots and the reasons for the growth. To address these objectives, GAO (1) reviewed relevant carryover guidance, (2) obtained and analyzed reported carryover and related data at the Air Logistics Centers (ALC), and (3) interviewed DOD and Air Force officials.

## What GAO Recommends

GAO makes five recommendations to DOD to improve the budgeting and management of carryover, such as comparing budgeted to actual information on carryover and clarifying DOD guidance on allowable carryover funded with multiyear appropriations. DOD concurred with GAO's recommendations and has actions planned or under way to implement them.

View [GAO-11-539](#) or key components. For more information, contact Asif A. Khan at (202) 512-9095 or [khana@gao.gov](mailto:khana@gao.gov).

July 2011

# AIR FORCE WORKING CAPITAL FUND

## Budgeting and Management of Carryover Work and Funding Could Be Improved

### What GAO Found

The Air Force consistently underestimated the dollar amount of carryover that would exceed the allowable amount in the Air Force Working Capital Fund (AFWCF) budgets from fiscal years 2006 through 2010. In 3 of the 5 years, the budgeted carryover amount underestimated the actual amount by over \$250 million. The budget information on carryover is critical since decision makers use this information when reviewing the AFWCF budgets. The Air Force began implementing actions to improve budgeting for AFWCF such as including overseas contingency operations funded orders in the AFWCF fiscal year 2012 budget. These actions have the potential to improve the accuracy of budgeting for AFWCF, but their success will only be known when budgeted carryover information is compared to actual results.

GAO analysis of AFWCF reports showed that in each year actual carryover exceeded the allowable amount from fiscal years 2006 through 2010. The allowable amount of carryover is based on the amount of new orders received and the outlay rate of customers' appropriations financing the work. The amount of carryover that exceeded the allowable ranged from \$4 million to \$568 million. Further, the Air Force increased the allowable amount for orders funded with multiyear appropriations by \$115 million and \$125 million in fiscal years 2009 and 2010, respectively. Without this adjustment, the AFWCF would have exceeded the allowable carryover by corresponding amounts. The DOD regulation on orders funded with multiyear appropriations only pertains to Army ordnance activities that perform a manufacturing function. Therefore, the provision on increasing the allowable amount of carryover for orders funded with multiyear appropriations does not apply to the Air Force.

GAO analysis of ALC reports and discussions with Air Force officials identified four reasons for the increase in carryover from \$1 billion at the end of fiscal year 2006 to \$1.9 billion—nearly 7 months of work—at the end of fiscal year 2010 on depot maintenance work. First, Air Force underestimated its forecasted workload requirements on the number of hours of work to be performed. Second, because the Air Force believed its depot maintenance workload would decrease, it reduced its workforce in November 2007. While the ALCs reduced their workforce by about 2,000 civilian personnel, the actual workload increased instead of decreased—thus resulting in personnel shortages. Third, the Air Force budget underestimated the amount of funds on new orders received from customers, and the work performed by the ALCs did not keep pace with the increase in funding on new orders from year to year. Fourth, the ALCs could not obtain parts when needed to perform repair work that contributed to the growth of carryover. Air Force data showed that the average monthly outstanding backorders for spare parts at the ALCs grew by about 44 percent from fiscal year 2008 to fiscal year 2010. The Air Force is taking action to address these problems but still needs to compare budgeted to actual information, such as the number of hours of work to be performed, and identify the reasons for the differences.

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G A O

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United States Government Accountability Office  
Washington, DC 20548

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July 7, 2011

The Honorable Claire McCaskill  
Chairman  
The Honorable Kelly Ayotte  
Ranking Member  
Subcommittee on Readiness and Management Support  
Committee on Armed Services  
United States Senate

Three Air Force depots support combat readiness by providing services necessary to keep Air Force units operating worldwide.<sup>1</sup> The depots repair and overhaul a wide range of assets, including fighter aircraft such as the F-16, intercontinental ballistic missiles such as the Minuteman and Peacekeeper missiles, jet aircraft engines, electronics, avionics, software, and inventory items for the military services, other government agencies, and foreign governments. In fiscal year 2010, the Air Force reported that in-house work performed at the three depots or Air Logistics Centers (ALC) included major modifications on 698 aircraft, the overhaul of 320 aircraft engines, and repairs of 330,000 inventory items.

The three Air Force depots operate under the working capital fund concept, where customers are to be charged for the anticipated full cost of goods and services. To the extent that the depots do not complete work at year-end, the work and related funding will be carried into the next fiscal year. Carryover is the reported dollar value of work that has been ordered and funded (obligated) by customers but not completed by working capital fund activities at the end of the fiscal year. The congressional defense committees recognize that some carryover is needed to ensure a smooth flow of work during the transition from one fiscal year to the next. However, past congressional defense committee reports have raised concerns that the level of carryover may be more than is needed. Excessive amounts of carryover financed with customer appropriations are subject to reductions by DOD and the congressional defense committees during the budget review process. Congress reduced the Air

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<sup>1</sup> The three depots are the Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma; the Ogden Air Logistics Center, Hill Air Force Base, Utah; and the Warner Robins Air Logistics Center, Robins Air Force Base, Georgia.

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Force's fiscal year 2010 operation and maintenance appropriation by \$85 million because of concerns about excess carryover.

The Air Force made changes to the calculation of carryover that reduced both the carryover and the allowable amount of carryover starting in fiscal year 2009. These changes included the (1) removal of contract depot maintenance from the Air Force Working Capital Fund (AFWCF) at the end of fiscal year 2008 and (2) consolidation of the AFWCF depot maintenance activity group with the material support division of the supply management activity group at the end of fiscal year 2008, which eliminated internal transactions between supply and maintenance. As a result, starting in fiscal year 2009 the only transactions affecting the AFWCF carryover are orders received from customers that are not part of the AFWCF, called external customers, to perform depot maintenance work such as overhauling an aircraft.

In response to your request, we determined the extent to which: (1) budget information on Air Force depot maintenance carryover for fiscal years 2006 through 2010 approximated actual results and, if not, any needed actions the Air Force is taking to improve budgeting for carryover; (2) the Air Force depot maintenance actual carryover exceeded the allowable amount of carryover from fiscal years 2006 through 2010 and any adjustments were made to the allowable amount; and (3) there was growth in carryover at the Air Force depot maintenance in-house activities on orders received from customers that were external to AFWCF and the reasons for the growth.

Financial information in this report was obtained from official Air Force budget documents and accounting reports. To assess the reliability of the data, we (1) reviewed and analyzed the factors used in calculating carryover, (2) interviewed Air Force officials knowledgeable about the carryover data, (3) reviewed GAO reports on Air Force depot maintenance activities, and (4) reviewed orders customers submitted to the depots to determine whether they were adequately supported by documentation. On the basis of procedures performed, we have concluded that these data were sufficiently reliable for the purposes of this report. Further details on our scope and methodology are provided in appendix I.

We conducted this performance audit from July 2010 through July 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence

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obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We requested comments on a draft of this report from the Secretary of Defense or his designee. Written comments from the Office of the Under Secretary of Defense (OUSD) (Comptroller) are reprinted in appendix III.

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## Background

AFWCF relies on sales revenue rather than regular appropriations to finance its continuing operations. AFWCF is intended to (1) generate sufficient resources to cover the full costs of its operations and (2) operate on a break-even basis over time—that is, neither make a gain nor incur a loss. Customers use appropriated funds, primarily operations and maintenance appropriations, to finance orders placed with AFWCF. AFWCF includes a maintenance division that provides the Air Force with the in-house industrial capability to repair and overhaul a wide range of weapon systems and military equipment. The Air Force maintains three ALCs which are designed to retain, at a minimum, a ready, controlled source of technical competence and resources to meet military requirements. Table 1 describes the locations and principal work for each ALC.

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**Table 1: Air Logistics Centers' Locations and Principal Work**

<b>Air Logistics Centers' location</b>	<b>Principal work: aircraft and major commodities</b>
Ogden Air Logistics Center, Hill Air Force Base, Utah	A-10, C-130, and F-16 aircraft, landing gears, hydraulics, missiles, and software
Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma	KC-135, B-1, B-52, and E-3 aircraft, engines, software, and instruments
Warner Robins Air Logistics Center, Robins Air Force Base, Georgia	F-15, C-5, C-130, and C-17 aircraft, avionics, electronic warfare, software

Source: Air Force.

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## Carryover and Its Use

Carryover is the reported dollar value of work that has been ordered and funded (obligated) by customers but not completed by working capital fund activities at the end of the fiscal year. Carryover consists of both the unfinished portion of work started but not completed, as well as work that has not yet begun. Some carryover is necessary at the end of the fiscal year if working capital funds are to operate efficiently and effectively. For example, if customers do not receive new appropriations at the beginning of the fiscal year, carryover is necessary to ensure that working capital fund activities have enough work to ensure a smooth transition between fiscal years. Too little carryover could result in some personnel not having

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work to perform at the beginning of the fiscal year. On the other hand, too much carryover could result in an activity group receiving funds from customers in one fiscal year but not performing the work until well into the next fiscal year. By minimizing the amount of carryover, DOD can use its resources in the most effective manner and minimize the backlog of work and “banking” of related funding for work and programs to be performed in subsequent years.

