



Embraer's Super Tucano (here) is currently in service with Brazil and Colombia, and has been ordered by other South American countries.

into even more savings from reduced air tanker support sorties.

Moreover, say USAF officials, the service could use light strike aircraft as a bargaining tool in pursuit of partnerships with nations that have no need for, or money to buy, super high-performance jet fighters.

"Part of what we're trying to do is back away from putting blinders on, and only looking at Iraq and Afghanistan, because there is a global demand for this," Steve Day, the Air Force's deputy director of irregular warfare requirements, said in an interview. The two-seat attack aircraft will provide commanders with greater situational awareness than cur-

The Light Attack Aircraft

In the US-led wars in Afghanistan and Iraq, jet-powered fighters have been a constant presence, striking critical targets and carrying out other missions. Soon, however, the thunderous roar of the jet engine could well be competing with the high-pitched wail of the turboprop.

The Air Force is pondering a return to the kind of light, prop-driven fighters and attack aircraft that carried out vital close air support and counterinsurgency missions in Vietnam and other spots in decades past. The potential shift stems from two major developments.

First, Air Force pilots find themselves dropping fewer and fewer bombs and instead performing more and more "armed overwatch" missions, in which fighters use precision targeting pods to gather and send live, full-motion video to troops on the ground and commanders in operations centers.

Second, a brutally high operations tempo since 2001 has taken a toll on high-performance aircraft, particularly F-15E and F-16 types. One year in Southwest Asia translates into five to seven years' worth of real degradation. Simply put, the jet aircraft fleet is wearing out too swiftly.

These trends, coupled with other factors, have prompted Air Force leaders to re-evaluate the mix of aircraft needed to provide CAS and armed overwatch in irregular conflicts of the future.

The Air Force believes that turboprop-driven light attack aircraft, combined with advanced unmanned aerial vehicles

USAF reconsiders the mix of aircraft needed to provide CAS and armed overwatch in irregular conflicts.

By Marcus Weisgerber

and the fleet of traditional fighters, could help solve the problem. The prospective aircraft, sometimes referred to as OA-X, would be loaded with Global Positioning System links, equipped with laser guided munitions, and rigged with advanced sensors capable of detailed scanning of terrain below.

The infusion of turboprop aircraft could slice billions annually from USAF's operation and maintenance costs, say service officials. In addition to consuming less fuel than jet fighters, the light attack airplanes could fly for hours without the need to refuel, translating

currently provided by single-seat fighters, according to Air Combat Command's "OA-X Enabling Concept."

In a fighter, a pilot's situational awareness is often reduced because one aircraft in a two-ship tasking is frequently getting gas from a tanker while the other performs the CAS mission. "In single-seat fighters, this creates an unacceptable burden of responsibility to low-time, inexperienced wingmen," the ACC document states. In addition to close air support and armed reconnaissance, the OA-X aircraft could perform forward air control, strike coordination and reconnaissance, air interdiction,



Air Tractor, of Texas, has entered the light attack aircraft field as well. Shown here is its AT-802U prototype.



SSgt. Trevor Bradford (l) and SrA. Joshua Woeckener, members of a joint terminal attack controller team, coordinate with aircraft during a training mission.

intelligence-surveillance-reconnaissance, and joint terminal attack controller training if equipped with high-tech sensors. These capabilities could prove useful in Afghanistan, Iraq, and elsewhere.

"In this fight, [what] we need is a bunch of light attack, observation, and transport airplanes, and a bunch of great young lieutenants and captains who are out there [fighting] everyday, working with the ground forces, working with the partner nations, learning this business, and getting really, really good at it," one field grade officer opined. "That will allow us to stabilize some of this massive turmoil that we've seen in our traditional fighter and bomber forces and allow those guys to get better at what they do," the officer said. "I think this is a real opportunity if we embrace it."

Fostering New Relationships

The new airplanes could also find a home in the Air National Guard, which is slated to lose a large number of fighters as the Air Force moves toward a leaner fleet. Partnered with local and state law enforcement agencies and the Department of Homeland Security, the Guard could operate OA-X aircraft for US-based search and rescue, border security, and maritime patrol missions.

