Aperture

By John A. Tirpak, Executive Editor

The full buy of F-35s; Updated budget numbers; Overhaul DOD; What the services should do; What's next for ISR ....

THE F-35 PRICE IS GOING DOWN

Set aside stealth, weapons, and electronic warfare for now: The chief thing the F-35 must do to survive the extremely hostile environment it's fighting in—the budget arena—is get cheaper. Recent events indicate that's happening, and just how much lower the F-35 price will get should become clear this month.

In July, the F-35 Joint Program Office announced it had a handshake deal with prime contractor Lockheed Martin on the sixth and seventh low-rate production lots of the F-35, totaling 71 aircraft. Not only had the negotiations been concluded in a fraction of the time required for previous lots, but Lot 6 was roughly four percent cheaper than Lot 5, and Lot 7 was another four percent cheaper than Lot 6. The two lots included airplanes for the US, Australia, Italy, and Norway.

The practical effect of the cost reduction was huge: The Pentagon had expected it would have to cut as many as five aircraft out of each lot to live within sequester constraints. The full buy wouldn't have been possible without the lower unit costs for the airplanes and "lower prices on a number of smaller contracts," JPO spokesman Joseph DellaVedova said.

The deal, estimated to be worth about $7 billion, didn't include the engines, which are supplied by Pratt & Whitney. However, in late August, the JPO announced a deal with the enginemaker to supply Lot 6 motors at lower prices, as well. The common-configuration F135 engines in the F-35A and C models—the Air Force and Navy versions—went down by 2.5 percent versus the previous lot; the more complex version that powers the Marine Corps short takeoff and vertical landing F-35B variant went down in price "roughly 9.6 percent" versus the previous lot, the JPO reported. The 36 engines in Lot 6 are expected to cost about $1 billion.

In a statement accompanying the news on the airframes, F-35 program chief Lt. Gen. Christopher C. Bogdan said while there's still more work to be done at getting F-35 costs down, the deals are "proof the cost arrow is moving in the right direction."

Lockheed Martin photo by Paul Weatherman

A handshake deal for the full buy.

With regard to the engine contract, Bogdan said it represents a "fair deal" for both Pratt & Whitney and DOD and shows the Defense Department and the contractors are "working together—in each successive contract—to lower costs for the propulsion system."

The Lot 6 and 7 news was just the warm-up, however. In August, Bogdan privately informed the Senate Armed Services Committee about the cost to buy and operate the F-35 fleet over 55 years. Previous estimates had made national headlines because they pegged the number at over the trillion-dollar mark, but Bogdan's August estimate reduced that prediction to $857 billion—a 22 percent drop.

In an explanation included with those answers for the record—leaked to the press—Bogdan said the new lower estimate was informed by several years of real-world experience flying F-35s both in flight test and initial training at Eglin AFB, Fla., coupled with the declining purchase prices and other considerations. The report was not made public because the Pentagon's official Selected Acquisition Reports, which are the official numbers, don't come out until this month. Pentagon officials said the old number—the trillion-dollar figure—hadn't been updated for two years.

Press reports quoting Bogdan's estimate said the unit cost of F-35s could decline by as much as $35 million each just over the next five years, at which point full production is to start. The Air Force F-35A variant could go down from $120 million to $85 million per aircraft—less expensive than the unit prices quoted for fourth generation fighters like the F-15, F-16, F/A-18, and Eurofighter Typhoon in recent international contests.

Pentagon acquisition chief Frank Kendall weighed in on the Bogdan estimates at an early September symposium, trying to temper the excitement about deep F-35 cost reductions.

"I don't want to be overly optimistic and I don't want to be overly conservative," he told reporters after addressing the IDEEA Common Defense symposium in Washington, D.C.

He said his office is "looking at" Bogdan's numbers and will issue its own estimates later this month after a meeting of the Defense Acquisition Board, the Pentagon's top weapon-buying panel, which Kendall chairs. The DAB holds authority over how fast a program progresses, given its performance. The new SAR numbers will include the program office numbers and a fresh evaluation from DOD's Cost Assessment & Program Evaluation office.

"I do expect it to come down," Kendall said of the F-35 cost estimate. "I don't know if it will come down as much" as Bogdan's estimate, but "he has a basis for it." Kendall cautioned that any number is conditional on the assumptions made and the "too many different ways to calculate it." He expects to find some middle-ground estimate between Bogdan and the CAPE's new figures "and see what we want to use as an official estimate."

THE UNMANNED FUTURE

The future military is going to see an explosion of applications for unmanned systems, ranging from today's remotely

piloted aircraft for intelligence, surveillance, and reconnaissance to sailorless submarines, robotic armored vehicles, supersonic fighters, unmanned cargo aircraft—possibly of the lighter-than-air variety—unmanned tankers, and dozens of other missions not yet conceived, a top Northrop Grumman official said in August.