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## DOD’s Carryover Policy

DOD’s carryover policy is included in DOD Financial Management Regulation 7000.14-R, volume 2B, chapter 9. Under the policy, the allowable amount of carryover is based on the amount of new orders received in a given year and the outlay rate of the customers’ appropriations financing the work.<sup>2</sup> For example, the Air Force depots received about \$1.4 billion in new orders funded with operation and maintenance, Air Force appropriation—one of many appropriations funding orders received in fiscal year 2010. The DOD outlay rate for this appropriation was 66 percent. Therefore, the amount of funds the AFWCF was allowed to carry over into fiscal year 2011 was \$476 million (\$1.4 billion multiplied by 34 percent, which represents 1 minus the outlay rate for the underlying appropriation). The DOD carryover policy provides that the work on these fiscal year 2010 orders is expected to be completed by the end of fiscal year 2011, and therefore, carryover is only allowed for the first year. According to the DOD regulation, this carryover metric allows for an analytical-based approach that holds working capital fund activities to the same standard as general fund execution and allows for meaningful budget execution analysis.

In accordance with the DOD Financial Management Regulation,<sup>3</sup> (1) nonfederal orders, (2) non-DOD orders, (3) foreign military sales, (4) work related to base realignment and closure, and (5) work-in-progress are excluded from the carryover calculation. The reported actual carryover (net of exclusions) is then compared to the amount of allowable carryover using the above-described outlay-rate method to determine whether the actual amount is over or under the allowable carryover amount.

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<sup>2</sup> The outlay rate for appropriations is contained in the DOD Financial Summary Tables, which are published each year. The outlay rate figures may vary from year to year.

<sup>3</sup> See DOD Financial Management Regulation 7000.14-R, vol. 2B, ch. 9, p. 9-43, for orders excluded from carryover calculation.

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## Changes to the AFWCF That Affected the Fiscal Years 2009 and 2010 Calculation of Carryover and the Allowable Amount of Carryover

### Removal of Contract Depot Maintenance from AFWCF

The Air Force made changes to the calculation of carryover that reduced both the carryover and the allowable amount of carryover. These changes included the (1) removal of contract depot maintenance from AFWCF and (2) consolidation of the AFWCF depot maintenance activity group with the material support division of the supply management activity group, which eliminated internal transactions between supply and maintenance.

As stated previously, the AFWCF depot maintenance activity group supports combat readiness by providing depot repair services necessary to keep Air Force units operating worldwide. The activity group either performed the work in-house at its three ALCs or through contracts with private industry (referred to as contract depot maintenance). Under the contract depot maintenance process, the activity group accepted customer orders that obligated their funds. The customers used the activity group as their purchasing agent when they needed a contractor to perform depot-level maintenance work. The activity group awarded the contracts and managed the work performed by the contractors.

Beginning in fiscal year 2003, the Air Force began transitioning contract depot maintenance out of AFWCF. According to the fiscal year 2010 AFWCF budget, the removal of contract depot maintenance from AFWCF brings the user and provider of contract depot maintenance services closer together and removes the working capital fund from its current role as the “middleman.” The action allows depot managers to dedicate time and effort to in-house production. AFWCF stopped accepting new contract depot maintenance orders at the end of fiscal year 2008 and at the time of our review, expected to (1) complete work on fiscal year 2008 and prior years’ contract depot maintenance orders and (2) close out all related accounting records by the end of fiscal year 2011. As a result of the change, AFWCF no longer included contract depot maintenance orders in its calculation of the allowable carryover amounts starting in fiscal year 2009.

### Consolidation of Depot Maintenance Activity Group and the Material Support Division of the Supply Maintenance Activity Group

In fiscal year 2009, AFWCF consolidated the depot maintenance activity group with the material support division of the supply management activity group to form a new activity group—Consolidated Sustainment Activity Group—to manage depot-level repairable and consumable spares unique to the Air Force as well as maintenance services. According to the fiscal year 2010 AFWCF budget and Air Force officials, this consolidation eliminated the recording of internal transactions such as orders, revenue, and carryover amounts between depot maintenance and supply within the AFWCF. The elimination of the recording of orders reduced the amount of carryover as well as the allowable amount of carryover since the orders

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were not included in the dollar amount of work performed. The fiscal year 2011 AFWCF budget indicates that the internal AFWCF transactions were eliminated beginning in fiscal year 2009. As a result, starting in fiscal year 2009, the only transactions affecting AFWCF carryover are orders received from customers that are not part of the AFWCF, called external customers, to perform depot maintenance work.

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## Air Force Underestimated Carryover in Its Budgets

In its budget information, the Air Force consistently underestimated the amount of carryover that would exceed the allowable amount from fiscal year 2006 through fiscal year 2010. In 3 of the 5 years, the actual amount of carryover exceeded the budgeted amount by over \$250 million. In fiscal year 2010, Air Force headquarters and Air Force Materiel Command (AFMC) began implementing actions to improve the accuracy of budgeting for AFWCF carryover such as incorporating overseas contingency operations (OCO)<sup>4</sup> funded orders in the fiscal year 2012 AFWCF budget. These actions have the potential to improve the accuracy of budgeting for AFWCF carryover, but their success can be determined only when budgeted carryover information is compared to actual results.

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## Air Force Budgets Consistently Underestimated Carryover Amounts from Fiscal Years 2006 through 2010

From fiscal year 2006 through fiscal year 2010, the AFWCF budget consistently underestimated the amount of carryover that would exceed the allowable amount. Reliable budget information on carryover is critical since decision makers use this information when reviewing the AFWCF budgets. For example, as shown in table 2 below, the fiscal year 2010 AFWCF budget showed that the carryover would exceed the allowable amount by \$85 million for fiscal year 2010. Congressional defense committees, relying on this information, reduced the AFWCF fiscal year 2010 customers' budgets by \$85 million. Table 2 shows the amount of budgeted and actual AFWCF carryover that was over or under the allowable amount and the actual amount exceeding the budgeted amount for fiscal years 2006 through 2010.

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<sup>4</sup> In 2009, we reported that starting with the fiscal year 2009 supplemental request in April 2009, the administration now refers to funds for the operations in Iraq and Afghanistan as Overseas Contingency Operations funds. GAO, *Overseas Contingency Operations: Reported Obligations for the Department of Defense*, [GAO-09-791R](#) (Washington, D.C.: July 10, 2009).

**Table 2: Amount of Budgeted and Actual AFWCF Carryover that was Over or Under the Allowable Amount**

Dollars in millions

	Fiscal year 2006	Fiscal year 2007	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Budgeted over (under) allowable amount	(\$262) <sup>a</sup>	(\$392)	\$21	(\$5)	\$85
Actual over (under) allowable amount	\$4	\$102	\$90	\$568	\$101
Difference between budgeted and actual	\$266	\$494	\$69	\$573	\$16

Source: GAO analysis of AFWCF budgets.

Note: The Air Force increased the allowable amount of carryover by \$115 million and \$125 million in fiscal years 2009 and 2010, respectively, for orders funded with multiyear appropriations. Without this action, the actual carryover would have exceeded the allowable amount by corresponding amounts.

<sup>a</sup>The fiscal year 2006 AFWCF budget reported the months of carryover based on a 3-month standard (old method) instead of the carryover amount over or under the allowable amount based on the current DOD outlay rate methodology. For comparability purposes, we used the fiscal year 2006 revised amount contained in the fiscal year 2007 AFWCF budget.

We analyzed the carryover information for 3 years—fiscal years 2006, 2007, and 2009—to determine contributing factors for the differences between budgeted and actual amounts because in these years the budgeted amounts underestimated the actual amounts by the largest amounts. According to Air Force headquarters officials, several factors influenced the differences between budgeted and actual amounts including (1) changes in the outlay rates used to compute the allowable amount of carryover, (2) changes in customer orders, (3) issues affecting production of work performed on external orders such as personnel and parts shortages, and (4) removal of contract depot maintenance from AFWCF. Specific examples of these factors are discussed below.

- Since the actual outlay rates were higher than the outlay rates used for budgeting for certain appropriations funding orders received by AFWCF, the actual allowable carryover amount was less than the budgeted amount. For example, our analysis of Air Force data determined that the outlay rate used to compute the allowable amount of carryover from customers that were internal to AFWCF changed from 61 percent to 75 percent for fiscal year 2006 between budget and execution. Because the rate increased by 14 percentage points, the allowable amount of carryover was less than the planned amount for fiscal year 2006.
- The budgets underestimated the amount of new orders that would be received from customers external to AFWCF for fiscal years 2006, 2007, and 2009. For example, the actual new orders exceeded budgeted new

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orders by \$242 million in fiscal year 2009 due to the Air Force not including OCO-funded orders in the AFWCF budget. This contributed to carryover being higher than planned in fiscal year 2009.

- For fiscal year 2009, the AFWCF encountered several problems that affected production (work performed) and contributed to carryover being higher than planned. Specifically, the Air Force forecasted a declining workload for the ALCs in fiscal year 2009. As a result, the Air Force directed AFMC to reduce its workforce at the ALCs. However, workload increased instead of decreased in fiscal year 2009. Furthermore, work in several areas such as engines, was delayed because the depots could not obtain the spare parts when needed to perform the work. As a result, the ALCs generated less revenue than customer orders received, thus increasing the carryover amount in fiscal year 2009. These issues are discussed in more detail later in the report.
- The Air Force's action to remove contract depot maintenance from the AFWCF was delayed by one year after the Air Force developed the fiscal year 2007 AFWCF budget. Because the contract work was not removed in fiscal year 2007 as budgeted, the budgeted fiscal year 2007 carryover information presented in the fiscal year 2007 budget was understated compared to the actual amounts as reported in the fiscal year 2009 budget.

