

**NOT FOR PULICATION  
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HOUSE COMMITTEE  
ON ARMED SERVICES**

**STATEMENT BY**

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**BEFORE THE HOUSE ARMED SERVICES COMMITTEE  
TACTICAL AIR AND LAND FORCES SUBCOMMITTEE  
UNITED STATES HOUSE OF REPRESENTATIVES  
ON  
US ARMY UNMANNED AERIAL VEHICLE PROGRAMS**

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## **BG MUNDT CONGRESSIONAL TESTIMONY**

**Chairman Weldon, Mr. Abercrombie and distinguished members of the subcommittee, I am pleased to be here today to discuss what we consider to be one of the most successful endeavors in the Army, our Unmanned Aircraft Systems or “UASs”. I am honored to report to you the tenets of our UAS strategy, the status of our current UAS force, and our efforts with the other services. I would also like to discuss our path forward for following the termination of the Aerial Common Sensor.**

**Chances are right now a Shadow unmanned aircraft is being flown by a sergeant and a private in Iraq. The Shadow’s camera is locked on to a suspected member of Al Qaeda or the Iraqi insurgency and is monitoring his movement through the maze of non-descript streets crowded with pedestrians and automobiles. The Shadow system is fully integrated into a complex array of fixed and rotary-winged aircraft, conventional and unconventional ground forces, direct and indirect fires as well as satellite and human intelligence sources. In another location, a second Shadow is ready to launch and provide additional coverage if needed. Conditions change rapidly and the Shadow is ready to adapt to those changes. The Commander of the Task Force and his staff monitor the Shadow information in real time, analyzing the suspected terrorist activities. At their fingertips lies an arsenal of lethal and non-lethal options to unleash on the**

**suspected terrorist if and when the conditions are met. The Soldier-operators will let them know when they are.**

**This same scenario is being played out in multiple Army and Joint formations from the squad to Theater all over Iraq and Afghanistan with Army Unmanned Aircraft Systems. These systems have become critical enablers to our tactical operations across the spectrum of warfare. Commanders have deemed them critical to success. I am here today to share with you how the Army is currently meeting the needs of our forces in the field and how we will meet them in the future.**

**On September 11, 2001, when terrorists attacked our Nation, the US Army only had three Hunter UAS companies in its inventory and less than 200 Soldiers to operate them. Today, our Army has in its arsenal four different types of unmanned aircraft, 489 UAS systems and nearly 5000 trained active Army and National Guard Soldiers to operate them. Many of these Soldiers and systems are currently conducting operations in Iraq, Afghanistan and other locations. This year Army UAS have flown over 5000 combat sorties with a total of 66,414 combat flying hours in support of joint and coalition operations. More importantly, but not as quantifiable, is the fact that Army UASs have saved hundreds of coalition soldiers and Iraqi citizen's lives. The true metric that gauges the power that these systems**

**bring to our current fight is the insatiable demand by our commanders for these assets.**

**To keep focused on our responsibilities to our Soldiers, Joint Force Commanders, and the American people we maintain four tenets to guide our UAS efforts: Soldiers, commonality, competition and cohesion.**

**The centerpiece to the Army's UAS strategy is the soldier. Our UAS Soldier-operators share a common bond with the commanders and warfighters that they support. They live in the same conditions, and eat the same food. They know the quickest way back to their families is to quickly defeat the enemy that faces them. Since 1993, we have maintained a professional UAS career track for our enlisted Soldiers who operate our UASs. This UAS military occupational specialty or "96 Uniform" is one of the most highly sought after jobs by our young recruits entering the Army today. It is also one of the most highly sought after MOSs for sergeants wishing to transfer from combat arms MOSs. With such a high demand, our recruiters are able to select the best and the brightest. These UAS Soldiers have career opportunities all the way up to Command Sergeant Major. A former Hunter UAS Company First Sergeant is now the Command Sergeant Major for the Intelligence Center and School at FT Huachuca. The UAS officer opportunities abound as well. The platoon leader for the**

