



Highlights of [GAO-10-382](#), a report to congressional committees

## Why GAO Did This Study

The F-35 Lightning II, also known as the Joint Strike Fighter (JSF), is the Department of Defense's (DOD) most costly and ambitious aircraft acquisition, seeking to simultaneously develop and field three aircraft variants for the Air Force, Navy, Marine Corps, and eight international partners. The JSF is critical for recapitalizing tactical air forces and will require a long-term commitment to very large annual funding outlays. The current estimated investment is \$323 billion to develop and procure 2,457 aircraft. As required by law, this report discusses (1) program cost, schedule, and performance; (2) manufacturing results; and (3) test plans and progress. GAO's work includes interviews, cost data, test plans, production measures, and analyses by defense and contractor officials.

## What GAO Recommends

GAO recommends that DOD (1) make a new, comprehensive, and independent assessment of the costs and schedule to complete the program, including military construction, JSF-related expenses in other budgets, and life-cycle costs; and (2) reassess warfighter requirements and, if necessary, defer some capabilities to future increments. GAO also suggests that Congress consider requiring DOD to establish a management tool to help Congress better measure the program's progress in maturing the weapon system in a variety of areas to include cost estimating, testing, and manufacturing.

View [GAO-10-382](#) or [key components](#). For more information, contact Michael J. Sullivan at (202) 512-4841 or [sullivanm@gao.gov](mailto:sullivanm@gao.gov).

## JOINT STRIKE FIGHTER

### Additional Costs and Delays Risk Not Meeting Warfighter Requirements on Time

#### What GAO Found

The JSF program continues to struggle with increased costs and slowed progress—negative outcomes that were foreseeable as events have unfolded over several years. Total estimated acquisition costs have increased \$46 billion and development extended 2 more years, compared to the program baseline approved in 2007. DOD leadership is now taking some positive steps which, if effectively implemented, should improve outcomes and provide more realistic cost and schedule estimates. Officials increased time and funding for system development, added 4 aircraft to the flight test program, and reduced near-term procurement quantities. Restructuring is not finished and further cost growth and schedule extensions are likely. The program is at risk for not delivering aircraft quantities and capabilities on time. Dates for achieving initial operational capabilities may have to be extended or some requirements deferred to future upgrades. Aircraft unit costs will likely exceed the thresholds established by the statutory provision commonly referred to as Nunn-McCurdy and may require DOD to certify the need for the JSF to Congress. Program setbacks in costs, deliveries, and performance directly affect modernization plans and retirement schedules of the legacy aircraft the JSF is slated to replace.

Manufacturing JSF test aircraft continues to take more time, money, and effort than budgeted. By December 2009, only 4 of 13 test aircraft had been delivered and labor hours to build the aircraft had increased more than 50 percent above earlier estimates. Late deliveries hamper the development flight test program and affect work on production aircraft, even as plans proceed to significantly ramp-up annual procurement rates. Some improvement is noted, but continuing manufacturing inefficiencies, parts problems, and engineering technical changes indicate that design and production processes may lack the maturity needed to efficiently produce aircraft at planned rates. The independent manufacturing review team determined that the planned production ramp rate was unachievable absent significant improvements.

Although restructuring actions should help, there is still substantial overlap of development, test, and production activities while DOD continues to invest in large quantities of production aircraft before variant designs are proven and performance verified. Slowed by late aircraft deliveries, technical problems, and low productivity, the flight test program only completed 10 percent of the sorties planned during 2009. Other technical challenges include (1) relying on an extensive but largely unproven and unaccredited network of ground test laboratories and simulation models to evaluate system performance; (2) developing and integrating very large and complex software requirements; and (3) maturing several critical technologies essential to meet operational performance and logistical support requirements. Collectively, testing and technical challenges will likely add more costs and time to development, affecting delivery of warfighter requirements and hampering start up of pilot and maintainer training and initial operational testing.