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### Actions Under Way to Improve Budgeting for AFWCF Carryover

In fiscal year 2010, Air Force headquarters and AFMC began implementing actions to improve the accuracy of budgeting for AFWCF carryover. These actions are, in part, in response to a fiscal year 2009 carryover balance that exceeded its plan by about \$573 million and an \$85 million reduction in the AFWCF fiscal year 2010 budget by the congressional defense committees due to projected excess carryover. First, the Air Force began including OCO-funded orders in the fiscal year 2012 AFWCF budget. Second, in the summer of 2010, the Air Force requested and received from OUSD (Comptroller) an exemption that allowed AFWCF to use an alternative outlay rate for software maintenance workloads when calculating the allowable amount of carryover (discussed in the next section of the report). The Air Force requested the alternative outlay rate for software workload because the work is fully funded upfront but requires years to complete and, in many cases, requires the procurement of hardware from vendors. The Air Force stated that the alternative outlay rate is expected to reduce future variances between budgeted and actual allowable carryover. Third, AFMC is taking several steps aimed at improving workload and budget forecasts. Specifically, in December 2010, the Air Force developed a process which improves the coordination among organizations (systems program office, maintenance wings, and supply personnel) that affect the performance of depot maintenance work. As workload requirements change, this initiative includes an approval process

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to adjust future budgets and workload estimates. The Air Force anticipates that these changes will improve on-time aircraft and missile performance and reduce variances between budgeted and actual carryover. The success of these actions can be determined only when future AFWCF budgets are analyzed and compared to actual results.

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## **AFWCF Actual Carryover Consistently Exceeded the Allowable Carryover**

Our analysis of AFWCF reports showed that in each year from fiscal year 2006 through fiscal year 2010 actual carryover exceeded the allowable carryover amounts. During the 5-year period, the amount of carryover that exceeded allowable amounts ranged from \$4 million to \$568 million. The Air Force began increasing the allowable amount of carryover (1) for orders funding software work in fiscal year 2010 and (2) for orders funded with multiyear appropriations in fiscal years 2009 and 2010. Concerning the software work, the Air Force requested the exemption because large software upgrades require full funding upfront and years to complete. In many instances, software development is predicated on procuring hardware that can take many months to obtain. The Air Force requested in writing and received approval in writing from OUSD (Comptroller) an exemption to increase the allowable amount of carryover for software work. Concerning the use of orders funded with multiyear appropriations, the Air Force based this decision on a revision to the carryover-allowance methodology in the DOD Financial Management Regulation.<sup>5</sup> However, the section in this regulation cited by the Air Force pertains only to Army ordnance working capital fund activities which perform a manufacturing function. Furthermore, the Air Force did not request in writing or receive approval in writing from OUSD (Comptroller) an exemption for increasing the allowable amount of carryover for orders funded with multiyear appropriations. Therefore, the Air Force decision to increase the allowable amount of carryover for orders funded with multiyear appropriations was not in accordance with the DOD Financial Management Regulation.

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## **Actual Carryover Consistently Exceeded Allowable Amounts from Fiscal Year 2006 through Fiscal Year 2010**

Our analysis of the budgets and supporting data showed that AFWCF carryover exceeded its allowable carryover each year for a 5-year period from fiscal year 2006 through fiscal year 2010. The amount of carryover exceeding the allowable amount ranged from \$4 million in fiscal year 2006 to \$568 million in fiscal year 2009. Table 3 shows AFWCF actual carryover,

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<sup>5</sup> See DOD Financial Management Regulation 7000.14-R, vol. 2B, ch. 9, p. 9-43.

allowable carryover, and the amount over allowable carryover for fiscal years 2006 through 2010.

**Table 3: AFWCF Actual Carryover, Allowable Carryover, and the Amount Over Allowable Carryover for Fiscal Years 2006 through 2010**

Dollars in millions

	Fiscal year 2006	Fiscal year 2007	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Actual carryover	\$1,824	\$1,830	\$1,625	\$1,846	\$1,877
Allowable carryover	1,819	1,728	1,534	1,278	1,775
Amount over allowable carryover	\$4	\$102	\$90	\$568	\$101

Source: GAO analysis of AFWCF data.

Notes: Totals may not add due to rounding.

For fiscal years 2006 through 2008, carryover information in the AFWCF budgets included external depot maintenance, internal depot maintenance, and contract depot maintenance work. The fiscal years 2009 and 2010 carryover information only includes external depot maintenance work.

In accordance with the DOD Financial Management Regulation, (1) nonfederal orders, (2) non-DOD orders, (3) foreign military sales, (4) work related to base realignment and closure orders, and (5) work-in-progress were excluded from the actual carryover and allowable carryover figures.

Since the actual carryover exceeded the allowable by \$568 million at the end of fiscal year 2009, Air Force headquarters and AFMC held weekly meetings, beginning in January 2010 to discuss the reduction of carryover. Topics discussed at these meetings included: (1) identifying work that was driving the carryover, (2) hiring additional personnel to perform work that would reduce carryover, (3) identifying problems with the performance of work due to the shortage of parts, and (4) reviewing workloads that had unusual problems. Also, the carryover information was provided bimonthly to the Under Secretary of the Air Force since the carryover data has budget and operational implications.

After the carryover exceeded the allowable amount by \$568 million at the end of fiscal year 2009, AFMC and the ALCs took a more proactive approach in the budgeting and management of carryover. The ALCs are (1) reviewing and validating the amount of carryover on existing customer orders and (2) reviewing customer orders prior to acceptance to ensure that all project orders contain a specific description of the work and deliverables, and period of performance. Based on their reviews of prior years' customer orders, the ALCs either deobligated or completed work on \$72 million of orders between May and September 2010 which reduced carryover by that amount.

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## Exemptions Increased Allowable Carryover Amounts for Fiscal Years 2009 and 2010

For fiscal years 2009 and 2010, the Air Force took \$115 million and \$229 million, respectively, in additional exemptions that increased the allowable carryover amounts that were not taken in previous years. These exemptions were for (1) orders involving the development of software for weapon systems and test equipment (\$104 million in fiscal year 2010) and (2) prior-year orders financed with multiple year funds such as procurement and research, development, test, and evaluation appropriations (\$115 million in fiscal year 2009 and \$125 million in fiscal year 2010).

Concerning the orders for software, the Air Force requested the exemption, in writing, from OUSD (Comptroller) on June 23, 2010, and OUSD (Comptroller) approved the exemption, in writing, on July 12, 2010. The Air Force requested that it use alternative outlay rates for calculating the allowable carryover for software projects based on attributes of the work and historical information. The Air Force requested the exemption because large software upgrades to (1) weapon systems or (2) equipment to test weapon systems or parts, such as avionics parts, requires full funding upfront but requires years to complete. In many instances, software development is predicated on procuring hardware that can take many months to obtain. Furthermore, software work requires time needed to identify, code, test, flight test, and document the work performed. This work could take up to 4 to 5 years to complete. Since the software work is predicated on the Air Force obtaining equipment from vendors, we believe the Air Force's use of alternative outlay rates based on historical information for software projects is reasonable.

Concerning the prior-year orders financed with multiyear funds, Air Force headquarters officials informed us that they consulted with the OUSD (Comptroller) officials to discuss a revision to the carryover-allowance methodology in the DOD Financial Management Regulation.<sup>6</sup> Based on verbal discussions with the OUSD (Comptroller) officials, Air Force officials concluded that the DOD Financial Management Regulation authorized the use of second-year outlay rates for orders funded with multiyear appropriations, such as procurement and research, development, test, and evaluation appropriations. The Air Force first applied this exemption in its fiscal year 2011 budget which increased the calculation of allowable carryover for fiscal year 2009 and therefore, decreased the amount of actual carryover that was over the allowable

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<sup>6</sup> See DOD Financial Management Regulation 7000.14-R, vol. 2B, ch. 9, sec. 090204.

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amount for fiscal year 2009. The Air Force applied this exemption again in its fiscal year 2012 AFWCF budget which increased the allowable amount of carryover by \$125 million, \$74 million, and \$90 million for fiscal years 2010, 2011, and 2012, respectively. We requested the Air Force written request for this exemption and the OUSD (Comptroller) written approval. The Air Force and OUSD (Comptroller) could not provide us any documentation. The DOD Financial Management Regulation requires the Air Force to request approval for the exemption in writing from the Director for Revolving Funds, OUSD (Comptroller). Furthermore, the Air Force's exemption for multiyear appropriations was based on a provision added to the DOD Financial Management Regulation on Army ordnance activities which perform a manufacturing function. This provision in the regulation does not pertain to the Air Force. Therefore, the Air Force decision to increase the allowable amount of carryover for orders funded with multiyear appropriations was not in accordance with the DOD Financial Management Regulation.