**Army's first UAS platoon in Desert Storm now commands an Aviation Battalion that just returned from Iraq.**

**All of our 96 Uniforms attend a 22 week block of instruction at the Army UAS training center at FT Huachuca. This state of the art facility takes these Soldiers through an intense course of instruction that includes FAA ground school, intelligence operations, and simulation and flight training. During or after this training many of our Soldiers advance to obtain their private manned pilot licenses. For over ten years the Army has been refining this training based on lessons learned in the field and in combat. At the request of the U.S. Air Force we have provided to them this 96U program of instruction to use as a guide for their new officer UAS Specialty Code which will be a non-rated pilot position.**

**The Army is currently transitioning proponency for both the UAS operator and maintainer job specialties from the Intelligence Community to the Aviation branch. This move will help to improve manned and unmanned aircraft teaming, institutionalize aviation standardization and improve flight safety.**

**We have over 2000 operators for our hand launched Raven UAS systems. These Soldiers are already trained in another MOS and receive two weeks of additional training to learn how to operate the system,**

**maximize its effectiveness and safely integrate it into the airspace. In almost all cases these Soldiers are trained to be infantrymen, tankers, or artillerymen and take on this new role as an additional responsibility. Like their radiomen, front line company commander have these Raven operators tied to their hip to provide the best and quickest information possible when they need it. As they rotate through different units these Soldiers serve as subject matter experts to commanders on the employment of UASs in combat. Some of these Soldiers like this system so well that they often seek to change their current Military Occupational Skill to 96U when they become reenlistment eligible.**

**The second tenet of the Army's UAS strategy is commonality. Our efforts to strive for commonality are typified by the One System UAS Ground Control Station. The Army's One System is a single set of ground equipment that will serve as a common shelter for all of the Army's UASs. The One System will provide tactical commanders with the flexibility to rapidly shift unmanned aircraft to units and locations where they are most needed. Commanders at these locations will be able to use their One Systems to directly control the unmanned aircraft and hand it back to the original unit when the mission is complete. From a logistics standpoint the benefits of the One System are clear; a single set of ground equipment for all Army UASs from Brigade through Corps resulting in reduced logistics, decreased costs, and simplified maintenance. From a training standpoint**

**the rewards are also prevalent; common user interfaces, minimal transition training between airframes and identical training for maintainers. The interoperability benefits are obvious.**

**We have worked very closely with the USMC on the One System, which they are currently procuring seven ground control systems for their Pioneer systems. The USMC is exploring the use of the One System with their Tier II, III and IV systems as well. To date the One System has successfully flown the Shadow, Pioneer, Hunter, FireScout and Warrior UAS.**

**The One System will be Tactical Control DataLink or TCDL compliant, which will provide us a more reliable datalink and more efficient use of the frequency spectrum. The One System will also be NATO Standardization Agreement 4586 compliant which will provide us interoperability across Joint and Coalition unmanned aircraft systems. The One System concept has already peaked interest with our NATO partners. They understand the power of having a single set of ground equipment that can interoperate with an entire fleet of joint and coalition unmanned aircraft.**

**The Army is improving upon the tremendous efforts made by the US Air Force to provide our forces with a remote viewing terminal for**

unmanned aircraft and other aerial sensor feeds. The USAF program is called the Remote Optical Video Enhanced Receiver (ROVER) III. The Rover III provides front line forces the capability to receive imagery directly from unmanned and manned aircraft. The Army, using the Rover III as the building block, intends to upgrade the existing inventory of legacy Remote Video Terminals or RVTs with a One System Remote Video Transceiver that will provide the same capability as the Rover III and the ability to overlay UAS telemetry directly on a moving map for improved situational awareness and targeting.

The Army just completed an Operational Assessment between the Rover III and a One System RVT (OSRVT), enabling receipt of multiple UAS video feeds and compatible with the Army's UAV Common Ground Control Station. Result of this assessment will refine the requirements for the OSRVT Block I which will be cut-in to the production line by FY08 .. The mid to long-term strategy, FY08 and beyond, is to compete, develop and field a Block 2 OSRVT that has transceiver capability that will provide qualified front line Soldiers the capability to communicate with the air vehicle and control the payload. The Block 2 OSRVT will be fielded to the Shadow Platoons and could potentially become the Ground Control equipment for the Small UAS..



