ISN
ETH Zurich

06 Apr 2006

Getting the Joint Strike Fighter off the ground

By Rashunda Tramble for ISN Security Watch (06/04/06)

The US military is the proud owner of a fleet of military fighter aircraft that is, according to some in the industry, slowly becoming out of date.

According to reports, the average age of a fleet, depending on the branch, runs from seven and a half to 13 years. Retirement age for a warplane can hover around 22 years.

The US Department of Defense (DOD) touts the F-35, also known as the Joint Strike Fighter (JSF), as an aircraft that will move the military's aging fleet up to today's standards.

Since the JSF program started in 1996, Congress has approved nearly US$25 billion for development, making the JSF the most expensive aircraft acquisition initiative to date.

Aerospace manufacturer Lockheed Martin is producing the fighter. The JSF project is special in that it is being funded by a consortium of nations. The US and Britain are the main customers. Italy, the Netherlands, Turkey, Australia, Norway, Denmark, and Canada are also partially funding the project. This arrangement should help offset the high cost of development.

Three variations of the aircraft are scheduled to replace fighters from various agencies: The marine version of the F-35 is planned to replace the AV-8B, which has short take off and landing capabilities; the navy version is being designed to land on carrier platforms, replacing the F-14; and the air force version will take over for the F-16, which is basically a dogfighter.

According to DOD spokeswoman Major Susan Idziak, the department is happy with the progress the JSF program has made.

"The DoD is very pleased with the significant progress the Joint Strike Fighter has made since 2000. The first JSF has finished production and has begun ground testing, which will lead to the first flight of the JSF late this year.

"Numerous other JSF aircraft are in various states of production," Idziak told ISN Security Watch.

But if the DOD is happy with the program's progress, the US Government Accountability Office (GAO), the auditing and investigative arm of the US Congress, is not.

In a report issued in March this year, the GAO concluded that the US Congress should withhold

pouring more money into the program until the JSF proved it could do what Lockheed Martin and the DOD said it could do.

"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," the GAO said.

According to the report, the DOD plans on ordering 424 "low rate" initial production JSF aircraft before initial testing proves if the design works.

The total cost for the experiment - US$49 billion.

Ironically, the GAO made the same recommendations in a similar report about the project six years ago.

ISN Security Watch asked Christopher Hellman, Defense Budget and Policy Analyst for the Center for Arms Control and Non-Proliferation, if procuring strike fighters, or any other type of aircraft, before testing was a normal procedure. He said the method was known as "concurrency".

"The idea is that it takes so long to develop and field a new fighter that [â¦] the Pentagon wanted to devise some way to get them into the field quicker," Hellman stated.

Take the F-22 Raptor as an example of how long it can take to put a warplane in service. The high maneuverability stealth fighter has been in development for over 20 years.

The first squadrons featuring the aircraft are just now forming.

"In my mind it [concurrency] is a flawed way to purchase an aircraft - [a method] that has failed miserably in a couple of cases. Most prominently in our B-1 bomber program, not the "stealth" bomber - that's the B-2."

Haven't heard that much about the B-1? Hellman says there is a good reason. "It has never worked as advertised, and concurrency is one of the big reasons. The US Air Force prefers to use 50-year-old B-52s [over] the B-1."

According to the GAO report, the cost of each JSF has climbed 28 per cent since initial estimates to the tune of US$23 million. Development costs have jumped 84 per cent, but planned purchases have gone down by 535 planes.

In other words, the DOD is getting less for more money.

The report also says that the JSF program is now five years behind schedule.

Not only did the GAO suggest that the DOD delay investing any more money into the JSF program, it also said that the DOD should go back to the drawing board with its JSF business plan.

"In March 2005, we reported the JSF's original business case was unexecutable and recommended that the DOD establish an executable program consistent with best practices and DOD policy.

"We also recommended that this new business case be accompanied by a knowledge-based acquisition approach - an approach that ensures attainment and use of demonstrated product knowledge before making future investments," the GAO said.

The DOD has an example of an approach that was deemed successful by the GAO, the F-16. It says

that the program for that fighter produced its first plane after only four years, and then used the next 3 decades to improve it.

The DOD reiterated to ISN Security Watch its response to the GAO report. Major Idziak stated: "The Government Accountability Office is an important part of our government review and oversight process. GAO studies such as the one you have inquired about help ensure the DoD has not overlooked an important aspect of program management. As our response included in the GAO report points out, the DoD remains confident that the JSF program already incorporates the three recommendations of the GAO."

ISN Security Watch also interviewed John Smith, communications manager for the JSF program at Lockheed Martin. Smith took issue with the GAO's recommendations and stated not only that they were financially unsound, but would put the project schedule back even further as well.

"The GAO's recommendations on incremental development and acquisition would be cost-prohibitive, dwarfing the cost risks the GAO report alleges," Smith said. "The GAO plan also would delay significant 5th Generation fighter capabilities from reaching our forces for ten years or more.

"The cost to implement GAO's version of incremental development and acquisition would be so prohibitive it would dwarf the alleged cost risks the GAO report asserts," he continued.

Smith also said that a lot of the technology in the JSF had already been tested in the F-22, and therefore, had already been proven to work.

"Lessons learned from F-22 and other recent aircraft development programs have been adopted by F-35 to drive down technical risk even more."

"Many of the F-35's baseline avionics and stealth technologies were matured long ago on the F-22, and are simply being updated for use on the F-35. The F-35 and F-22 share the same engine core, which has logged hundreds of thousands of successful flight hours," Smith added.

He says that Lockheed will know 80 per cent or more about the system even before actual testing begins.

"The GAO report implies flight tests results come as a big bang at the end of the program when in fact we learn as we go from each ground and flight event."

According to Smith, by the time the armed services takes delivery of the first aircraft from the production line in 2009, the JSF will have logged close to 1,400 flights and 2,000 hours of flight testing.

Lockheed believes that that is more than enough to keep its faith in the DOD’s JSF plan.

Since the GAO report is not binding, the US Congress can decide whether to follow the recommendation to clip the program's wings or not. Smith believes that the GAO's comments will not have that much of an impact on the body.

"The GAO report is just that, a report," he said.

Rashunda Tramble is an ISN Security Watch reporter and editor based in Zurich.