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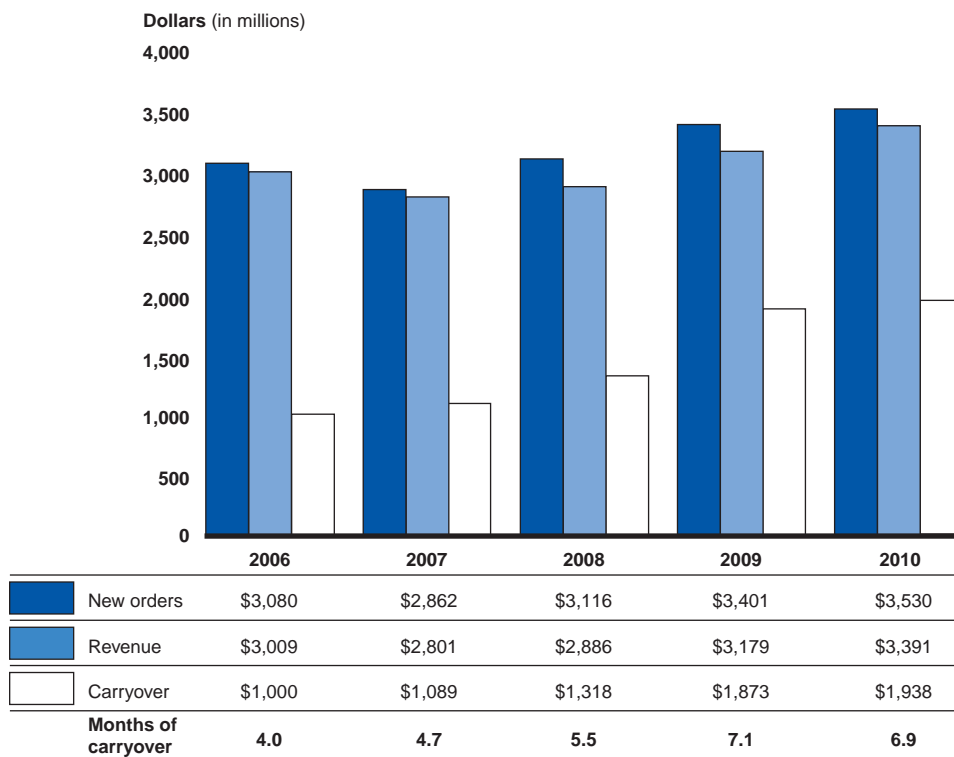
## Carryover Increased at ALCs from Fiscal Years 2006 through 2010 on Orders Received from External Customers

Carryover related to external depot maintenance work increased from \$1 billion at the end of fiscal year 2006 to \$1.9 billion at the end of fiscal year 2010. Our analysis of ALC depot maintenance reports and discussions with Air Force officials identified four primary reasons for this increase. First, Air Force underestimated its forecasted workload requirements on the number of hours of depot maintenance work to be performed on repairing assets, such as aircraft. Second, because the Air Force believed its depot maintenance workload would decrease, the Air Force directed AFMC to reduce its workforce in November 2007. While the ALCs reduced their workforce by about 2,000 civilian personnel, the actual workload and related funding increased instead of decreased—thus resulting in personnel shortages. Third, during the 5-year period, the Air Force budget underestimated the amount of funds on new orders that would be received from customers and the work performed by the ALCs did not keep pace with the increase in funds received on new orders from year to year. Fourth, the ALCs could not obtain parts when needed to perform repair work that contributed to the growth of carryover. The Air Force is or has taken action to address these problems such as hiring personnel to perform depot maintenance work and including OCO-funded orders in the fiscal year 2012 AFWCF budget.

## Carryover Significantly Increased from Fiscal Year 2006 through Fiscal Year 2010 on Orders Received from External Customers

From fiscal years 2006 through 2010, the ALCs in-house carryover increased from \$1 billion to \$1.9 billion on orders received from customers external to AFWCF. The carryover increased because the dollar amount of new orders exceeded the dollar amount of work performed (revenue) for every year from fiscal year 2006 through fiscal year 2010. As a result, carryover increased from 4 months of work at September 30, 2006, to 6.9 months of work at September 30, 2010. The carryover reached a high point of 7.1 months of work for fiscal year 2009. Figure 1 shows the ALCs' new orders, revenue, and carryover for fiscal years 2006 through 2010 on orders received from customers external to AFWCF.

**Figure 1: ALCs New Orders, Revenue, and Carryover on Orders Received from External Customers for Fiscal Years 2006 through 2010**



Source: GAO analysis of Air Force data.

Notes: The carryover figures reflect the total amount of work to be performed at fiscal year end.

The figure presents AFWCF's new orders, revenue, and carryover information for work performed by ALCs on orders received from customers who were external to AFWCF.

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In order for the ALCs to operate efficiently and effectively and to accomplish depot maintenance work within planned time frames that minimizes carryover, the Air Force needs to plan for several key elements. First, the Air Force needs to accurately forecast workload requirements on the number of hours of depot maintenance work to be performed repairing assets such as aircraft, engines, and missiles. Second, the ALCs need appropriate levels of facilities and support equipment available to support the forecasted workload. Third, the assets, such as aircraft, needing repair must be available at the ALC as planned, to ensure that work can begin on the assets as scheduled. Fourth, the ALCs need to have the right number of personnel with the right skill mix to perform the work. Fifth, the DOD supply system must maintain the right mix and sufficient quantities of spare parts to satisfy the projected workload. Finally, Air Force depot maintenance customers need to properly fund the work, as budgeted, to be performed. For the process to work correctly and seamlessly, these elements must occur and be properly synchronized. If the carryover becomes too high or low, this is an indication that one or more of the six elements may not be working properly.

Of the six elements above, we determined the ALCs encountered problems that contributed to carryover for four of these elements including: (1) forecasting workload requirements on the number of hours of depot maintenance work to be performed, (2) determining the right number of civilian personnel to perform the depot maintenance work, (3) budgeting for new orders, and (4) obtaining parts to perform the work. Specific examples of problems experienced by ALCs contributing to carryover are provided in appendix II.

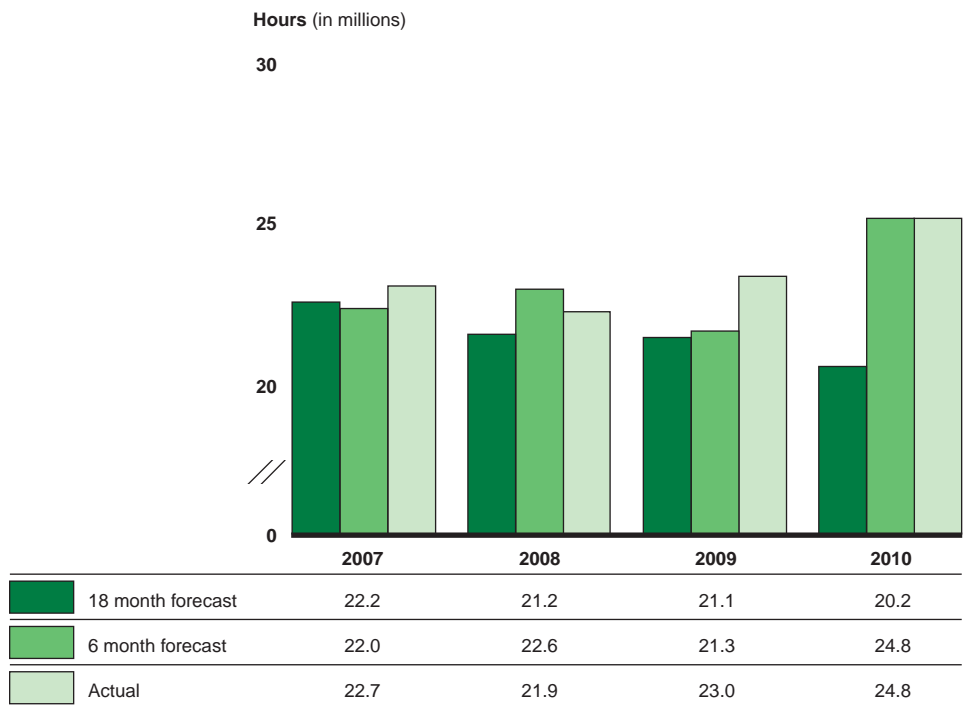
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### **Air Force Underestimated its Forecasted Workload Requirements on the Number of Hours of Work to be Performed**

Accurately forecasting workload requirements is essential for ensuring that needed facilities and support equipment, personnel, and spare parts are available to support the planned workload to keep the ALCs operating efficiently. However, the Air Force underestimated its forecasted workload requirements on the number of hours of depot maintenance work to be performed from fiscal year 2007 through fiscal year 2010, especially in fiscal year 2009. According to the Air Force's Workload Review Guidance and AFMC officials, AFMC and ALCs evaluate their future planned workload and develop workload forecasts by converting anticipated customer funding into the number of hours required to perform the work. The Air Force develops two forecasts for a specific fiscal year. One forecast is 18 months before a fiscal year and another forecast is 6 months before the fiscal year. Figure 2 shows the Air Force's

18- and 6-month forecast and actual depot maintenance workload requirements for fiscal years 2007 through 2010.

**Figure 2: Air Force’s 18- and 6-Month Forecast and Actual Workload Requirements on the Number of Hours of Work to be performed for Fiscal Years 2007 through 2010**



Source: GAO analysis of Air Force data.

As shown in figure 2, the Air Force anticipated in its 18-month forecast that its workload requirements would steadily decrease from 22.2 million hours in fiscal year 2007 to 20.2 million hours in fiscal year 2010—a reduction of 2 million hours. The reduction in workload requirements was included in a November 2007 Air Force memorandum.<sup>7</sup> In that memorandum, the Air Force provided two reasons for the anticipated workload decrease: (1) the ALCs were more efficient due to the implementation of transformation efforts focused on improving operational performance and reducing weapon system sustainment costs

<sup>7</sup> Department of Air Force Office of the Assistant Secretary Memorandum, *Depot Maintenance Activity Group Manpower*, (Washington, D.C.: Nov. 21, 2007).

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that began in fiscal year 2003, and (2) approved retirements of aircraft such as the KC-135 platforms would reduce depot maintenance workload at the ALCs. In addition, Air Force headquarters officials informed us that at the beginning of fiscal year 2008, the Air Force had not seen an increase in depot maintenance work as a result of OCO. As a result, the Air Force directed AFMC to reduce its total workforce to support the forecasted workload. (Workforce reductions are discussed in the next section.)