**The third tenet of the Army's UAS strategy is competition. We see the true power of leveraging the market place to provide the best capability at the best price. The US Army employs the first UAS to go through the entire competitively selected acquisition process-- the Shadow. Additionally, the US Army has the first competitively selected Medium Altitude Endurance UAS program in the Department of Defense-- the Extended Range Multi-Purpose UAS or "ER/MP" program. We find this competitive approach brings out the best of our industry, provides us with a better product and creates a cooperative environment between our Army and industry. By decreasing our acquisition and support costs we maximize our resources to build more combat power.**

**In those cases where an urgent capability gap surfaces, we will often go through a FAR compliant and rapidly selected acquisition process to meet the immediate needs of the warfighter. We will, however, find the right point in the process to determine if a competitively selected acquisition is warranted. A perfect example of this is our Raven program. The Raven was acquired through our Rapid Equipping Force in 2003. The program has been very successful. We have determined that the requirement is valid across the Army, and we accordingly competitively selected the Raven-B to meet the need.**

**By staying true to the competitive nature of the market and maintaining our acquisition discipline, we are able to provide our Soldiers with the best equipment at the best value.**

**The fourth tenet of our UAS approach is cohesion. Cohesion between the various branches of the Army. Cohesion between our modular and future force designs. And Cohesion with our Joint and coalition partners.**

**Within our own Army, it is extremely important to provide our branches with capability to tap into the power of UASs. Our focus is on data dissemination, interoperability and multi-mission payloads to meet the unique needs of our branches. The One System is a key component of this cohesion. A Warrior operated by the Combat Aviation Brigade will now have the capability during a single mission to provide Signals Intelligence Support to the Army intelligence community while simultaneously serving as a communications relay platform supporting the division communications network.**

**We are also developing Manned-UnManned Teaming or MUM. By teaming manned and unmanned assets we use the strengths of one component to eliminate or mitigate the weakness of the other. This provides our commanders with a very lethal and effective mixture. The key**

**tenet of MUM is that the unmanned portion becomes a direct extension of the manned component.**

**I know you have great interest in how we intend to transform from the Modular UAS force to the Future Combat System UAS force. As FCS unmanned aircraft systems meet their technology readiness levels and resources become available, FCS UASs will be spun out and replace modular systems. In some cases, modular UAS systems may be upgraded to meet FCS requirements. Our senior Army leadership has directed TRADOC, the Army Acquisition Community and Army Headquarters to conduct a UAS Mix Analysis to determine when and how to best transition between the two sets of UASs.**

**We are fully committed to accept and provide Joint UAS solutions for CONOPS, doctrine and tactics, logistics and acquisitions. We are working with our Human Resources Command to fill our personnel Billets at the UAS Joint Center of Excellence (JCOE) with the most qualified personnel possible. Our own UAS Center of Excellence at FT Rucker in Alabama is in weekly if not daily contact with the JCOE Commander, BG Walt Davis, and his staff to ensure our efforts are cohesive.**

**From a material development standpoint, the Army is strongly committed to the Joint UAS Material Review Board run by MG Catto of the**

**USMC. The One System is also a prime example of our commitment to Joint cohesion. We are currently conducting a joint acquisition of the Small UAS with Special Operations Command and the USMC. We are also conducting a collaborative acquisition with the US Navy for FireScout.**

**From an operational standpoint, our cohesion with the US Marine Corps is especially strong. We share similar missions, employ our UASs in similar fashion, and realize that lack of cohesion will result in squandered resources and unnecessary casualties. On today's battlefield you often find Army Shadow units flying in direct support of US Marine Corps Task Forces, and Army formations receiving the same type of support from Marine Corps Pioneers. The Army and US Marine Corps have also worked hard to document emerging TTPs on the employment of tactical UASs. An example of this is the Leaders Guide for TTP on the Employment of Small UASs published by the Center for Army Lessons Learned.**