Coming soon will be ISR platforms at "extreme altitudes," as well as "swarming" vehicles and groups of combat aircraft under the direction of a single operator. The future RPA fighters will have the ability to turn at 25Gs, he predicted.

The look ahead was provided by Thomas E. Vice, Northrop Grumman's aerospace systems sector president. The company makes the Global Hawk and Triton ISR aircraft. Recently its crewless X-47B experimental aircraft flew off and onto an aircraft carrier using the standard catapult and arresting wires. Northrop Grumman has long been associated with RPAs, due to its Teledyne Ryan heritage and ongoing affiliation with the ISR mission.

All the services are looking at RPAs as ways to conduct missions more effectively and less expensively than are now performed by manned platforms, Vice said, "and this is going to continue."

The remarks are optimistic, however, in the face of forecasts from senior defense leaders that new starts are going to be hard to come by in the coming years. At a conference in August, Dyke D. Weatherington, director of unmanned warfare and ISR at the Pentagon, predicted that fully $1 billion will come out of near-term RPA projects, out of a gross Pentagon budget of more than $45 billion for aircraft in the Fiscal 2015 budget now being developed.

"We will see reductions" in unmanned programs continue, Weatherington said.

Vice, however, was undeterred, saying that just as answering commercial markets has helped prop up defense in recent years, commercial demand for unmanned systems is about to take off. He recommended that the Federal Aviation Administration, for example, establish civilian RPA test facilities for such aircraft, which will come to be embraced by law enforcement, agriculture, and other sectors of the economy as a lower-cost alternative to manned systems. He also urged the FAA to step up its efforts in figuring out how to certify RPAs for operation over civilian areas. So far, he said, only Global Hawk has been given waivers to make such overflights, but more are needed to let the industry bloom.

The foreign market demand for both military and commercial unmanned systems is also "catching up" to the requirements of the US government and industry, he said.

TIME FOR A NEW KEY WEST

The stars have aligned for a meaningful, wholesale overhaul of the nation's military, and the upcoming Quadrennial Defense Review could be the vehicle to achieve it. But unless the service chiefs take personal hold of the process, the US military is likely to come out of the QDR as just a shaved-down—and much more irrelevant—force.

So suggested Mark Gunzinger, a senior fellow at the Center for Strategic and Budgetary Assessments. In a talk for the Air Force Association's Mitchell Institute for Airpower Studies, Gunzinger said the convergence of deep budget cuts, coupled with the end of the long war in Afghanistan and the emergence of new kinds of global threats, make this QDR a golden opportunity to make real change.

Even absent sequestration, the services will see such reduced funds in coming years that they may have "no choice" but to set priorities that may not align with the traditional division of the Pentagon budget into rough thirds for the Army, Navy/Marine Corps, and Air Force, Gunzinger said.

Illustration by Erik Simonsen

Emphasize reach—such as the future Long-Range Bomber.

Left to the traditional institutional competition between the services, however, the one-third breakdown is exactly what will come out of the QDR, Gunzinger said.

He posited a "new Key West" agreement, harking back to the 1947 deal that created the Department of Defense, the Air Force, and the CIA, as a model for what must happen now if US military forces are to remain credible and relevant against emerging threats. The top leaders, the Secretary of Defense, and their deputies should sit down, away from their constituencies, and hash out just what America must be able to do, militarily, and accept new priorities, Gunzinger asserted.

This need not mean that some services are winners and others losers, Gunzinger argued. The Air Force and Navy have begun anticipating the need for future deeper cooperation and avoidance of duplication by pursuing the AirSea Battle concept. The Army has seen ASB as a threat, but Gunzinger suggested there are many ways the Army could be an equal partner in defeating the rising anti-access, area-denial situation.

The Army, Gunzinger said, could put more emphasis on missile defense, crucial to protecting bases worldwide, and more on its own tactical ballistic missiles. It should also and exploit new technologies, such as directed energy and "rail guns," to ensure the US can preserve its ability to go wherever it needs to.

The Air Force should probably "rebalance" its forces to put greater emphasis on long-range attack—with a new bomber and cruise missiles—and de-emphasize shorter-range fighters, he argued. More remotely piloted aircraft and stepped-up efforts to "dominate the electromagnetic spectrum" will be crucial for USAF, since "that's where they'll be fighting."

The Navy will need to adjust its carrier air wings to include more RPAs, exploit cyber and directed-energy weapons, develop better and new kinds of precision guided munitions, and make its submarine "modular"—reconfigurable for a variety of new missions.

The Marine Corps facility with vertical takeoff and landing—in the form of the F-35 and V-22—will help "complicate" any enemy's calculus of where it needs to attack US bases, Gunzinger observed.

The bottom line, though, is that new threats, the end of the war, and severely limited resources mean the services must exact every drop of fighting capability out of the forces they retain, and choices about what goes, what stays, and what is added are not optional.

"If everything's a priority, nothing is," he said. ■