THE MOST EXPENSIVE WEAPON EVER BUILT

The Pentagon's $400 billion F-35 is running into turbulence just as deeper budget cuts loom

By Mark Thompson
Marine Major Ari “Walleye” Liberman was uncharacteristically modest for a Navy SEAL turned fighter pilot. He had just landed an F-35—one of the 2,457 jets the Pentagon plans to buy for $400 billion, making it the costliest weapons program in human history—at its initial operational base late last year. Amid celebratory hoopla, Liberman received a request to give a thumbs-up for the camera that sunny day in Tuma, Arizona. “No, no, no,” he demurred with a smile.

Liberman’s reticence was understandable. For while the Marines held his arrival as a sign that their initial F-35 squadron is now operational, there’s one sticking point: “It’s an operational squadron,” a Marine spokesman said. “The aircraft is not operational.”

The F-35, designed as the U.S. military’s leathal hunter for 21st century skies, has become the hunted, a poster child for Pentagon profligacy in a new era of tighter budgets. Instead of the stars and stripes of the U.S. Air Force emblemized on its fuselage, it might as well have a bull’s-eye. Dealership stickers are plagued with problems. It hasn’t yet dropped or fired weapons, and the software it is set to go to war remains on the drawing board.

That’s why when Liberman landed his F-35 before an appreciative audience, including home-state Senator John McCain, he didn’t demonstrate its most amazing capability—landing like a helicopter using its precision-cast titanium thrust-vectoring nozzle. That trick remains a F-35 perk for operational plane drivers like him.

The price tag, meanwhile, has nearly doubled since the original $35 billion. Production delays have forced the Air Force and Navy to spend at least $5 billion to extend the lives of existing planes. The Marine Corps—the cheapest service, save for its costly jump jets—which take off and land almost vertically for its pet aircraft carriers—has spent $3.5 billion on 74 used British AV-8B jets for its new, upstairs fleet. Harrier flyers using their version of the F-35 truly comes online. Allied governments are increasingly weighing alternatives to the F-35.

But the accounting is about to get even worse as concerns over spending on the F-35 threaten other defense programs. On March 13, if lawmakers cannot reach a new budget deal, the Pentagon faces more than $100 billion in spending cuts in the form of sequestration, which translates into a 10% cut in projected budgets over the coming decade. Two years ago, the White House predicted that these cuts would be so onerous to defense-hawk Republicans that they would never happen. But the GOP is now split, with a growing number of members who are more concerned about the deficit than defense.

“We are spending maybe 45% of the world’s budget on defense. If we drop to 30%, would we have to worry about some kind of invasion?” asked Representative Justin Amash, a Michigan Republican, in response to the F-35 cancellation announced last month.

“The Pentagon’s budget is too large,” he said.

The resulting cutter child was a compromise, not optimum for any one service but good enough for all three. Neither the Air Force nor the Navy liked itsubby design. The F-35C’s squat fuselage puts its tailhook close to its landing gear (f), concentrating its heat signature (g), making it tough to grab the arresting cable on an aircraft carrier. Its short range means that it will have to sail out of range of ships if the F-35Cs are to play a role. It can fly without its weapons, but that requires adding external fuel tanks, which erases the stealthiness that is its prime warfighting asset.

Cramming the three services into the program reduced management flexibility and put the taxpayer in a fiscal bind. Each service had the leverage generated by threatening to back out of the program, which forced Congress to put its foot down. But the Air Force leadership refused to consider such options.

Yet if the Navy and, young as they are, with the Air Force, the F-35 was set to join the Marines. “This is a jobs program for Marine aviation,” said retired General Richard B. Buehrer, president of the Institute of Marineotech, a $10 billion each.

We could produce a committee design that is good for everybody is fundamentally wrong,” he scoffed at the criticism demand for a plane that can land vertically. “The idea of landing on a beach and supporting your troops close up from some improvised airfield, a la Guadelacanal, is not going to happen.”