**Our work with the US Air Force continues as we define the complementary nature of our roles and missions. The Army's selection of General Atomics Warrior UAS to serve as our ER/MP UAS means that we share a common manufacturer. The Army is working with the Air Force to take full advantage of its experience with its Predator A and B programs. Collectively, we are looking at ways of synchronizing our efforts in order to provide the best products at the best prices. We are also working with the**

**Air Force to further define UAS CONOPS, especially along that nebulous line that delineates the tactical, operational and strategic levels of warfare. In the near future you will see Army Warrior UAS operators training with Predator UAS pilots. The Army is working to establish a UAS flying corridor from FT Huachuca in Arizona to Creech Air Force Base in Nevada. This training corridor will also include routes to Yuma Proving Grounds, Twenty-Nine Palms and the National Training Center.**

**Our Raven A UAS continues to provide our front line platoons and companies with an organic UAS capability. The Raven-A consists of three electric-powered, air vehicles, a ground control monitor and an antenna. The air vehicles weigh four pounds each and are launched by hand. We currently have 376 Raven As in our inventory most of which are supporting combat operations in Iraq and Afghanistan.**

**Demonstrating its versatility, our commanders are frequently using the Raven to support operations with the Iraqi Military. Small UAS operate at lower altitudes in restricted airspace that covers their flying envelope. They are also being safely integrated into operations with manned aircraft. An example of this occurred this summer when an infantry company with its Raven, detected and monitored enemy activity. The infantry company was able to use imagery coming in near time from the Raven to direct a strike**

from a manned aircraft. The Raven team was also able to immediately report Battle Damage Assessment and direct another attack.

As I mentioned earlier, we obtained the Raven A through a rapid acquisition to meet an immediate need that we had not previously identified. We have since transitioned to a formal Small UAS Program of Record. We held a competition last summer and selected the Raven B to meet the requirement for the Small UAS. The Raven B provides more capability than the Raven A at a better price. It is currently going through low rate initial production and will go through operational testing this summer.

Our Shadow UAS Platoons have become fully integrated into brigade level operations.

A Shadow platoon consists of four air vehicles, two One System Ground Control Stations , and associated ground equipment. The entire platoon is transportable by two C-130s. We are training operators and manufacturing Shadows at max capacity. When a system rolls off the line, we match it up with a group of twenty two Soldiers who just came out of individual training as operators, mechanics and leaders. We then send the unit through a rigorous 10 weeks of collective training, and then to the combat zone.

**Since 2003, we have fielded 37 Shadow Platoons to our active and National Guard BCTs. Over the next four years we will provide this capability to all of our BCTs bringing the total number to 83 systems. All of the systems are fully resourced with professional career track UAS Soldiers.**

**We are now currently upgrading our Shadow fleet with a bigger airframe that will accommodate the Tactical Control Data Link or TCDL, a more reliable engine and improved avionics to increase our targeting accuracy. We will begin retrofitting our Shadow fleet with TCDL in 2008. Based in large part on its successful operation in Iraq, our coalition partners have shown an interest in purchasing this system. The Shadow has flown more than 65,000 hours in combat.**

**At the beginning of my testimony I told you about a Shadow platoon that is currently conducting operations in Iraq. In less than a year this 22 Soldier platoon has logged over 5000 hours and has helped capture or kill key members of Al Qaeda and the Iraqi insurgency while simultaneously saving the lives of American warfighters. My point here is that our UAS soldiers are well trained, led and motivated. They grew up with this type technology. They are able to safely and effectively integrate their Shadow aircraft in very complicated airspace mixed with rotary winged aircraft and fast moving jets from all members of the coalition. The Soldiers live with**

**the unit that they support. They sleep, eat and work in the same harsh conditions. They share in the victories and suffer in the unit's losses. The impact that this twenty-two man Shadow Platoon has made has been so profound that the Joint Task Force has requested more Shadows to support their operations. This unit has refused more expensive and capable UAS systems stating that it is not the equipment that makes the difference, but how well the equipment is employed, the level of control provided to the supported commander, and most importantly how well the UAS unit is integrated into the commander's scheme of maneuver by first hand knowledge of the commander's intent.**

