

BY JEFF RHODES
PHOTOS BY GUY ACETO

★★★★THE HOGS ★★★★OF WAR

"EVERY DAY WHEN I WAKE UP, I KNOW EXACTLY HOW MANY DAYS ARE LEFT BEFORE WE GO INTO THEATER. STANDING UP A NEW SYSTEM IS A CHALLENGE, BUT FACING A NEAR-TERM DEPLOYMENT IS A HUGE WEIGHT. WE ARE GOING TO BE ON THE WORLD STAGE. WE HAVE TO BE AT OUR BEST."

That is how Lt. Col. Dan Marino, the 175th Wing's operations group commander, describes the dual task his Maryland Air National Guard unit has faced. The 175th Wing's 104th Fighter Squadron is currently completing a conversion to an upgraded version of the A-10 close air support aircraft and preparing for an Air Expeditionary Force deployment later this year.

The A-10, officially christened Thunderbolt II, but universally referred to as Warthog because of its ungainly appearance, is the first US Air Force aircraft specifically designed for close air support of ground forces. The A-10 entered service in 1976.

The Warthog, or more simply, Hog, is a relatively uncomplicated design. The Air Force's requirements at the time were straightforward—the aircraft had to carry a large ordnance load, have extended loiter time over the battlefield, provide good maneuverability at low speeds and low altitudes, be easy to maintain, and be able to operate from small, forward bases. The aircraft didn't necessarily have to be fast. In fact, combat speed of the A-10 is around 450 knots, much slower than its fighter contemporaries.

The thinking at the time was that the A-10 would have to provide close air support and be able to halt a Soviet advance coming through Germany. Consequently, the aircraft was built around the mammoth General Electric GAU-8/A Avenger 30 mm seven-barrel Gatling-type cannon, which was specifically designed to destroy tanks.

During the 1991 Gulf War, A-10s had a mission capable rate of 95.7 percent. Warthog pilots flew 8,100 sorties, launched more than ninety percent of the AGM-65 Maverick air-to-ground missiles used in the war, and destroyed 987 tanks and more than 1,800 trucks and vehicles.

"If you look at the history of the A-10, every new capability, every new system put on the jet is an add-on," notes Maj. Doug Baker, a 2,000-hour pilot with the 104th FS. "After continually adding systems, we had an aircraft with all this extra stuff it was never originally designed to have. For instance, we had a targeting pod, but the pod was never fully integrated.

and active-duty Air Force A-10 fleet. During the 1970s, two modified A-10s were designated A-10B, so the modified A-10As are redesignated A-10Cs.

The Air Force awarded the PE development contract in 2001. Lockheed Martin in Owego, New York, teamed with BAE Systems, Southwest Research Institute, and Northrop Grumman to develop the upgrade kit. The first prototype A-10C was flown in 2005. The first production kits were delivered to the Ogden Air Logistics Center at Hill AFB, Utah, for installation in March 2006. The 104th FS received its first production A-10C last August.

Most of the changes are related to avionics. The A-10 is now wired to carry either the Lockheed Martin AN/AAQ-33(v) Sniper XR or the Northrop Grumman AN/AAQ-28 Litening AT advanced targeting pod. The upgrade also includes an updated 1760 data bus running to six of the aircraft's eleven weapons stations,

send that information to the other jets so everyone is looking at the same thing."

In the cockpit, the A-10C pilot has two five- by five-inch color multifunction displays with a moving map as well as a new control stick and throttle. "The jet was all analog and manual before," notes Marino. "I had to reach up to the instrument panel and throw switches and push buttons to drop a bomb. Now, I can change the switch positions and drop weapons without taking my hands off the throttle or stick."

The last four 104th FS pilots went through conversion training in March. The unit now has fifteen A-10Cs on the ramp, with six more coming because of force realignments. But getting to this point took effort. "We volunteered for A-10C," says Lt. Col. Kevin Campbell, a Warthog pilot who is the 175th Maintenance Squadron commander. "Funding for the program was in jeopardy, but the Guard provided an infusion of cash. That allowed us to go forward and put the Guard at the forefront of the program."

The 104th FS and the 110th Fighter Wing at Battle Creek, Michigan, were chosen to lead the fleet. "We committed the lead aircraft to the program. That was key to keeping the line moving," notes Campbell, who moved his family to Nevada to stand up a Guard detachment at Nellis AFB outside of Las Vegas. There, the 104th Fighter Squadron and the active duty 422nd Test and Evaluation Squadron brought the A-10C into operation.

"The Guard operation at Nellis is the big success story," adds Campbell. "We kept sortie generation up and made sure we got the test points. We provided a lot of experience on the pilot and maintenance sides. We have been living the Total Force concept at Nellis since November 2005."



We had to tell the computer the aircraft was carrying a Maverick. We had to put target coordinates in by hand. Under the upgrade program, we are ripping out all of the old independent systems and replacing them with a comprehensive system that is expandable, and it works."