The Air Force anticipated a decrease in workload requirements in its 18-month forecast, but the actual workload requirements increased by 2.1 million hours from fiscal year 2007 to fiscal year 2010. Over the same 4-year period, carryover increased from \$1.1 billion in fiscal year 2007 to \$1.9 billion in fiscal year 2010. About 65 percent of the increase occurred in fiscal year 2009 (see fig. 1). Specifically, the fiscal year 2009 actual workload requirements exceeded the 18- and 6-month forecasts by 1.9 million and 1.7 million hours, respectively, due to (1) additional depot maintenance work on aircraft that were not retired as planned and (2) the 2009 actual inductions for aircraft and engines exceeding forecasted inductions. For example, the Air Force forecasted that it would induct 596 aircraft for depot maintenance work at the ALCs in fiscal year 2009, but 691 aircraft were actually inducted—an increase of 95 aircraft or 16 percent.

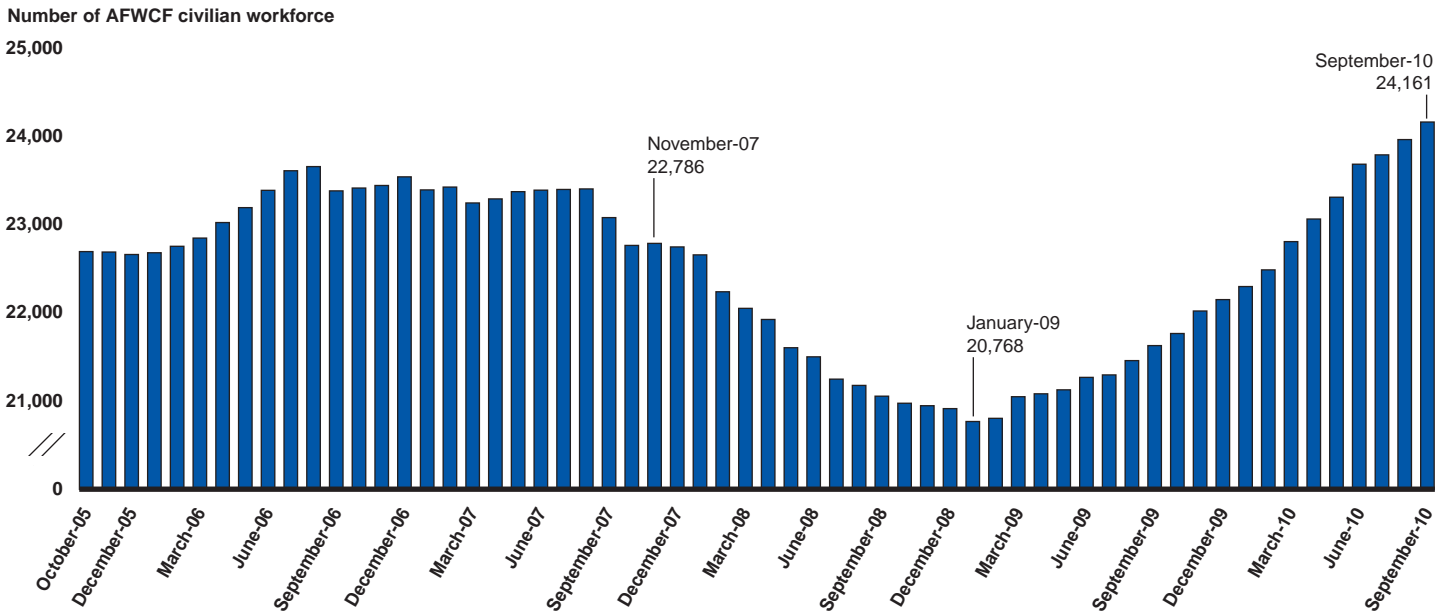
Significant variance to forecasted workload on the number of hours of work to be performed and the effect it has on other decisions, such as determining personnel levels, has a direct effect on carryover balances. When forecasts are significantly different from results, carryover can increase significantly as was the case in fiscal year 2009.

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### ALCs Reduced Workforce Led to Personnel Shortages

Having the right number of personnel with the right skill mix to perform depot maintenance work is essential for the ALCs to operate in an efficient and effective manner. However, the ALCs reduced their workforce in fiscal year 2008 and the first 4 months of fiscal year 2009 which caused personnel shortages and contributed to growth in carryover amounts for fiscal years 2008, 2009, and 2010. Personnel are a critical component in the ALCs' ability to repair and maintain an aging Air Force fleet of fighters, bombers, and cargo aircraft. In a November 2007 Air Force memorandum, the Air Force stated that "while overall workload is decreasing, we are seeing manpower growth instead." As a result, the Air Force directed AFMC to reduce its total workforce to support the forecasted workload. The following figure provides AFMC monthly civilian workforce totals for fiscal years 2006 through 2010.

**Figure 3: AFMC Monthly Civilian Workforce Totals for Fiscal Years 2006 through 2010**



Source: GAO analysis of AFMC report on personnel.

In the 14 months immediately following the issuance of the November 2007 memorandum, AFMC reduced its workforce by about 2,000 civilian personnel—primarily through attrition and buy-out incentives. According to AFMC and ALC officials, these personnel reductions significantly reduced the operational capabilities at the ALCs and coupled with the increase in orders led directly to increased carryover amounts from fiscal years 2008 through 2010.

In the first half of fiscal year 2009, the Air Force determined that the workforce reductions were not warranted because the dollar amount of external new orders (workload) received by the ALCs increased instead of decreasing. For example, the ALCs received \$3.4 billion of external new orders in fiscal year 2009—about a \$285 million increase over fiscal year 2008 orders. In order to meet higher workload demands and limit the growth in fiscal years 2009 and 2010 carryover amounts, the ALCs began hiring personnel in fiscal year 2009. Most of the hiring occurred at the Oklahoma City and Warner Robins ALCs. For example, the Oklahoma City ALC increased civilian personnel from 7,073 to 8,848 in a 20-month period beginning in February 2009—a 25 percent increase. While increasing the workforce has helped the ALCs to reduce the growth in carryover, ALC

officials informed us that the new personnel lacked the experience of the personnel who left in fiscal year 2008 and the first half of fiscal year 2009. As a result, the new personnel were not always as efficient and required experienced workers to train them, reducing the productivity of the existing workforce. Further, the ALCs required time to ramp up hiring and train new personnel to be certified to repair weapon systems. AFMC and ALC officials stated that the ALCs should reach their projected personnel levels in fiscal year 2011.

### External New Orders Consistently Exceeded Budget Estimates

Accurate budgets on the amount of external new orders to be received are essential for the ALCs to plan their work such as determining the right number of personnel needed. However, from fiscal year 2006 through fiscal year 2010, the Air Force consistently underestimated its new orders when developing its AFWCF budgets for work performed by ALCs on orders received from customers that were external to AFWCF. Further, for fiscal years 2009 and 2010, actual new orders exceeded budgeted orders by \$242 million and \$597 million, respectively—the largest differences in the 5-year period. Table 4 shows the dollar amount of actual and budgeted new orders for fiscal years 2006 through 2010.

**Table 4: Actual and Budgeted New Orders for Work Performed by ALCs on Orders Received from Customers Who Were External to AFWCF for Fiscal Years 2006 through 2010**

Dollars in millions					
	Fiscal year 2006	Fiscal year 2007	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Actual new orders	\$3,080	\$2,862	\$3,116	\$3,401	\$3,530
Budgeted new orders	2,862 <sup>a</sup>	2,788	3,025	3,159	2,933
Amount of actual orders exceeding budgeted orders	\$218	\$74	\$91	\$242	\$597

Source: GAO analysis of AFWCF data.

Note: Actual and budgeted new order amounts for fiscal years 2006 through 2010 were not reduced for exclusions in order to show the total amount of work to be performed on external new orders.

<sup>a</sup>We used the fiscal year 2006 revised amount in the AFWCF fiscal year 2007 budget carryover worksheets because the fiscal year 2006 budget worksheets were not available.

When developing its budget for new orders for fiscal year 2006 through fiscal year 2010, Air Force officials informed us they did not include orders for work financed with OCO funds. However, for fiscal years 2006 through 2010, the ALCs received \$1.7 billion in work financed with OCO funds. The

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majority of the funded orders were received in fiscal years 2009 and 2010 when the ALCs received \$1 billion in OCO-funded orders over this 5-year period. Air Force officials told us that they did not include OCO orders in the budget for two reasons:

- Customers' OCO budgets were finalized and submitted later in the calendar year than the base budget. Thus, the amount of OCO orders was not fully determined when the AFWCF budget was completed and submitted.
- For fiscal years 2006 through 2008, the actual orders varied by about \$218 million or less than the budgeted orders. Air Force officials said that there was enough flexibility with the AFWCF to perform the additional amount of work, such as having employees work overtime.

While the difference between actual and budgeted orders ranged from \$74 million to \$218 million from fiscal years 2006 through 2008, the difference grew in fiscal years 2009 and 2010 primarily due to an increase in OCO-funded orders. To correct this problem, the Air Force began including OCO-funded orders in the fiscal year 2012 AFWCF budget.

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### ALCs Could Not Obtain Parts Needed to Perform Repair Work on External Orders

Without the DOD supply system maintaining the right mix and sufficient quantities of spare parts, the ALCs cannot complete funded workload in a timely and efficient manner. However, our analysis of Air Force data and interviews with ALC officials found that parts shortages at the ALCs have contributed to the growth of carryover. Air Force operations have grown significantly in support of OCO. These higher operational levels have resulted in increased wear on the Air Force's aging fleet of aircraft such as the KC-135 and C-130 and engines, such as the F110-100 and F108-100, resulting in a greater demand for spare parts to repair them. When shortages of parts occur, the ALCs (1) work may be delayed until the parts are available in the supply system or are manufactured by the ALCs, potentially increasing the carryover amounts at year end, or (2) costs increase from the time-consuming efforts taken to obtain (cannibalize) parts from other aircraft or engines to continue the repair process.