Pentagon Sticker Shock

The Marines, Air Force and Navy are buying 459 F-35s at $83 billion for $252 billion, or $155 million each. The Pentagon’s price tag is $26 billion on missile defense and its elements, like the 23-story tall sea-based X-band radar.”

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hand does what you want it to do. And if you don’t want it to do anything, it stays where you left it.” That makes it easy to fly. “I’m watching the emerald-colored sea up against the white sand,” Tomassetti says of his flights from Florida’s Eighth Air Force Base along the shore of the Gulf of Mexico. “I remember lots of flights in other airplanes where I never had time to do anything like that.”

But military technology has been moving away from manned fighters for years. Drones, standoffs weapons and GPS-guided bombs have cut the utility of, and need for, such short-endurance planes. Their limits become even more pronounced amid the Pentagon’s pivot to the Pacific, where the tyranny of distance makes the F-35’s short combat radius (456 miles for the Marines, 534 for the Air Force, 615 for the Navy) a bigger challenge.

Computers are key to flying the plane. But instead of taking advantage of simplicity, the F-35 is heading in the other direction: its complexity can be gleaned from its 24 million lines of computer code, including 9.3 million on board the plane. That’s more than six times as much as the Navy F-18 has. The F-35 computer code, government auditors say, is “as complicated as anything on earth.”

Computers also were supposed to replace most prototyping and allow all three kinds of F-35 to roll off the Texas assembly line at the same time, just as Avalon, Camry and Venza are rolling out of Toyota’s huge Kentucky plant. “Advances in the technology, in our design tools and in our manufacturing processes have significantly changed the manner in which aircraft are designed and built today,” Paul Kaminski, the Pentagon’s top weapons buyer, said in 1997. But Lockheed is no Toyota.

The world’s most valuable hangar

The 25,000 components of the F-35 are put together at Lockheed’s facilities in Fort Worth.

Improved sensors and computing are enabling stealth’s value every day, says Admial Jonathan Greenert, the chief of naval operations. Even if they warn, they’ll give potential foes “targetable information” on stealth platforms.

The Air Force feared “additional fourth-generation fighter acquisitions as a direct threat to fifth-generation fighter programs,” Air Force Lt. Col. Christopher Nersi, a veteran F-35 program manager, wrote in the November-December 2011 issue of the service’s Air Force & Space Power Journal. “It refusal to reconsider buying new fourth-generation F-16 and R-26 in lieu of some F-35s “threatens to reduce the size of the Air Force’s fielded fighter fleet to dangerously small numbers, particularly in the current fiscal environment.”

A stealthy jet requires sacrifices in range, flying time and weapon-carrying capability—the hat trick of aerial warfare. All those factors have played a role in the fate of the Air Force’s F-22 fighter, the nation’s only other fifth-generation warplane. It has been sitting on the shelf around the globe for seven years, pawning at the tarmac as the nation waged wars in Afghanistan, Iraq and Libya. Yet the F-22, built to fight wars against enemies that have yet to materialize, has yet to fly a single combat mission.

If sequestration happens March 1, F-35 officials have made clear they will be forced to slow production and delay tests. Both steps will make each plane that is ultimately bought more expensive. But thanks to 4.8 billion in Pentagon contracts for 51 planes pushed out the door barely 100 hours before the original Jan. 2 sequestration deadline, much of the program will continue on autopilot.

The F-35 program has built up a good buffer by getting the most recent lot of aircraft awarded in time, says Todd Harrison, a defense-budget expert at the independent Center for Strategic and Budgetary Assessments. “That means Lock heed and all the subcontractors have a backlog of work that won’t be affected by sequestration, so they can continue working as planned for the time being.”

Apparently the F-35 may end up being pretty stealthy after all. 

'There’s always this sexual drive for a new airplane on the part of each service. Persistent, urgent and natural.' — TOM CHRISTIE, THE PENTAGON’S FORMER CHIEF WEAPONS TESTER