



# Shadow Warriors

## Pennsylvania ARNG Tactical UAS Training Program

By SGM Walter S. Zapotoczny Jr.

PHOTO COURTESY OF AAI CORPORATION

### SPECIAL FOCUS

### UNMANNED AIRCRAFT SYSTEMS

**W**hile it may be one of the smallest in the current family of unmanned aircraft systems (UAS), the Shadow is not your uncle's remote controlled airplane.

With a wingspan of 14 feet, the Shadow is used to locate, recognize and identify targets up to 125 kilometers from a brigade tactical operations center.

The system can recognize tactical vehicles day and night from an altitude of 8,000 feet and at a slant range of 3.5 km. Because of its compact size, it produces little noise and a very low radar and infrared signature.

Each Shadow has a price tag of over \$754,000 with the total system price of near \$12 million.

According to Frank Blouch, a liaison to the Army National Guard UAS program from IIF Data Solutions, Inc., as far back as late 1999, then Army Chief of Staff GEN Eric Shinseki approved a multi-year program to transform the Army into a lighter and more deployable fighting force.

Part of Shinseki's vision included



1LT Jody Wright, lower right, points out on a map the tactical operations area for a Shadow flight to, left to right, PFC Aaron Johnson, SSG Robert Frey and SPC Ralph Dixon.

development of interim brigade combat teams. Today, there are six active and one reserve component commands designated as Stryker brigade combat teams (SBCT).

SBCT-6 is comprised of more than 4,000 Soldiers of the 56th Bde., 28th Inf. Div., Pennsylvania ARNG.

One small, but mighty element of SBCT-6 is the tactical unmanned aircraft system (TUAS) platoon of Troop

ABOVE: left to right: SGT Andrew Wills; Mona Ennenga and Trinidad Romero, AAI Corp.; SGT John Pizzonia and SGT Gregory Brubaker perform payload checks prior to the Nov. 1, 2006 inaugural launch of their Shadow.

D, 2nd Sqdn., 104th Cav. Regt. and their workhorse the RQ-7 Shadow UAS. The 22-man platoon (with one officer, one warrant officer and 20 enlisted Soldiers) is organized into three elements: a platoon headquarters, a mission planning and control section, and a launch and recovery section.

The mission planning and control section includes a ground control station, ground data terminal and four remote video terminals.

One ground control station is normally co-located with the brigade TOC, with the second ground control station at the launch and recovery site.

All of the platoon's personnel, air vehicles, tools and equipment are designed to fit onto three C-130 Hercules aircraft.

### Fielding, Training and Deployment

The TUAS platoon was not scheduled for fielding of the RQ-7B Shadow and new equipment training until fiscal year 2005 under the original SBCT transformation timeline. However, the demand for UAS to sup-





SPC Brian Taughinbaugh, left, SPC Mark Buzby, center, and SGT Gregory Brubaker perform preventive maintenance checks on their Shadow UAS prior to launching on a training flight at the Army Aviation Flight Facility on Fort Indiantown Gap, Pa.



From left, SSG John Thomas, vehicle operator, and SGT Brandon Garner, a payload operator, control a Shadow training flight inside of a ground control station at Fort Indiantown Gap, Pa.

"For example, Army Regulation 95-23 restricts the amount of duty hours, as well as the number of flight hours, operators can perform in a day," he said.

As a National Guard TUAS platoon the challenges faced are quite distinctive in comparison with those found in the active component.

"Our biggest challenge," said 1LT Jody Wright, TUAS platoon leader, "is the severely limited time for training. Our training program focuses on individual qualification training as well as professional development. We are making every effort to maximize the training opportunities to ensure our Soldiers get the highest quality opportunities, while keeping safety as the number one concern."

Maintenance and logistic requirements are also unique since most of the support comes from the contractor who is in direct support of the platoon. For these reasons, the TUAS platoon Soldiers are not only involved in training for their mission, but training those outside of the aviation community to gain a better understanding of the Shadow's capabilities and limitations.

That understanding by the ground maneuver command and staffs is seen by O'Leary as critical in order to get the most from the system. Soldiers of the TUAS platoon look forward to training at their new Fort Indiantown Gap facility in late fall of this year.

### New Facility

According to LTC David Edwards, training site engineer at Fort Indiantown Gap, the \$3 million project is the first Army National Guard TUAS facility in the United States.

port maneuver commanders in Iraq significantly accelerated this process.