While the service expectshawks the new airplane to play a key role in the Air Force's irregular warfare operations, it will also help foster partnerships with developing air services. Some officials see the service turning the attack aircraft over to a partner nation at some point, similar to the way the Air Force gave OV-10 Broncos to the Colombians and Indonesians in the

early 1990s to help combat insurgencies. In some scenarios, a pilot from a partner nation could fly the aircraft with a US airman in the backseat, assisting during the mission, officials claim.

The effort has been met with mixed reactions from blue-suit officials. In April 2008, Col. Gary L. Crowder, then commander of Air Forces Central's Combined Air and Space Operations Center, made a serious pitch for using light attack aircraft for missions over Iraq and Afghanistan and detailed an international partnership building program, similar to what has recently been adopted by senior service leadership. Crowder has spent much of his Air Force career studying irregular warfare and counterinsurgency, similar to the current wars in Afghanistan and Iraq. Crowder's argument, which came at a time when the Air Force was fighting to buy more F-22A Raptors, was met with resistance from service leadership, with some claiming light fighters could become vulnerable to surface-to-air missile attacks.

At that time, numerous Air Force officials refused to discuss the potential for a

light strike program. Those who would, did so only under the condition of anonymity. Much more is being said since Air Force Chief of Staff Gen. Norton A. Schwartz embraced the program soon after taking the service's reins in mid-2008. Schwartz believes the program will work best if the aircraft chosen can fulfill multiple missions, namely pilot training, light attack, and reconnaissance missions.

"My angle on this is, if you can do this in a way that isn't single-purpose, the chances of making it work are much better," the air Chief said. While the Air Force plans to reduce its fighter footprint in 2010, the OA-X aircraft could help keep pilots proficient until a significant number of F-35 Lightning IIs enter service in the next decade, the ACC document argues. "Assignment of pilots to OA-X units" will help assure expertise in a number of missions is preserved within the combat air forces when legacy aircraft are retired, the paper states. "This will enhance the USAF's ability to source F-35 units with properly experienced aircrew it will have fewer of otherwise."

While the program has been fast tracked, the Air Force will not rush the requirements process. Air Force Maj. Gen. David J. Scott—director of operational capability requirements and champion of the OA-X initiative—said in October that the attack program would move more slowly than a separate initiative to buy small mobility aircraft. The service is more familiar with the small cargo haulers, since Air Force Special Operations Command already flies some of these airplanes. However, a flyoff competition for a light fighter is not unlikely, he said in November. "Light attack, I think, is a different animal because we don't have anything off the shelf," Scott said. "There are things that are already built and designed that can do that, but to figure out better which one we want, there will probably be a competition in that one."

In an attempt to speed up the aircraft acquisition process, the service will likely select an in-production platform, at least



The Hawker Beechcraft AT-6B, shown here, is a modified version of the T-6 trainer used by the Air Force and foreign nations.



Photo by Ted Carlsson

Boeing is working on reopening a production line to manufacture OV-10 Bronco aircraft such as this one.

for initial buys, according to Air Force Materiel Command chief Gen. Donald J. Hoffman. "If it's a nondevelopmental [aircraft], it allows us to go enter the process at a later date, at a later phase than having to go through a lot of the bureaucratic processing," he said in September. Currently, the Air Force has plans to buy 15 attack airplanes in Fiscal 2011. Of those, 12 will be combat-coded. A request for information presented to industry this past summer said the Air Force could purchase as many as 100. ACC officials have conducted an OA-X cost competitive analysis and are developing an initial capabilities document, according to Scott. A request for proposal will follow once approval is granted. By spring 2010, "we'll come up with some kind of aircraft that we're going to buy, or the one we're going to need," Scott said.

A number of Air Force officials say they envision the service buying a family of aircraft since the capabilities of one airplane may fit the geographical terrain and mission needs of a particular region of the world better than another. The requirement ultimately "might be three or four airplanes," said one Air Force official about the effort. However, there are no plans to buy multiple aircraft right now, Scott said.