Our analysis of Air Force data showed that the average monthly backorders for spare parts at the ALCs have grown significantly in recent years. From fiscal years 2008 to 2010, average backorders at the ALCs grew by 44 percent. The Defense Logistics Agency and the Air Force's Global Logistics Support Center were the ALCs' primary supply sources for acquiring spare parts. Table 5 provides the ALCs average monthly backorders.

**Table 5: ALCs Average Monthly Number of Backorders Outstanding for Fiscal Years 2008 through 2010**

Air Force ALC	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010	3-year percentage growth
Oklahoma City, OK	7,019	7,456	12,363	76
Warner Robins, GA	8,353	9,013	11,212	34
Ogden, UT	10,713	10,547	14,020	31
<b>Total average monthly backorders</b>	<b>26,086</b>	<b>27,016</b>	<b>37,595</b>	<b>44</b>

Source: Air Force data.

Note: Totals may not add due to rounding.

According to ALC officials, backorders for spare parts grew because the supply system did not maintain the right mix or sufficient quantities of spare parts on hand to meet the higher-than-projected workload requirements experienced in fiscal years 2009 and 2010. For example, Oklahoma City Center officials informed us that the F108-100 engine program experienced a 60 percent increase for the overhaul of these engines from fiscal years 2008 to 2009, creating shortages of parts such as the engine mounts and compressor discharge nozzle cases. In addition, over the 3-year period the average age of backorders for spare parts grew in all age categories. Spare parts on backorder can delay work and potentially increase the carryover amounts. Table 6 provides the average monthly backorders for the three ALCs by age category.

**Table 6: Aging of ALCs' Average Monthly Number of Backorders Outstanding for Fiscal Years 2008 through 2010**

Age category as number of days outstanding	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010	3-year percentage growth
Above 180	6,085	5,879	7,760	28
91 to 180	4,778	4,798	6,454	35
61 to 90	2,705	2,916	4,017	49
31 to 60	4,091	4,475	6,410	57
0 to 30	8,428	8,948	12,955	54

Source: Air Force data.

In order to perform the required repair work and to minimize the impact of parts shortages, the ALCs have used other methods to obtain needed parts such as obtaining parts from other aircraft (known as cannibalization),

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fabricating parts, or obtaining parts through the use of their local procurement authority. While the alternative methods allowed work to continue, obtaining the needed parts this way was inefficient. For example, if the aircraft mechanic does not receive the spare parts from the supply system, the mechanic may cannibalize parts from other aircraft. According to reports, the three ALCs cannibalized 5,189, 5,447, and 5,667 items in fiscal years 2008, 2009, and 2010, respectively. According to officials, the ALCs can cannibalize parts in the short term to resolve spare part shortages; however, in the long term, the ALCs need the supply system to obtain the needed parts to continue operations.

We reported in March 2007 that the basic challenge of inventory management is having the proper amount of items on hand when required.<sup>8</sup> If inventory levels are too low, DOD and its components may experience supply shortages and be unable to satisfy customer demands. If inventory levels are too high, money is invested on items that may never be used. Because of ineffective and inefficient inventory management practices and procedures, since 1990 we have identified DOD supply chain management as a high-risk area.<sup>9</sup>

DOD has acknowledged the longstanding problems concerning its inventory management and has actions under way to address them. With the objective of reducing the acquisition and storage of secondary item inventory that is excess to requirements, section 328 of the National Defense Authorization Act for Fiscal Year 2010<sup>10</sup> required the Secretary of Defense to submit to congressional defense committees a comprehensive plan for improving the inventory management systems of the military departments and the Defense Logistics Agency. On November 8, 2010, DOD submitted its Comprehensive Inventory Management Improvement Plan to the congressional defense committees.<sup>11</sup> Section 328 also requires GAO to submit to the congressional defense committees an assessment of the extent to which the plan meets the specified requirements no later

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<sup>8</sup> GAO, *Defense Inventory: Opportunities Exist to Improve the Management of DOD's Acquisition Lead Times for Spare Parts*, [GAO-07-281](#) (Washington, D.C.: Mar. 2, 2007).

<sup>9</sup> GAO, *High-Risk Series: An Update*, [GAO-11-278](#) (Washington, D.C.: February 2011).

<sup>10</sup> Pub. L. No. 111-84, div. A, title III, § 328, 123 Stat. 2190, 2255 (Oct. 28, 2009).

<sup>11</sup> DOD, *Comprehensive Inventory Management Improvement Plan*, (Nov. 8, 2010). The objective of the plan is to reduce the acquisition and storage of secondary item inventory that is excess to requirements. For example, the plan reported that 13.1 percent of Air Force's inventory is excess in fiscal year 2009.

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than 60 days after the plan's submission. We assessed the plan and found that DOD's plan addressed each of the eight required elements in section 328.<sup>12</sup> Section 328 also requires GAO to submit another report to the congressional defense committees not later than 18 months after DOD's plan is submitted. The second report is to document our assessment of the extent to which the plan has been effectively implemented by each military department and by the Defense Logistics Agency.

Since DOD recently issued its plan in November 2010 to improve the management of inventory and we will be assessing the implementation of the plan, we are not making any recommendations in this report on the parts shortages. However, until DOD resolves its inventory problems, the ALCs will likely continue to be affected by parts shortages or other supply chain management problems that affect their efficiency as well as the dollar amount of carryover.

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## Conclusions

Reliable carryover information is essential for Congress and DOD to perform their oversight responsibilities, including reviewing and making well-informed decisions on DOD's budget. However, the Air Force underestimated the work to be performed and the related resources needed, thereby impacting its ability to complete the work in an efficient and effective manner and causing carryover to exceed the allowable amounts in the AFWCF annual budgets. Budget estimates could be improved by implementing effective controls to properly consider and address the major factors that caused variations between budgeted and actual carryover amounts. Also, correctly interpreting and applying criteria in the DOD Financial Management Regulation for determining the allowable carryover amounts would increase the reliability of such estimates. While the carryover metric is a management tool for controlling the amount of work that can carry over from one fiscal year to the next, the metric can also be used as a tool to identify problems in other areas such as (1) developing workload requirements on the number of hours of depot maintenance work to be performed, (2) establishing personnel levels to perform the depot maintenance work, (3) developing budgets on the amount of new orders for depot maintenance work, and (4) obtaining spare parts to perform depot maintenance work. For example, in fiscal

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<sup>12</sup> GAO, *DOD's 2010 Comprehensive Inventory Management Improvement Plan Addressed Statutory Requirements, But Faces Implementation Challenges*, [GAO-11-240R](#) (Washington, D.C.: Jan. 7, 2011).

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year 2009, AFWCF carryover exceeded the allowable amount by over a half a billion dollars. This was largely due to the ALCs' reducing their personnel by about 2,000 shortly after the Air Force issued a memorandum in November 2007 directing them to do so in anticipation of workload reductions that did not materialize. The Air Force has initiated actions to improve the budgeting and management of carryover. These actions have the potential to improve the accuracy of budgeting for AFWCF carryover. However, the Air Force needs to routinely compare the budgeted carryover information with the actual results and determine the reasons for the differences and consider this information in formulating future budgets.

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## Recommendations for Executive Action

We are making five recommendations to the Secretary of Defense to improve the budgeting and management of carryover.

We recommend that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) to take the following action:

- Clarify the existing guidance in the DOD Financial Management Regulation that allows Army ordnance activities to use multiyear appropriations in the calculation of allowable carryover to ensure that other working capital fund activities do not use this provision as a basis for their calculation of allowable carryover.

We recommend that the Secretary of Defense direct the Secretary of the Air Force to take the following actions:

- Take actions to ensure that requests for exemption from the carryover policy are made in writing and approved by the Director for Revolving Funds as required by the DOD Financial Management Regulation.
- Require Air Force headquarters and Air Force Materiel Command to routinely compare budgeted carryover that is over or under the allowable amount to the actual amount to identify the differences and reasons for the differences, and consider these trends in developing future budget estimates on carryover.
- Require Air Force headquarters and Air Force Materiel Command to routinely compare budgeted orders to actual orders to identify the differences and reasons for the differences, and consider them in developing future years' budget estimates on new orders to be received from customers.
- Require Air Force headquarters and Air Force Materiel Command to routinely compare the forecasted workload requirements on the number of hours of depot maintenance work to be performed to the actual number

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and consider these trends in developing future years' depot maintenance workload requirements.

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## Agency Comments and Our Evaluation

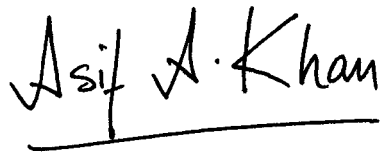
DOD provided written comments on a draft of this report. In its comments, DOD concurred with the five recommendations and cited actions planned or under way to address them. For example, DOD stated that the DOD Financial Management Regulation will be updated to clarify that the intent of existing guidance is to permit Army ordnance activities to use multiyear appropriations in the calculation of allowable carryover, and that other working capital fund activities cannot use this provision without prior approval in writing from the OUSD (Comptroller) Director for Revolving Funds. DOD also stated that before DOD direction could be given, Air Force headquarters had already notified AFMC that written approval from the OUSD (Comptroller) Director for Revolving Funds is required for exemptions to the allowable carryover calculation. Further, DOD stated that Air Force headquarters has tasked AFMC to submit its analyses comparing budgeted and actual information on carryover, orders, and workload requirements on the number of hours of depot maintenance work to be performed to improve the budgeting and management of carryover in future years. DOD also stated that it is the Air Force's intent to include the requirement to perform these analyses in its annual working capital fund budget guidance.

