

## Stealth skywriting; Watched by Gorgons; Stopping START? ....

### Stealth Messenger

The Air Force has acknowledged the existence of a new and stealthy reconnaissance aircraft. Though it offered scant information about the machine, USAF intended to convey a message to many audiences, both at home and abroad.

Called the RQ-170 Sentinel, this UAV followed the now-traditional USAF spyplane pattern: designed and built by Lockheed Martin's Skunkworks, operated secretly in Nevada for several years, and eventually injected into real-world missions. The aircraft has been spotted in Afghanistan.

The Air Force's brief, no-fanfare Dec. 4 statement regarding the craft answered some questions about grainy photos of a gray, flying-wing-type unmanned airplane taken near Kandahar Airfield, Afghanistan. These had been circulating widely on the Internet.

The Air Force did not officially claim ownership of the aircraft depicted in those photos. However, it acknowledged it is "developing a stealthy unmanned aircraft system (UAS) to provide reconnaissance and surveillance support to forward deployed combat forces."

Further, it noted, the program "aligns with Secretary of Defense Robert M. Gates' request for increased intelligence, surveillance, and reconnaissance (ISR) support to the combatant commanders, and Air Force Chief of Staff Norton [A.] Schwartz's vision for an increased USAF reliance on unmanned aircraft."

Senior defense officials said the release should not be difficult to interpret: Sentinel's Afghan deployment is an Air Force demonstration that it has indeed gone "all in" the current fight with the ISR gear at its disposal, even experimental systems.

In 2008, Gates began complaining that the Air Force wasn't throwing its full ISR capability into the war effort, a dubious charge that USAF has quietly sought to challenge. Gates has since relented, saying he is now largely satisfied with USAF's efforts in wartime ISR.

Gates has pushed the Pentagon to orient itself more toward irregular warfare, and the preponderance of new USAF aircraft in the past few years has been remotely piloted vehicles, which work well in uncontested airspace against insurgents but would be useless against an adversary well-equipped with air defenses. Many in Congress have worried that USAF has abandoned preparing itself for possible big wars in favor of little ones.

Speaking of the meaning of the Sentinel, a senior DOD official said, "We have not taken our eyes off the future. We will not always have a permissive air environment, but the ISR products we are accustomed to having from remotely piloted aircraft [aren't] something we're going to want to give up, in any kind of conflict."

He said the aircraft also sends this message to potential peer adversaries: "We haven't forgotten about them. ... We are putting our money where our mouth is when we say we will invest in systems that have application across the spectrum of conflict."

Although the Sentinel's dimensions and performance characteristics have not yet been established, the shape and even color of the aircraft suggest it is meant not for extremely high-altitude missions—such as those flown by



*Is this the Sentinel?*

the U-2 and Global Hawk—but medium-altitude missions in the same operating bands as the MQ-1 Predator and MQ-9 Reaper.

The RQ designation suggests it is strictly an ISR platform and not armed, as an MQ designation would indicate.

The value of a stealthy, remotely piloted aircraft operating in an environment where the enemy has no radars isn't apparent. However, the system may not be focused solely on the irregular fight in Afghanistan. If it has sufficient range, the RQ-170 may be looking inside the borders of neighboring countries, tracking external suppliers of weapons and aid to insurgents in Afghanistan. Its revelation would therefore be a message to patrons of the insurgents that their activities and culpability can be documented.

The Air Force said the Sentinel is operated by the 30th Reconnaissance Squadron at Tonopah Test Range in Nevada. The long-dormant electronic reconnaissance unit was reactivated in 2005, and in 2007, USAF approved its new squadron patch: It shows a black bird standing astride Asia and East Africa.

### ISR Multiplication Tables

The intelligence-surveillance-reconnaissance technology effort in Afghanistan is turning a corner, and it's not so much the number of flying platforms or CAPs anymore as it is the capabilities of those platforms. The shift could give the Air Force some relief from the incessant demands that it field more and more ISR drones.

The Air Force is also streamlining the way it sends signals collected by ISR aircraft, so that its communications "pipes" don't get clogged, and is ardently pursuing high-flying airships as potential ISR platforms.

So said Lt. Gen. David A. Deptula, deputy chief of staff for ISR. In a December meeting with defense writers, Deptula said dozens of remotely piloted systems are flying over Afghanistan and its environs. They have the ability to transmit pictures to ground forces, said Deptula. Moreover, he added, the aircraft have a new podded capability that will vastly increase the number of pictures those drones can send.

Called "Gorgon Stare," the pod, said Deptula, "will allow us ... to transmit up to 10 different video images to 10 different users on the ground within a wide area. That effectively increases the number of CAPs. ... You effectively increase the CAPs by 10, by introducing one pod set."

The first three Gorgon Stare pod sets will arrive in theater in the spring. By summer, there will be three more. Late in the year, three additional pod sets will arrive, but with the ability to feed 30 images at once, not 10.

"You can see now, we're vastly increasing the output or the capability without dramatically increasing the number of platforms," Deptula pointed out. Three more, capable of 30 feeds each, will come in 2011.

