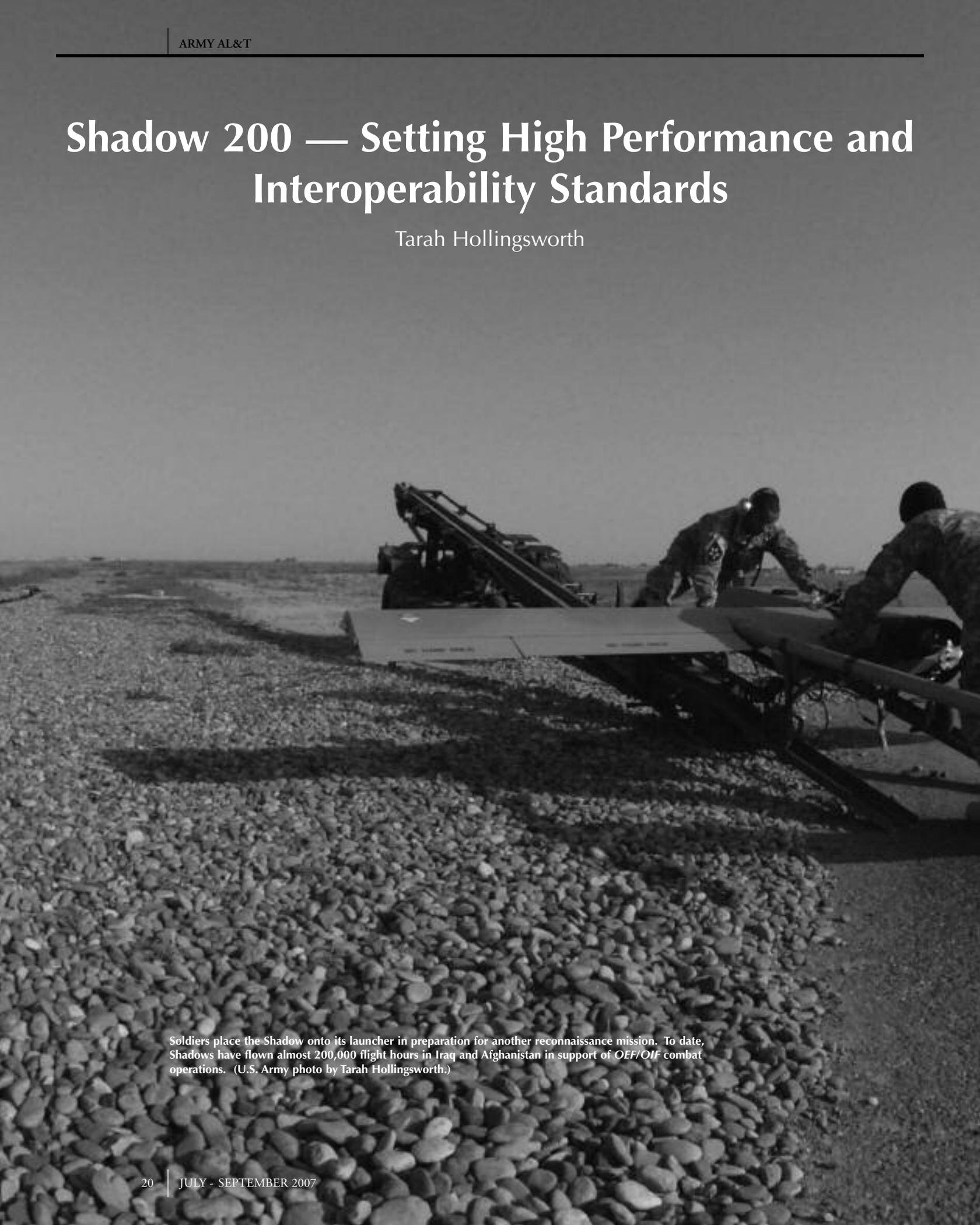


Shadow 200 — Setting High Performance and Interoperability Standards

Tarah Hollingsworth



Soldiers place the Shadow onto its launcher in preparation for another reconnaissance mission. To date, Shadows have flown almost 200,000 flight hours in Iraq and Afghanistan in support of *OEF/OIF* combat operations. (U.S. Army photo by Tarah Hollingsworth.)

The Shadow 200 RQ-7B Unmanned Aircraft System (UAS) has blazed a path in the UAS industry. What once was a concept has now become the most flown UAS in the world, racking up more than 170,000 flight hours, with over 150,000 combat hours in Iraq and Afghanistan. The surge of military troops in Iraq has created an even bigger surge in Shadow flight hours. With no slow down in sight, units are now flying more than 8,000 hours per month, a number that was unfathomable just 2 years ago. With units flying 6 to 10 times the operational rate anticipated, it is the dedicated acquisition and logistics professionals using proven processes that are delivering the latest technology to our warfighters where and when they need it most.