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We are sending copies of this report to the appropriate congressional committees. We are also sending copies to the Secretary of Defense; the Under Secretary of Defense (Comptroller); and the Secretary of the Air Force. The report also is available at no charge on the GAO Web site at <http://www.gao.gov>.

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Should you or your staff have any questions concerning this report, please contact Asif A. Khan at (202) 512-9095 or [khana@gao.gov](mailto:khana@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Asif A. Khan". The signature is written in a cursive style and is positioned above a solid horizontal line.

Asif A. Khan  
Director, Financial Management and Assurance

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# Appendix I: Scope and Methodology

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To determine the extent to which (1) budget information on Air Force depot maintenance carryover for fiscal years 2006 through 2010 approximated actual results and, if not, any needed actions the Air Force is taking to improve budgeting for carryover, and (2) the Air Force depot maintenance actual carryover exceeded the allowable amount of carryover from fiscal years 2006 through 2010 and any adjustments were made to the allowable amount, we obtained and analyzed Air Force depot maintenance reports that contained information on budgeted and actual carryover and the allowable amount of carryover for fiscal years 2006 through 2010. We met with responsible officials from Air Force headquarters, Air Force Materiel Command (AFMC), and the Air Logistics Centers (ALC) to determine the reasons for significant variances between budgeted and actual carryover or actual carryover and the allowable amount. We also met with these officials to discuss the actions the Air Force was taking to improve budgeting and management of carryover. Further, we identified and analyzed any adjustments made by the Air Force that increased the allowable carryover amounts for fiscal years 2009 and 2010. We discussed the adjustments with Office of the Under Secretary of Defense (Comptroller) and Air Force headquarters officials to obtain their explanations for making the adjustments and reviewed requirements contained in the DOD Financial Management Regulation for making adjustments to the carryover policy.

To determine the extent to which there was growth in carryover at the Air Force depot maintenance in-house activities on orders received from customers that were external to Air Force Working Capital Fund (AFWCF) and the reasons for the growth, we met with responsible officials from the three ALCs, AFMC, and Air Force headquarters. Based on those discussions, we obtained information that affected carryover. First, we analyzed planned versus actual workload requirement information to determine if the Air Force developed reliable forecasted workload requirements. When differences occurred between planned and actual requirements, we met with Air Force headquarters officials to determine the reasons for the differences. Second, we analyzed reports that provided information on personnel levels at the ALCs to determine if they had reduced their workforce. We met with officials at the three ALCs, AFMC, and Air Force headquarters to discuss the reduction of personnel at the ALCs as well as the subsequent hiring and training of personnel. Third, we analyzed budgeted and actual new orders from fiscal years 2006 through 2010 to determine if the Air Force underestimated the ALCs budgeted orders. When differences occurred between budgeted and actual new orders, we met with Air Force headquarters officials to determine the reasons for these differences. Fourth, we analyzed information on the

ALCs ability to obtain spare parts to perform work to determine if parts shortages contributed to carryover. We met with AFMC and ALC officials to discuss parts shortages and what actions the ALCs could take to alleviate the shortages. Fifth, we identified all high-dollar carryover orders received by the ALCs in fiscal years 2009 and 2010 to determine the reasons for the carryover. We focused on these orders because (1) carryover exceeded the allowable amount by over a half a billion dollars in fiscal year 2009 and (2) fiscal year 2010 orders were the most recent orders at the time of our audit.

Financial information in this report was obtained from official Air Force budget documents and accounting reports. To assess the reliability of the data, we (1) reviewed and analyzed the factors used in calculating carryover for the completeness of the elements included in the calculation, (2) interviewed Air Force officials knowledgeable about the carryover data, (3) reviewed GAO reports on depot maintenance activities, and (4) reviewed orders customers submitted to the depots to determine whether they were adequately supported by documentation. In reviewing these orders, we obtained the status of the carryover at the end of the fiscal year. On the basis of procedures performed, we have concluded that these data were sufficiently reliable for the purposes of this report. We performed our work at the headquarters of the Office of the Under Secretary of Defense (Comptroller) and the Office of the Secretary of the Air Force, Washington, D.C.; Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio; the depot maintenance wing at the Oklahoma City Air Logistics Center, Tinker Air Force Base, Oklahoma; the depot maintenance wing at the Ogden Air Logistics Center, Hill Air Force Base, Utah; and the depot maintenance wing at the Warner Robins Air Logistics Center, Robins Air Force Base, Georgia. We conducted this performance audit from July 2010 through July 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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# Appendix II: Examples of Problems Experienced by Air Logistics Centers Contributing to Carryover

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This appendix contains specific examples showing those problems experienced by the Air Logistics Centers (ALC) in performing depot maintenance work that contributed to work carrying over from one fiscal year to the next. These problems include (1) the lack of personnel, (2) difficulties encountered in obtaining parts from the Department of Defense supply system, and (3) changing or increasing workload requirements. Most of the examples discussed below include two or three of the problems cited above.

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## F110-100 Engine

The Oklahoma City ALC repairs Air Force F110-100 engines used on the F-16 Fighting Falcon aircraft. Beginning in fiscal year 2008, the Air Force began experiencing delays in the engine program due to personnel and parts shortages that resulted in higher carryover in fiscal years 2009 and 2010. These personnel and parts shortages resulted in the average number of days necessary to complete an engine from the date the engine was inducted (flow days) increasing from 135 days at the end of fiscal year 2008 to 371 days at the end of fiscal year 2010—a 175 percent increase. The personnel and parts shortages are discussed below.

- ALC officials told us that personnel shortages occurred because 7 of their 14 experienced mechanics were transferred to another engine repair line beginning in fiscal year 2008 even though orders for repairing the engine did not decline. The ALC transferred the mechanics because (1) the serviceable engines in Air Force’s worldwide inventory exceeded its wartime requirements and (2) there was an urgent need for the mechanics on another engine repair line.
- ALC officials also told us that work on the engines was delayed because parts were not always available in the supply system. At the end of fiscal years 2009 and 2010, program office officials estimated that there were about 129 and 137 backorders for parts, respectively. For example, the production unit could not obtain enough service life extension packages to overhaul the engines. According to officials and documentation, another delay occurred when some of the engines’ front stator assemblies were identified as having excessive wear—a new failure mode. The ALC could not repair the assemblies because it did not have a certified process for repairing the parts. Thus, the ALC negotiated and awarded a contract to a vendor. The process to competitively award the contract and have the parts repaired by the vendor created delays in the program during fiscal years 2009 and 2010. ALC personnel now have a certified process for repairing the parts.

Due to the personnel and parts shortages, ALC officials stated that they did not complete work on their fiscal year 2009 orders and work did not

start on their fiscal year 2010 orders as of November 2010. As a result, carryover was higher than planned at the end of fiscal years 2009 and 2010. Specifically, the ALC planned to carry over \$56 million on 19 engines into fiscal year 2010. Instead, it carried over \$120 million on 43 engines into fiscal year 2010—about \$64 million and 24 engines more than planned. The personnel and parts shortages continued on these engines into fiscal year 2010. The ALC planned to carry over \$21 million on 7 engines into fiscal year 2011. Instead, it carried over \$81 million on 29 engines into fiscal year 2010—\$60 million and 22 engines more than planned.

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### **F108-100 Engine**

Beginning in fiscal year 2009, the requirement for repairing F108-100 engines used on the KC-135 refueling aircraft grew significantly because the Air Force did not have enough serviceable engines to satisfy its wartime requirement. Thus, the Oklahoma City ALC began expanding its production capacity to produce upwards of 120 engines annually—more than doubling the 53 engines produced in fiscal year 2008. To perform the additional workload, the ALC transferred 7 mechanics from another engine repair line and hired an additional 30 mechanics in fiscal years 2009 and 2010. According to our analysis of data and discussions with F108-100 program and production officials, the increased requirement created significant parts shortages in fiscal year 2010 because the demand for parts needed to repair these engines exceeded the availability of inventory in some cases. For example, due to a lack of high pressure compressors and fan booster assemblies, work on several engines stopped periodically until replacement parts were obtained. Data showed that the engine program had 160 backorders at the end of fiscal year 2010—almost doubling 81 backorders at the end of the previous year. Production of the engine dropped from 85 in fiscal year 2009 to 67 in fiscal year 2010 primarily due to the parts shortages according to Oklahoma City ALC officials even though they planned to produce 90 engines in fiscal year 2010. The ALC planned to carry over \$11 million on 5 engines into fiscal year 2011. Instead, it carried over \$78 million on 37 engines into fiscal year 2011—\$67 million more than planned.

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### **B-52 Aircraft**

Prior to fiscal year 2006, Oklahoma City ALC officials stated that the Air Force maintained a B-52 fleet size of 93 aircraft. To maintain the B-52s, it inducted and performed depot maintenance work on about 21 or 22 aircraft annually and retained a workforce of almost 480 personnel to perform the work. According to a fiscal year 2006 budget document, the Air Force planned to reduce its fleet size to 56 aircraft in order to transform its “total force” into a smaller, more lethal and agile force by

eliminating the most expensive, least effective systems. By January 2007, the Air Force reduced its planned funding for depot-level repairs and maintenance of B-52 aircraft to 13 annually. Moreover, the B-52 workforce was reduced to just over 300 personnel—a reduction of about 180.

The National Defense Authorization Act for Fiscal Year 2008 required the Air Force to retain a larger fleet size of B-52 aircraft than previously required.<sup>1</sup> According to production officials, when the Air Force increased its targeted fleet size from 56 to 76 to comply with congressional direction, the ALC had to increase its workforce to satisfy a higher production requirement of 17 aircraft annually. The workforce shortage, according to these officials, created a backlog of work in the B-52 program that contributed to (1) the average number of days to complete an aircraft increasing by 76 days between fiscal years 2008 and 2010 from 227 to 303 and (2) \$73.3 million of the \$75.6 million of orders received in the last 4 months in fiscal year 2009 carried over from fiscal year 2009 into fiscal year 2010. The ALC increased its workforce to 492 personnel in fiscal year 2010 to handle the additional workload.