The Precision Engagement, or PE, program significantly increases the pilots' situational awareness and their ability to accurately detect, identify, and destroy targets in all weather from greater altitudes and distances using precision-guided weapons.

PE is a five-year program to upgrade all 356 aircraft now in the Air National Guard, Air Force Reserve Command,

which enables the A-10 to carry the GBU-31/32/38 Joint Direct Attack Munition series and the CBU-103/104/105 Wind-Corrected Munitions Dispenser; upgraded DC power converters; and a digital stores management system.

The Situational Awareness Data Link, or SADL, is also part of the upgrade. "Being a guy who never flew with a radar, seeing the SADL picture is magic," Baker observes. "We share data, and it is all secure. With SADL, you don't necessarily have to input target coordinates manually. I just slave the targeting pod to what I'm looking at, and the system figures out the coordinates. Then you can



"We had the Guard and the active duty embedded together at Nellis," recalls CMSgt. Terry Allen, the wing's maintenance chief. "We have people who have been working on this jet for twenty years who helped develop the training documents for the A-10C. We sent close to fifty percent of our people to train at Nellis for thirty-five days at a time."

"What we did at Nellis kept development of the C-model on track," Allen adds. "We had, and are still having, some growing pains. The A-10C mod is a little challenging. We finish at Nellis this July. We thought we were going to be there only six months. But we overcame. We fly at Nellis; we fly in Baltimore."

"I was a part of the initial cadre on A-10C testing," notes Baker. "Four of us are in test. We had to get what is called a Testing Upgrade, which is like a basic test pilot license. I ended up going to Nellis for more than two weeks every two months. Flying in a C-model there and then going back to an A-10A in Baltimore was a challenge. I had two sets of habit patterns. Habit patterns are hard to keep, so I was the happiest

guy on this base to see our last A-model go in for modification."

As the A-10C was being put through its paces at Nellis and modified jets were being delivered, training became a critical issue. "The question became, 'How do we get the basics?'" notes Marino. The unit will soon have a cockpit simulator with a full visual system that will allow multiship missions and distributed training. But the initial answer was a desktop simulator that uses commercial components and is tailored to the A-10. Baltimore and Battle Creek each have five of the desktop sims.

"The desktop simulator is an outstanding tool for a new system like this," says Capt. Rich Hunt, the squadron's weapons officer. "The challenge in the A-10C is to build finger memory since nearly all of the controls are on the throttle and stick. Pilots have to unlearn their previous habits and develop new ones. This business still comes down to flying a jet and employing the weapons."

A four-flight pilot checkout syllabus was developed by Air Combat Command. The first flight familiarizes pilots with the new throttle and stick and teaches them how to get the

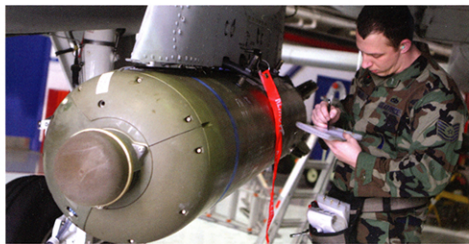


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targeting pod into position. The second flight adds training with Maverick, the tactical awareness display, and the moving map. The third flight concentrates on understanding HUD symbology and manipulating the sensor of interest, which is critical for employing weapons. The fourth flight involves flying in a tactical environment. "Once qualified, we like to say the pilots have a license to learn," says Hunt. "With the entire squadron qualified, we can press forward and start training for the AEF deployment."

The Baltimore A-10Cs will deploy first this fall, followed shortly afterward by A-10Cs from Battle Creek. "The Hog will never be faster than other jets, but now we can do almost everything else," notes Marino. "With JDAM, we can hit a pop-up target. We will be doing nontraditional surveillance and recon-

naissance. We will go out and check for IEDs in front of a convoy. The Hog was designed to destroy armor columns, and now we look for a group of four or five people in the woods. PE allows us to find and fix the target rapidly. With SADL, target information comes up on the net. We can drop JDAM, 500-, or 1,000-pound bombs and launch Maverick."

"The change from analog to digital is huge," says Campbell. "The infrastructure is in the airplane, and the system can accommodate growth. It is better and easier and faster to update. Close air support requires talking to troops on the ground and delivering weapons in close proximity to friendly forces. The A-10C makes us much better at that."

"Anytime we put troops on the ground, we will need that type of

close air support," Campbell continues. "If we have the sensors, we can perform CAS from 10,000 feet. With the A-10C, we can do battle damage assessment from standoff distances. I can still roll in with the gun or with a bomb if I have to. But now, I have to expose myself to threats only if the situation warrants taking such a risk, not because the aircraft's capabilities are limited."

The drawdown of the A-10 is expected to begin in the early 2020s when the F-35 comes online in sufficient numbers. The last A-10 is scheduled for retirement in 2028. Notes Campbell: "We can't stay around forever, but the Hog has to be viable until it is time to go."

Jeff Rhodes is the associate editor of Code One.