Since being fielded in 2003, the Shadow program has moved to the forefront of military technology and integration, creating a product that consistently exceeds warfighter expectations. In the last 2 years, Shadow Platoon fieldings have tripled to the point where the Army now has fielded more than 50 Shadow Platoons (over 216 aircraft), is operational on 4 continents and is directly supporting *Operations Enduring* and *Iraqi Freedom*

(*OEF/OIF*). A Shadow system includes three aircraft (plus one operational float), two ground control stations, a launch trailer, support vehicles for equipment, and additional equipment spares and parts.

Shadow users are experiencing exciting times as U.S. Army units find new uses for this versatile technology. In 1999, the Army granted a contract to AAI Corp. to fulfill its requirement for

a tactical UAS that could loiter for a minimum of 4 hours, had daylight and infrared optics and had a range of approximately 50 kilometers. By August 2002, Shadow RQ-7A was in low-rate production. It soon became the first Army UAS to complete Initial Operational Test and Evaluation.

In 2003, Shadow deployed to Iraq to support the global war on terrorism. Commanders were enthusiastic about



SPC Williams preflights a Shadow UAS prior to launching. The Army has fielded more than 50 Shadow Platoons to meet commanders' operational requirements on 4 continents. (U.S. Army photo by Tarah Hollingsworth.)

the synergy gained with UAS watching over the troops on the ground. As one of the most requested unmanned aircraft in theater, the Army made improvements to the system and introduced the RQ-7B in 2004. The most significant upgrades were improving the onboard computer system that improved target acquisition capabilities. In addition, the wing span was expanded by approximately three feet, which increased endurance to almost 6 hours. The wing extension meant more fuel could be stored in the wings. The improvements increased the range to 125 kilometers. Later, the camera package was upgraded to the POP 300 with the Laser Pointer. As the Shadow's military utility became more apparent, commanders insisted on getting more tactical UAS imagery fed into their tactical operations centers (TOCs).

Identifying possible improvised explosive device emplacements, monitoring known or suspected enemy insurgents and guiding ground troops out of harm's way is a daily mission for dedicated Shadow crews in theater. The Laser Pointer (not to be confused with a Laser Designator) was fielded with the POP 300 camera package. The Laser Pointer allows the Shadow to display a laser light, visible only through night vision goggles, that is approximately three feet in diameter on the ground. The Laser Pointer has proven to be one of the most effective tools for saving troops in battle,

especially in complex urban terrain. Shadow teams have led many Soldiers around enemy strongholds and have positively identified targets that are attacked by air or ground assets.

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With the increasing demand for Shadow's full-motion video, the program relies heavily on the involvement and commitment of the entire UAS Project Office (PO). While sustaining Shadow systems in Iraq and Afghanistan, the Shadow program has become a recognized leader in making a Performance-Based Logistics (PBL) strategy work during war time

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and in harsh desert and mountain environments. This could not have been done without the PO's strong focus on Total Life Cycle Management.

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The Shadow program's success has the other services and foreign militaries lining up to purchase the Shadow and emulate the Army's approach to Shadow management and

employment. In early 2007, the U.S. Marine Corps (USMC) decided to acquire Shadow to replace an aging Pioneer UAS fleet.

Shadow's capabilities and capacity are similar to Pioneer, so the transition should go smoothly. In addition to the USMC announcement of its initial Shadow acquisition plan, the U.S. Navy's VC-6 Squadron will operate two Shadow systems in support of *OIF*.

The Army trained the Navy Pioneer operators in late Spring 2007.

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OEF and *OIF* are really the first battles in which such dependable unmanned aircraft support has been available. The Shadow is seen as a breath of fresh air for those who remember previous wars and the communication breakdowns that are often experienced in the heat of battle. Currently, Shadow imagery is streamed into TOCs around Iraq and Afghanistan. SSG Larry Bennett works in the TOC at Mosul, Iraq. He said, "The first thing I do every day is check that the Shadow video feed is on the big screen so I maintain immediate situational awareness."

It isn't surprising that the Army has been the UAS leader. It flies 90 percent of the UAS missions in Iraq. The Shadow System is fielded at the brigade combat team level, which makes it highly accessible to warfighters and fellow aviators alike. CW3 John DePalo, Kiowa OH-58 pilot, flies every night in Northern Iraq. "I use them [Shadow] every single day. By using Shadow, I've reduced the time to track, launch and destroy targets to as little as 17 minutes, a task that used to take an hour or more," DePalo concluded. The Shadow is reducing the potential risks that pilots in Iraq might have to take to accomplish their mission. Aircrew safety and improved lethality is something you can't put a price tag on. Shadow's demonstrated performance and interoperability capabilities are dramatically enhancing U.S. force responsiveness theaterwide.



SPC Greg Taylor performs his regular safety checks prior to launching the Shadow in Iraq. New technological advances have expanded Shadow's capabilities since its introduction in 2002 to include enhanced loiter time on location, increased operational range and laser pointing. (U.S. Army photo by Tarah Hollingsworth.)

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