

Joint Strike Fighter (JSF) Alternate Engine *Background Information*

In 1996, the Department of Defense began the JSF F136 alternate engine program at the direction of Congress. Beginning with the fiscal year 2007 budget request, DoD recommended its termination. Congress opted to continue development of the F136 engine. Congress also directed DoD to develop a business case analysis of alternate engine acquisition strategies for the JSF program.

In March 2007, DoD delivered an extensive cost-benefit analysis report to Congress. At that time, the report found that the potential life-cycle cost savings from a competitive F136 engine were not compelling and estimated that the alternate engine would cost an additional \$1.2 billion in net present value.

Since 2007, Congress has provided an additional \$1.3 billion for continued development of the F136 engine, despite DoD's recommendation to terminate the program. Even after factoring in this additional funding, DoD estimates that the engine still requires a further investment of \$2.9 billion to be fully competitive.

The F136 alternate engine is currently three to four years behind in development compared to the current engine program, meaning the \$2.9 billion additional investment covers the cost to finish its development, conduct directed buys to prepare the F136 engine for true competition beginning in FY 2017 and create the necessary logistics support structure to operate and sustain the alternate engine on deployed JSF aircraft.

A 2010 update of the 2007 cost-benefit analysis concluded, through very optimistic assumptions, that the second engine is currently at the break-even point in net present value. Thus, there is no guarantee that \$2.9 billion in near-term investment will be offset by long-term savings. In addition, the Department uses single source engine providers for other tactical aircraft (F-22 and F/A-18), and doing so for JSF does not pose unacceptable risk.

DoD is firm in our view that the interests of the taxpayers, our military, our partner nations, and the integrity of the JSF program are best served by not pursuing a second engine. We have reached a critical point in this debate where spending more money on a second engine for the JSF is unnecessary, wasteful, and simply diverts precious funds from more pressing DoD priorities.

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SUMMARY

- DoD is firm in our view that the interests of the taxpayers, our military, our partner nations, and the integrity of the JSF program are best served by not pursuing a second engine.
- We have reached a critical point in this debate where spending more money on a second engine for the JSF is unnecessary and simply diverts precious funds from more pressing DoD priorities.
- There is no guarantee that having two engines will create significant enough long-term savings to outweigh the significant near-term investment.
- The risk of a single engine is manageable and consistent with past acquisitions.

Since 2007, DoD has recommended termination of the F136 alternative engine program. Despite this, Congress provided an additional \$1.3 billion for continued development from FY 2008-10. DoD estimates \$2.9 billion is required to take the alternate engine to fully competitive procurement in FY 2017.

Additional costs and the burden of maintaining two logistical systems are not offset by the potential savings generated through competition. A 2010 update of the 2007 DoD cost-benefit analysis concludes that the second engine is at the break-even point in net present value. This conclusion is based on several optimistic assumptions that were biased *in favor* of competition:

- That the competition would occur in 2014 rather than the current estimate of 2017.
- That the second engine will immediately match the current engine's prices after entering the competition and will continue to do so for the duration of the competition.
- That there would be an efficient mix of engines in the competitive buy. Split or shared buys do not historically produce the purely competitive behaviors assumed in the analyses.

A single engine is not a new approach and does not create unacceptable levels of risk. The Department maintains two current tactical aircraft programs, the F-22A and F/A-18E/F, which both utilize a single engine provider. Both programs have enviable safety records, and the Department is satisfied with the propulsion systems for both programs. Risks associated with propulsion systems have largely been mitigated over the past 20 years due to advancements in engine design, testing, and production. Engine systems are tested more thoroughly than in the past and have proven to be safer, with far greater reliability than past engine programs from the 1970s and 1980s.

Challenges during the development phase are expected. It is true that the current engine has faced some challenges in its development phase. The Department has taken significant steps to address these challenges, and the current engine is now a more efficient and effective system. However, there is no guarantee that a second engine program will not face the same challenges, and the F136 engine is already three to four years behind in its development phase.