The version after that will be able to send video feeds to 65 users at once, he added. In short, Predator drone-like capabilities offered by the Air Force are about to increase exponentially.

Deptula went on, "Do we want to add additional platforms? Yes. But the quickest way to add [coverage] is to add capability to what you already have."

He also noted that "Predator" has become a generic term—like Kleenex—which ground commanders use when they want imagery. They may not actually need or want a Predator feed; a small Raven RPV may do "if all you're interested in is what's on the other side of the hill." He said ground forces need to be educated about the ISR products available, and there must also be a process of "identifying validated demand. There's a big difference between need and want, and separating the two is very important, particularly as we face a constrained resource environment."

Given that vast increase in data collection and transmission, though, how will USAF cope with the demands on its bandwidth, particularly since it was counting on the now-canceled Transformational Satellite Communications System (TSAT)?

Deptula said part of the problem can be solved by simply sending imagery directly from the air to the ground units below that need them. Sending it to analysts around the world in the US may not be necessary. Another technique is sending the imagery to something called the imaging access system, a storehouse of the latest images that US forces can tap into without the need for even a password.

He also said USAF is looking into putting more onboard processing capabilities into its ISR platforms, and signals are being compressed to use as little bandwidth as possible. The Air Force has been proactive in anticipating the ISR needs of ground forces in Southwest Asia, and has been developing a flexible force of analysts to answer those requirements, Deptula said.

"My perspective was ... let's not wait to be asked. Let's build and capitalize on this distributed processing, exploitation, analysis, and dissemination system such that we can tap into it and rapidly add or subtract, adjust analytical capability very quickly."

When the US surges its ground forces in Afghanistan, "boom, we can add analytic capability at the speed of light just by shifting or adding additional analysts to it."

Deptula said the future will likely see greater use of airships that can maintain station and altitude for long periods of time—perhaps years at a time.

"I'm a big fan of airships and it's about time that we get these things out there, move them off PowerPoint [briefing slides] into the three-dimensional airspace."

The Air Force is collaborating with the Defense Advanced Research Projects Agency on a program called ISIS that would operate an airship above 60,000 feet "and dwelling for up to 10 years," Deptula said.

The potential is enormous, not just for resolution with ground moving target indication, "but also detecting airborne targets," said Deptula.

The cost of such a system would be highly attractive, he said, noting it would be "a fraction—a fraction—of what the operating costs for large airborne systems are."

#### No Nukes, No Treaty

A group of 41 Senators wrote President Obama in December, urging him to fix the nuclear weapons infrastructure and hinting they'll block any new nuclear treaties with Russia if he doesn't.

The Dec. 16 letter, signed by 40 Republicans and one Independent, carries just enough names to block Senate ratification of a planned new arms treaty with Russia. A follow-on to the 1991 START agreement, still in negotiation, is expected to reduce each side to a level of about 1,500 warheads over a 10-year period.

The Senators reminded Obama that the Fiscal 2010 defense authorization act requires that he submit a 10-year plan for modernizing the nuclear weapons infrastructure at the same time he submits any new nuclear arms agreement to the Senate for ratification.

"We don't believe further reductions [in nuclear weapons] can be in the national security interest of the US in the absence of a significant program to modernize our nuclear deterrent," the Senators wrote.

The group was talking not about the force structure of nuclear delivery vehicles—the missiles, submarines, and bombers that comprise the nuclear triad—but the warheads themselves. Many are decades old, have lost their ginger, and present a danger of being unreliable if needed. Meanwhile, the national apparatus to develop, build, test, and rehabilitate the warheads is in serious disrepair. Many leading figures—notably US Strategic Command chief Gen. Kevin P. Chilton—have been trying to raise awareness about the condition of the warhead inventory for several years.

The Senators asserted that "the linkage between nuclear force reductions and modernization" is reinforced by the findings of the so-called Perry-Schlesinger Commission, a bipartisan group that assessed the health of the US nuclear weapons complex and determined it to be in "serious disrepair." The commission was launched in 2008 and was so distressed about the condition of the nuclear infrastructure that it issued a preliminary report in late 2008 before presenting a full-throated version in mid-2009.

"The members of this commission were unanimously alarmed," the Senators wrote, and "made a series of recommendations to reverse this highly concerning situation. We endorse these recommendations and believe they constitute the minimum necessary to permit further nuclear force reductions."

The Senators want Obama to fully modernize the B61 and W76 warheads; fund development of a new warhead or devise a way to reuse components of existing warheads; fully fund the nuclear science and engineering efforts at the national laboratories; and fully fund the infrastructure that refines and enriches uranium and plutonium and the chemistry capabilities that attend them.

"We are committed to the defense authorization act's requirement that the treaty and modernization plan be submitted at the same time, and we believe they must be acted on together as well," the lawmakers wrote.

They also insisted that other provisions of the act must be observed as well—those that say the US must not limit missile defenses, space capabilities "or advanced conventional modernization, such as non-nuclear global strike capability." ■