Troop D was notified in November 2003 that the TUAS platoon would be fielded early and deploy to Iraq in 2004. A call went out for volunteers interested in becoming UAS operators, electronic warfare equipment repairers, and generator mechanics to help fill vacancies, and all assigned Soldiers went on to complete 16 weeks of initial skills training. Then they attended 10 weeks of equipment training on the RQ-7A model Shadow at Redstone Arsenal, Ala.

On Sept. 28, 2004, the trained and certified platoon headed over to Iraq for a one year tour, assigned to the 2nd BCT of the 25th Inf. Div., under the 1st Inf. Div., located at Forward Operating Base (FOB) Warrior near Kirkuk. Within two weeks of arriving in country, the TUAS platoon quickly familiarized themselves with the area of operations and established flight operations. They conducted flight operations from FOB Warrior until May 2005, and then relocated to support operations in the Tikrit area.

They were on their third relocation at FOB Remagen when they were relieved in September 2005 by the 1st BCT, 34th Inf. Div., Minnesota ARNG.

### Training Back Home

After a successful deployment, the platoon returned home and completed training on the newer "B" model Shadow at Weide Army Heliport in Maryland. Troop D is the only ARNG unit to be fielded with RQ-7B equipment, receiving it Oct. 26, 2006. The TUAS platoon began training on their new systems at the Army Aviation Support Facility (AASF) on Muir Army Airfield at Fort Indiantown Gap, Pa.

On Nov. 1, 2006, the platoon became the first reserve component unit to fly an MTOE (modified table of organization and equipment) fielded RQ-7B Shadow in the continental United States. "Currently, TUAS platoons are organized in either the military intelligence company of brigade combat teams or the surveillance troop of the Stryker brigade combat team," said 1LT Ryan O'Leary, Troop D commander.

"This is unique in that an aviation asset is organic to a ground maneuver unit. Since TUAS is a relatively new concept in the military, most people do not realize that TUAS operators have the same aircrew training requirements and restrictions that the manned aviator has," O'Leary said.





Senior military leaders, UAS project and product managers, ATTC UAS managers, local civic leaders and friends of Fort Rucker, join Rep. Terry Everett, center, for a photo with the Shadow UAS.

## ATTC Adds Shadow UAS Study Capability to Home of Army Aviation

By Lee Ann Smith

A ceremonial "first" flight for an aircraft with more than 200,000 combat hours may seem odd to some. Called a "first flight," the Sept. 13 symbolic ceremony was really a demonstration of capabilities. "It is a symbol about what is good with our Army and with Fort Rucker," said COL Walter Golden, Army Aviation Warfighting Center deputy commanding general.

The Shadow, manufactured by the AAI Corp., arrived at Cairns Army Airfield more than a year ago and has been used in test related activities with the Army Aviation Technical Test Center (ATTC).

"With this flight, we establish a flight test capability of the Shadow unmanned aircraft system here at Fort Rucker, and we take our first step towards the eventual testing of many more unmanned aircraft systems and associated systems for the future," said COL Christopher Sullivan, ATTC commander.

"It will be available to the entire Fort Rucker community and be used to develop tactics, techniques and procedures, to work manned-unmanned teaming initiatives, and establish and develop safety enhancements for all unmanned systems," Sullivan said. "This is an important first step for the test community, Fort Rucker and Army aviation."

Golden said having the Shadow at the Unmanned Aircraft System (UAS) Center of Excellence (COE) helps to refine doctrine. "One piece we are currently employing in theater, but is still in its infancy, is manned-unmanned (MUM) teaming," he said. "What better place to hone the fundamentals of manned-unmanned teaming than here at Fort Rucker where we have both manned and unmanned platforms, and we're central to the training of both of those systems."

During the demonstration to military and civilian leaders, and industry dignitaries, ATTC personnel launched and flew the UAS to another range, then landed back at the launch site. An electro-optic, infrared sensor payload mounted on the underside of the aircraft relayed images of the ground view over which the Shadow was flying to monitors in the One-System ground control station (OSGCS).

On hand, Rep. Terry Everett (R-AL) said our nation continues to be committed to winning the war on terror with a different kind of enemy; it must be fought in unconventional ways. "It will be fought with boots on the ground and with high tech weapons," he said.

Everett, a ranking House Armed Services Committee member, said the UAS COE focuses on the development and operations of UAS by tying together current operations with emerging doctrine, technology and future requirements. "While the benefits of the unmanned system are being utilized overseas, much of the ground work is being done in places such as Fort Rucker," he said.