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## C-5 Aircraft

Because of increasing requirements in the C-5 aircraft program, the Warner Robins ALC encountered problems with a lack of parts and personnel to perform the work. The C-5 program fiscal year 2010 requirements increased from 677,103 hours to 1,046,434 hours, or an increase of 369,331 hours from the initial budget. However, because of a previous hiring freeze, the C-5 program was understaffed by 145 employees, or about 27 percent of its planned direct labor workforce at the beginning of fiscal year 2010. Officials informed us that it takes about 2 years before a new hire becomes highly productive. As a result of the lack of parts and personnel associated with increased requirements, the average flow days increased from 286 days in fiscal year 2009 to 340 days in fiscal year 2010. The following example illustrates how the work was affected by a lack of parts and personnel due to increasing requirements.

In April 2009, the ALC accepted a \$20.4 million order that was financed with fiscal year 2009 Air Force Reserve operation and maintenance appropriated funds to perform depot maintenance on one C-5 aircraft.

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<sup>1</sup> Pub. L. No. 110-181, div. A, title I, § 137, 122 Stat. 3, 32 (Jan. 28, 2008). Previously the John Warner National Defense Authorization Act for Fiscal Year 2007 required that DOD maintain an inventory of at least 44 combat-coded B-52s.

Because the aircraft was inducted on September 30, 2009, the entire \$20.4 million carried over into fiscal year 2010. According to ALC officials, aging of the aircraft increased labor and parts requirements, which affected the ALCs ability to perform the depot maintenance work. This further contributed to the carryover problem and resulted in \$2.9 million being carried over into fiscal year 2011. For this C-5 aircraft, labor requirements increased from 47,965 hours to 58,274 hours, or an increase of 10,309 hours, to perform the depot maintenance work. Our review of documentation found that there were five backorders of parts and material associated with the depot maintenance work on the C-5 aircraft. In addition, in order to perform the required depot maintenance work and help minimize the impact of part shortages on the C-5 program, the ALC either obtained parts from other aircraft (cannibalized) to use on this aircraft or removed parts from this aircraft to use on other aircraft. Documentation showed that a total of 94 parts were either obtained from other aircraft or removed from this aircraft to alleviate part shortages.

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## C-130 Aircraft

Because of increasing requirements in the C-130 program, the Warner Robins ALC encountered problems with a lack of parts and personnel to perform the work. The C-130 program fiscal year 2010 requirements increased from 1,277,855 hours to 1,324,476 hours, or an increase of 46,621 hours from the initial budget. However, because of a previous hiring freeze, the C-130 program was understaffed by 186 employees, or about 22 percent of its planned direct labor workforce at the beginning of fiscal year 2010. Officials informed us that it takes about 2 years before a new hire becomes highly productive. The following example illustrates how the work was affected by a lack of parts and personnel due to increasing requirements.

In June 2009, the ALC accepted a \$4.8 million order that was financed with fiscal year 2009 Air Force operation and maintenance appropriated funds to perform depot maintenance work on one C-130 aircraft. According to officials, increased requirements in the C-130 program required the ALC to use more labor and parts than planned to perform the depot maintenance work. As a result, the ALC carried over \$3.9 million into fiscal year 2010. For this C-130 aircraft, labor requirements increased from 27,959 hours to 30,405 hours, or an increase of 2,446 hours, to perform the depot maintenance work. In addition, in order to perform the required depot maintenance work and help minimize the impact of part shortages on the C-130 program, the ALC either obtained parts from other aircraft to use on this aircraft or removed parts from this aircraft to use on other aircraft.

Documentation showed that a total of 31 parts were either obtained from other aircraft or removed from this aircraft to alleviate part shortages.

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## **A-10 Aircraft**

In fiscal year 2010, the Ogden ALC performed depot maintenance work on Air Force A-10 aircraft to extend its service life. According to Ogden ALC officials and documentation on the A-10 service life extension program, the A-10 aircraft was originally designed to fly approximately 8,000 hours and be replaced by a newer, more modern aircraft. The aircraft was originally expected to fly through fiscal year 2005; however, the Air Force decided to extend the aircraft's service life to fiscal year 2028 due to its unique mission capabilities. This decision required the aircraft to undergo a major overhaul including its wings, fuselage, and fuel cells. According to A-10 officials, the lack of a sufficient number of serviceable aircraft wings in Air Force supply created significant program delays in fiscal year 2010 that increased the ALCs carryover above plan. The officials informed us they planned to complete work on A-10 aircraft, on average, in about 180 days in fiscal year 2010; however, maintenance on the wings alone took, on average, about 220 days. The ALC planned to carry over \$53 million into fiscal year 2011. Instead, it carried over \$64 million—\$11 million more than planned.

# Appendix III: Comments from the Department of Defense



COMPTROLLER

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
1100 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1100

JUN 7 2011

Mr. Asif A. Khan  
Director  
Financial Management and Assurance  
Government Accountability Office  
441 G Street, N.W.  
Washington, DC 20548

Dear Mr. Khan:

This is the Department of Defense (DoD) response to the GAO draft report (GAO-11-539), "AIR FORCE WORKING CAPITAL FUND: Budgeting and Management of Carryover Work and Funding Could be Improved," dated May 2011, (GAO Code 197093).

Actions to improve the budgeting for and management of carryover noted in the draft report are underway.

Sincerely,

A handwritten signature in black ink, appearing to read "John P. Roth".

John P. Roth



GAO DRAFT REPORT DATED MAY 13, 2011  
GAO-11-539 (GAO CODE 197093)

“AIR FORCE WORKING CAPITAL FUND: BUDGETING AND  
MANAGEMENT OF CARRYOVER WORK AND FUNDING  
COULD BE IMPROVED”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) to clarify the existing guidance in the DoD Financial Management Regulation that allows Army ordnance activities to use multiyear appropriations in the calculation of allowable carryover to ensure that other working capital fund activities do not use this provision as a basis for their calculation of allowable carryover.

**DoD RESPONSE:** The DoD concurs; the DoD Financial Management Regulation will be updated to clarify that the intent of the existing guidance is to permit Army ordnance activities to use multiyear appropriations in the calculation of allowable carryover. Other working capital fund activities cannot use this provision -- to apply the 2nd Year Procurement outlay rate to the allowable carryover calculation -- without prior approval in writing from the OUSD(C) Director for Revolving Funds.

**RECOMMENDATION 2:** The GAO recommends that the Secretary of Defense direct the Secretary of the Air Force to take actions to ensure that requests for exemption from the carryover policy are made in writing and approved by the Director for Revolving Funds as required by the DoD Financial Management Regulation.

**DoD RESPONSE:** The DoD concurs, but before DoD direction could be given, Air Force Headquarters had already notified Air Force Materiel Command (AFMC) that written approval from OUSD(C) Director for Revolving Funds is required for the use of the 2nd Year Procurement outlay rate in allowable carryover calculations.

**RECOMMENDATION 3:** The GAO recommends that the Secretary of Defense direct the Secretary of the Air Force to require Air Force headquarters and Air Force Materiel Command to routinely compare budgeted carryover that is over or under the allowable amount to the actual amount to identify the differences and

reasons for the differences, and consider these trends in developing future years' budget estimates on carryover.

**DoD RESPONSE:** The DoD concurs, but before DoD direction could be given, Air Force Headquarters had officially tasked Air Force Materiel Command (AFMC) to submit analysis of variances between budgeted and actual carryover allowance and to consider results in developing future years' budget estimates on carryover. In future years, the requirement for this analysis will be included in the annual Working Capital Fund Budget Guidance provided by Air Force Headquarters.

**RECOMMENDATION 4:** The GAO recommends that the Secretary of Defense direct the Secretary of the Air Force to require Air Force headquarters and Air Force Materiel Command to routinely compare budgeted orders to actual orders to identify the differences and reasons for the differences, and consider them in developing future years' budget estimates on new orders to be received from customers.

**DoD RESPONSE:** The DoD concurs, but before DoD direction could be given, Air Force Headquarters had officially tasked Air Force Materiel Command (AFMC) to submit analysis of variances between budgeted and actual orders and to consider results in developing future years' budget estimates of new customer orders. In future years, the requirement for this analysis will be included in the annual Working Capital Fund Budget Guidance provided by Air Force Headquarters.

**RECOMMENDATION 5:** The GAO recommends that the Secretary of Defense direct the Secretary of the Air Force to require Air Force headquarters and Air Force Materiel Command to routinely compare the forecasted workload requirements on the number of hours of depot maintenance work to be performed to the actual number and consider these trends in developing future years' depot maintenance workload requirements.

**DoD RESPONSE:** The DoD concurs, but before DoD direction could be given, Air Force Headquarters had officially tasked Air Force Materiel Command (AFMC) to compare the forecasted workload requirements on the number of hours of depot maintenance work to be performed to the actual number and to consider results in developing future years' depot maintenance workload requirements. In future years, the requirement for this analysis will be included in the annual Working Capital Fund Budget Guidance provided by Air Force Headquarters.

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# Appendix IV: GAO Contact and Acknowledgments

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## GAO Contact

Asif A Khan, (202) 512-9095 or [khana@gao.gov](mailto:khana@gao.gov)

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## Acknowledgments

In addition to the contact named above, Greg Pugnetti, Assistant Director; Steve Donahue; Keith McDaniel; and Hal Santarelli made key contributions to this report.

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