The light fighter initiative could also spur purchases of different aircraft that could address both near- and long-term threats, according to Lt. Col. Michael Pietrucha, ACC's Joint Air-Ground Combat Division's irregular warfare action officer and co-author of the command's enabling concept. While the initial aircraft could be propeller driven, future variants could feature a jet engine. "There might be a single-engine variant. There might be a two-engine variant," Pietrucha said, noting these airplanes could "fill overlapping but different missions."

While the specific airframe has yet to be determined, the Air Force has laid out a few essentials for an ideal OA-X aircraft. Most notably, the aircraft will

boast a forward-firing Gatling gun, and the ACC blueprint calls for a weapon pilots could rearm quickly after landing at an austere forward operating base. The pilot could then take off and continue the mission without returning to home base. The fighter must also have four weapons stations and be capable of carrying two 500-pound bombs, laser guided weapons, and rockets. The aircraft must have countermeasures and a laser designation system. For ISR, each aircraft must have an internal or pod-mounted electro-optical-infrared system "at least equivalent to current advanced targeting pods," according to the ACC document. The aircraft must be capable of recording the information gathered from the pod.

Looking at a Wing Construct

ACC officials are engine agnostic when it comes to the OA-X. However, the service will likely choose a turboprop since small partner nations will have an easier time maintaining it, according to service officials. "There are plenty of second-, third-, and fourth-class air forces out there that are going to have a hard hurdle with jet engine maintenance, but will still be able to handle something that's less complex and that requires a lower level of training and instrumentation and everything else," Pietrucha said.

The Air Force has not determined how it will organize the light fighter and its other irregular warfare aircraft within the fleet. However, Schwartz has suggested a wing construct could be a solution.

The Air Force has not operated a propeller-driven attack aircraft since it retired the Vietnam-era OV-10 Bronco in the early 1990s, and only a few immediate candidates are in production right now.

"We don't have anything [available] off the shelf," Scott said. "To better figure out

which one we want, there will probably be a [flyoff] competition."

Some of the aircraft possess advantages over others, depending on the region where they are employed. "If somebody's looking to find the perfect OA-X, they're not going to," Pietrucha said. "There are a variety of potentially useful things that will fall under an OA-X umbrella." The two front-runners are the Hawker Beechcraft AT-6B—a modified version of the T-6 trainer used by the Air Force and a number of foreign nations—and the Embraer Super Tucano, flown primarily by South American countries.

Hawker Beechcraft has been working on its AT-6B for more than a year and in September announced it has aligned itself with defense giant Lockheed Martin, which will integrate avionics into the attack airplane. A souped-up Pratt & Whitney engine also is in the works. "We're very optimistic about the role that that airplane can play in IW," Hawker Beechcraft Chairman and CEO Bill Boisture said of the AT-6B.

The Navy has leased a Brazilian-built Super Tucano as part of its Imminent Fury program, an effort to develop SEAL-support aircraft. The Air Force has observed this closely.

Boeing has also quietly assembled a plan to remanufacture its still popular OV-10. Company officials believe their aircraft's cargo capability and twin-engine design give it an advantage to its single-engine competitors. But the company has to reopen a production line, which is no small feat.

Italian aircraft maker Alenia has taken a different approach from its competitors, proposing a weaponized version of its M-346 jet aircraft trainer. It would perform better than its propeller-driven competitors in mountainous regions such as Afghanistan, according to Alenia North America President and CEO Giuseppe Giordo.

Some lesser-known companies have proposed solutions, also. Crop duster manufacturer Air Tractor has crafted a light attack airplane out of one of its rugged airframes and showed off its AT-802U prototype at the Paris Air Show this past summer. Defense start-up Stavatti Aerospace has shown off designs of aircraft it would like to enter in the OA-X contest.

If all goes as planned, one of these new light fighters could head to the battlefield by 2013. ■

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