"The Shadow flies about 12,000 hours a month, which represents approximately 30 percent of all the UAS flights happening in Iraq," said Rob Stone, UAS test chief for ATTC. "Shadow is used heavily, exceeding the manned flight hours significantly."

While the Shadow flies in the forefront over the battlefield, a manned aircraft is behind at a safe distance ready to bring weapons on target. "It saves Soldiers lives by keeping them out of harm's way and performs the critical tasks of reconnaissance, surveillance and target acquisition," Golden said.

Adding to that, Everett said the MUM teaming concept is another step forward to protect troops in combat. "UAS will be the wave of the future," he said. "We won't need as many fighter aircraft ... but we will need to control the airspace."

*Lee Ann Smith is a veteran newspaper journalist and is the director of Media Technology and Communications with Navigator Development Group Inc., Enterprise, Ala.*



As part of the Stryker program, the new training and maintenance site has a 'Spirit Gold' design rating, the highest environmental design rating for new construction.

"This facility brings into harmony environmental concerns, anti-terrorism and force protection requirements, and training needs, a balance that most civilian construction doesn't have to consider," Edwards said.

Falling under the management and control of the AASF, it will have one paved runway and one tactical (unpaved) runway, enabling the platoon to train in various conditions.

The facility is designed to service three TUAS platoons and their equipment and in about a year, a follow-on project will add above-ground fuel storage capability.

### Preventive Maintenance

While waiting for their new facility to be built, the TUAS platoon performs maintenance and conducts flight training at the AASF, which provides airspace management, weather information, and support for their flight records.

COL Christopher Latchford, past 28th Cbt. Avn. Bde. commander and former state army aviation officer (SAAO), explained the relationship.

"Despite the fact that the TUAS platoon is part of the Stryker brigade, the Pennsylvania ARNG aviation community has assumed responsibility for their flight records,





Work continues on the new Pennsylvania ARNG tactical unmanned aircraft system facility at Fort Indiantown Gap, Pa.

ARMY PHOTO

flight physicals, regulatory compliance, compliance with aviation standards, and a myriad of other items that is only accomplished within army aviation," Latchford said.

"The Soldiers who fly the Shadow have similar requirements as the aviators who fly the Apache, Black Hawk or Chinook aircraft. While responsible for all of these items, we have no command authority over the TUAS platoon," he said.

Even without the command relationship, the SAAO's office decided to lean forward and assist the UAS platoon with Federal Aviation Administration (FAA) applications for airspace use, provide AASF support for training, and assign a 15P flight operations specialist to assist the unit to maintain the platoon's flight records. Currently, the TUAS platoon is not authorized a 15P position.

A new surface movement radar system was installed at the AASF to help track and manage the Shadow.

1LT Jared Sekellick, with the SAAO's office, coordinated with the Army's Regional Representative to the FAA in order to obtain a certificate of authorization permitting the Shadow to use the restricted airspace over the installation.

Planning is currently under way on future operations that would integrate the Shadow with AH-64 Apache and tactical fighter aircraft training missions. The first joint use of airspace by an RQ-7 Shadow and a USAF A-10

was conducted on May 22 at the Bollen Air-To-Ground Weapons Range, Fort Indiantown Gap.

### In Conclusion

As the use of Army aviation has evolved, so too has the equipment.

Nothing in recent history exemplifies this change more than the unmanned aerial vehicle.

Capable of continuously monitoring and providing situational awareness to ground commanders, the Shadow can stealthily loiter in an area longer and quieter than its manned big brother without the risk to an aviator.

As these systems evolve and are fully integrated into battlefield operations, they will undoubtedly redefine the mission of Army aviation.

The Soldiers of the TUAS Platoon are proud to be on the cutting-edge of reconnaissance aviation and represent the new Shadow Warriors.

For information on Troop D's Shadow Warriors, contact 1LT Ryan O'Leary at (717) 977-0552.

For more about the RQ-7B Shadow program, contact Frank Blouch at [franklin.blouch@us.army.mil](mailto:franklin.blouch@us.army.mil).



*SGM Walter S. Zapotoczny Jr. is the aviation operations chief for the 28th Combat Aviation Brigade, Pennsylvania Army National Guard, Fort Indiantown Gap, Pa.*



**LEGALLY, WE CANNOT SAY  
IT IS AN EARLY  
WARNING SYSTEM.**