



Highlights of [GAO-09-50](#), a report to the Subcommittee on Air and Land Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

The Department of Defense's (DOD) C-5 Galaxy and C-17 Globemaster III aircraft play key roles in transporting weapons and other cargo. Since September 2001, these aircraft have delivered over 2.4 million tons of cargo to staging and operating bases in Iraq and Afghanistan. Yet determining the number and mix to meet current and future airlift requirements has become increasingly challenging given distinct differences between the two aircraft. While the C-5 can carry more cargo, the newer C-17 is more flexible since it can deliver to forward-deployed bases and has a higher mission capable rate.

GAO was asked to identify the impact C-5 modernization cost increases have had on the mix of aircraft; assess the current C-5 modernization cost estimate; and identify C-17 production plans and issues related to production line shutdown. To conduct its work, GAO reviewed options DOD considered to meet its current and future strategic airlift requirements, and evaluated C-5 modernization and C-17 production line shut down cost estimates.

What GAO Recommends

GAO is making recommendations to help DOD identify the appropriate strategic airlift mix and improve cost estimates for the C-5 program and C-17 production shutdown. DOD concurred with one recommendation and partially concurred with another, but believes updated C-5 cost estimates are not warranted. GAO believes this recommendation is still valid.

To view the full product, including the scope and methodology, click on [GAO-09-50](#). For more information, contact Michael J. Sullivan at (202) 512-4841 or sullivanm@gao.gov

DEFENSE ACQUISITIONS

Timely and Accurate Estimates of Costs and Requirements Are Needed to Define Optimal Future Strategic Airlift Mix

What GAO Found

The Air Force has cut the number of C-5s it plans to fully modernize by more than half because of substantial cost increases in the C-5 Reliability Enhancement and Reengining Program (RERP) and plans to acquire more C-17s, with additional congressional funding. Currently, the Air Force plans to provide avionics upgrades to all 111 C-5s, limit RERP to 52 C-5s, and acquire 205 C-17s. However, this mix may change again, based in part on the results of a new mobility capabilities study, the findings of which DOD plans to release in May 2009. While the new study is expected to consider transport needs for the future force, DOD has not identified specific metrics it will use to make strategic airlift decisions—a concern GAO raised about DOD's previous mobility capabilities study and one DOD agreed to address in future studies.

The Air Force currently estimates it will spend \$9.1 billion on upgrading the C-5s. However, this estimate may be understated because DOD did not apply risk or uncertainty analyses to its RERP major cost drivers. Moreover, the current RERP is underfunded by almost \$300 million and may be unachievable if the engine production schedule is not met. At the same time, the Air Force has not priced or budgeted for a new upgrade program it plans to begin in fiscal year 2010 to address certain modernization deficiencies and to add new capabilities. Some future costs, however, may be avoided should the Air Force justify retirement of some older C-5s and forego planned modifications.

Careful planning is needed to ensure C-17 production is not ended prematurely and later restarted at substantial cost. Current production plans call for shutting down the C-17 production line in September 2010. However, results from the new mobility capabilities studies and potential C-5 retirements could lead to decisions to extend C-17 production beyond the 205 now authorized. Both the manufacturer and Air Force agree that shutting down and restarting production would not be feasible or cost effective due to the costs to reinstate a capable workforce, reinstall tooling, and reestablish the supplier base. At some point, the C-17 production line will shut down, and DOD will have to pay substantial costs that have not yet been budgeted. The manufacturer and Air Force shutdown estimates differ significantly—about \$1 billion and \$465 million, respectively—in large part because the manufacturer's estimate included assumptions about demolishing facilities and environmental remediation, while the Air Force's did not.

Comparison of C-5 and C-17 Capabilities and Characteristics

| | C-5 | C-17 |
|-----------------------|-------------------------|-------------------------|
| Loads | 270,000 pounds of cargo | 170,900 pounds of cargo |
| Range (unrefueled) | 6,320 miles | 2,700 miles |
| Minimum runway length | 6,000 feet | 3,500 feet |
| Crew | 7 | 3 |
| Mission capable rate | 53 percent | 86 percent |
| Cost per flying hour | \$23,100 | \$11,300 |