The Pratt & Whitney F135 Engine:
The Right Answer for the F-35 Joint Strike Fighter (JSF) - November 2010

The Bush administration opposed this engine. The Obama administration opposes it. We have recommended for several years now against funding this engine, considering it a waste of money…To argue that we should add another $3 billion in what we regard as waste & frankly, I don't track the logic. *Secretary of Defense Robert Gates*, ABC News, 7/28/10

No Military Requirement

The Commander in Chief and the civilian and military leadership of the Pentagon have concluded that an extra engine is unnecessary. They have canceled funding for this program because there is no military requirement. The current Chief of Naval Operations supports a single engine because, as he says, "On a carrier, space matters." The F136 backup engine will cost an additional $2.9 billion to complete and is 5-7 years behind the F135 in development.

Competition Determined the Winner

Competition was fair and square. Competition for the JSF engine happened at the contractor level when competing airframers selected a P&W engine under government rules. This process of selecting subsystems, including the engine, as part of the overall weapon system, is standard during concept demonstration. The DoD has concluded that further competition will NOT save taxpayer dollars.

Single engine sources are the norm. No other military aircraft developed in the past three decades has been procured with multiple engine suppliers. There is no extra engine for the F-22, F/A-18, C-17 or the BlackHawk and Apache military helicopters.

Lower Cost and Higher Quality

Independent experts agree: An extra engine won't save money. 2 of 3 congressionally mandated studies (IDA and CAIG) concluded that an extra engine will not lower cost or save taxpayer dollars. A third (GAO) said savings could be found but only under highly favorable conditions that no longer exist. Additionally, the Cost Assessment Program Evaluation (CAPE) report maintains that another $2.9 billion is needed to get the F136 to true competition in 2017, three years later than previously planned.

Two engines will increase costs, not lower them. An extra engine won't lower costs because taxpayers must pay to develop both engines as well as pay for two sets of parts, two production/maintenance lines, additional personnel and training. Subsequent improvements will cost twice as much.

Jobs and Industrial Base Argument Favors the F135

An extra engine does not equal U.S. jobs. If an extra engine is funded, 40% of the extra engine will be built overseas in the U.K. This means we will lose U.S. jobs.

Extra engine contractor already holds substantial military engine contracts. GE has more than 70% of the U.S. military engine market share and has extensive military and commercial engine programs decades into the future including sole source monopolies on the F-18 and BlackHawk and Apache helicopters.

The F135 is in production, in the air and the only engine powering the F-35 today.

- **The F135 engine has accumulated more than 20,000 ground test hours.**
  - **F136 claims 1,000 hours.**
- **P&W has delivered ten F135 production engines.**
  - **F136 = none.**
- **The F135 has powered 500 flight tests and accumulated more than 740 flight test hours.**
  - **F136 = none.**
- **F135 has powered all 12 flawless vertical landings and the F135 engine is demonstrating excellent reliability, performance and thrust response.**
  - **F136 = none.**
- **F135 engine core is common with the F119 powering the USAF's F-22 Raptor. The F119 engine has accumulated more than 375,000 hours.**
  - **F136 is built on a new concept, not proven.**

F135 program focused on cost reductions. All three F135 variants will be certified for production by the end of 2010 and Pratt has already delivered 10 production engines to the Pentagon. Now the F135 program is focused on cost reduction. The latest contract proposal includes a double-digit percentage cost reduction per F135 engine. Pratt's F119 engine (on the F-22) achieved a 37% cost reduction from development to production ***without*** an extra engine and the F135 will achieve similar cost savings.

Several international partners oppose second engine. Several international JSF partners have opposed the concept of two engines. And, most have taken the position that they would not be willing to fund a 2nd engine if it threatened program cost targets, or in any way jeopardized the overall program, which it already has and will continue to do so.

Greater Safety and Reliability

Proven vs. theoretical. The F135 is performing exceptionally well in flight test and has retired nearly 100% of program risk. It has achieved more than 20,000 test hours, powered a vertical landing, received government certification, and delivered the first lot of production engines to the Pentagon. The F135 is a derivative of the F119, powering the F-22 which has an unmatched safety record, offering a significant single engine safety advantage compared to the unproven extra engine. The extra engine has no pedigree, has fewer than 1000 hours of testing, continues to suffer setbacks on the test stand and has its toughest challenges ahead of it. It is 5-7 years behind the F135 in development and has yet to power a plane in flight.

Talk of fleet wide groundings are scare tactics. There have been no such groundings in the last 30 years. "The reality is that the F-22 and the F-18E/F are single-engine airplanes…it's because we collectively in the defense community, have become comfortable with the reliability and so on of those respective engines, one of which is a predecessor to the 135." -- Air Force Chief of Staff Schwartz