



Highlights of [GAO-06-356](#), a report to congressional committees

### Why GAO Did This Study

The Joint Strike Fighter (JSF) is DOD's most expensive aircraft program. The program represents 90 percent of the remaining planned investment for recapitalizing DOD's aging tactical aircraft fleet.

GAO is required by law to review the program annually for 5 years, beginning in fiscal year 2005. This is our second report and GAO assessed the program's acquisition approach—in terms of capturing knowledge for key investment decisions—and identified an alternative to improve outcomes.

### What GAO Recommends

The Congress should consider delaying authorizations and appropriations for JSF procurement until a new business case is developed and flight testing demonstrates the design and integrated mission systems work. GAO included this matter for consideration because DOD did not plan to make changes as a result of recommendations.

GAO is recommending that DOD delay investing in production until flight testing shows that the JSF performs as expected, and that the program develop a plan, consistent with DOD's preferred policy, to adopt an evolutionary approach that limits new content for each increment to proven technologies and design. DOD partially concurred, but believes that its current practices achieve our recommendations' objectives.

[www.gao.gov/cgi-bin/getrpt?GAO-06-356](http://www.gao.gov/cgi-bin/getrpt?GAO-06-356).

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

## JOINT STRIKE FIGHTER

# DOD Plans to Enter Production before Testing Demonstrates Acceptable Performance

### What GAO Found

DOD is investing heavily in procuring JSF aircraft before flight testing proves it will perform as expected. For example, the JSF program plans to produce 424 low-rate initial production aircraft, at a total estimated cost of more than \$49 billion, by 2013—the same time at which the program plans to complete initial operational testing. Producing aircraft before testing demonstrates the design is mature increases the likelihood of design changes that will lead to cost growth, schedule delays, and performance problems. Because the program will lack key design and testing knowledge, DOD plans to use cost reimbursement contracts to procure early production aircraft. This type of contract places a substantially greater cost risk on DOD and the taxpayers. Confidence that investment decisions will deliver expected capability within cost and schedule goals increases as testing proves the JSF will work as expected.

**Overlap of Production Investments and Testing**

	2007	2008	2009	2010	2011	2012	2013
Cumulative production investment (in billions of dollars)	\$1.5	\$4.9	\$11.7	\$18.7	\$26	\$36.9	\$49.3
Cumulative aircraft	5	23	70	126	190	291	424
Percentage of flight test program completed	1%	3%	13%	35%	56%	77%	98%

**Limited knowledge gained from flight tests** **More knowledge gained from flight tests**

*Increasing confidence in investment outcomes*

Source: DOD (2005 data); GAO (analysis and presentation).

At the same time, the JSF program has not adopted an evolutionary approach to acquiring the aircraft—despite DOD policy that prefers such an approach. Instead, the JSF program has contracted to develop and deliver the aircraft's full capability in a single-step, 12-year development program—a daunting task given the need to incorporate the technological advances that, according to DOD, represent a quantum leap in capability. DOD's buying power has already been reduced. Since initial estimates, program acquisition unit costs have increased by 28 percent, or \$23 million. Development costs have increased 84 percent, planned purchases have decreased by 535 aircraft, and the completion of development has slipped 5 years, delaying delivery of capabilities to the warfighter. With more than 90 percent of the JSF investment remaining, DOD officials have the opportunity to adopt a knowledge-based and evolutionary acquisition strategy that would maximize DOD's return on its investment. The acquisition approach used for the F-16 fighter, the Air Force's JSF predecessor, could provide a model for delivering JSF capabilities to the warfighter sooner and recapitalizing tactical aircraft forces more quickly while lowering risk. The F-16 program successfully evolved capabilities over the span of about 30 years, with an initial capability delivered to the warfighter about 4 years after development started.