**With this same model of control and employment in mind, your Army has just competitively selected the Warrior UAS as its Extended Range Multi-Purpose UAS. The Warrior will provide our Division Commanders with an organic UAS capability which they now lack. The Warrior will be capable of conducting multiple missions simultaneously. These include recon, attack, surveillance and communications relay. Using its wide area surveillance sensors, it will be able to detect potential targets and then use its onboard weapons to engage. The One System ground control station will provide Division Commanders the ability to pass Warrior unmanned aircraft forward to be controlled by Brigade Commanders and other coalition partners.**



**We will field Warrior UAS Companies to our Division level Combat Aviation Brigades starting in 2009. A Warrior Company will consist of twelve air vehicles and five One System ground control shelters. The Warrior aircraft will have triple redundant avionics, a heavy fuel engine and will be capable of flying more than forty hours. The system will be manned and operated by UAS career track enlisted Soldiers. Using a Manned and UnManned datalink, our Apache and Armed Reconnaissance Helicopter pilots will have the ability to directly control and receive imagery from Warriors during time critical situations. A Warrior Company will be capable of employing three aircraft simultaneously.**

**The capability gap for UASs at the Division Level is so profound that we are accelerating the Warrior and will begin providing our Division Commanders with a Warrior Block 0 capability in the summer of 2007. The Warrior Block 0 will have all Warrior capabilities except TCDL and automatic take-off and landing.**

**While Warrior is similar in appearance to the Air Forces' Predator and manufactured by the same company, the two systems are profoundly different. The aircraft share only 15% in common material, almost all of that being skin composite. The Warrior is designed for operations in austere conditions in situations that rapidly develop and change. While the Predator is designed to be flown by rated pilots using a reach back**

**capability that enables them to be flown from the United States, Warrior is designed to be flown by enlisted operators using the One System from the combat zone, collocated with the ground tactical commander. Warrior will have maximum network connectivity and processing power to enable full exploitation and dissemination of sensor information**

**We continue to successfully operate our aging fleet of Hunter UASs. The Hunter has been a work horse for our Army since 1995. A Hunter Company consists of six air vehicles and three One System control shelters. We are modernizing our Hunter fleet through spares which will provide us with a heavy fuel engine, more endurance and if needed a weaponized capability. We currently employ this system at the Corps level. To date this system has flown over 13,057 hours in combat. We will begin to draw the Hunter fleet down as more Joint provider UAS systems become available to the Corps Commanders and the Warrior fills the gap at the Division level.**

**We are also successfully employing our small fleet of contractor operated Improved-GNATs (IGNAT) to great effect in the combat zone. We purchased these systems with Congressional plus-ups that you have provided us. We are using the IGNAT fleet to validate Warrior TTPs and help train our commanders on employing this level of UAS. We will draw down the operational use of IGNATs as Warrior systems become available.**

**We continue to work with the Federal Aviation Administration to develop procedures and technology that will enable our Soldiers to operate unmanned aircraft in the National Airspace. We have supplied our UAS training curriculum and aircrew training manuals to the FAA to use as a model for civilian use. We are also working closely with the other services and industry to provide a “Sense and Avoid” technology for our UAS systems. Once the “Sense and Avoid” technology becomes available, the Warrior UAS system will be the first UAS system certified for flight in the National Airspace. We are also working very closely with our coalition partners in NATO to meet the requirements to fly in non-segregated airspace in NATO countries.**

**Reference your question concerning the Army’s termination of the Aerial Common Sensor (ACS) contract and our path forward, it is important to note that the Army did not terminate the ACS program. ACS capabilities remain valid requirements for both the Army and the Navy. The ACS system will provide an order of magnitude improvement over the Defense Department’s (DoD) current fleet of airborne intelligence, surveillance and reconnaissance (ISR) aircraft.**

**In the meantime, OSD directed that the services conduct a joint ISR study aimed at determining the right mix ISR capabilities, across the force**

**that would meet future warfighter requirements. The Army and Navy are co-leads, with the Air Force participating as an integral partner.**

**This study will address the multi-INT airborne ISR needs in the 2015 and 2020 timeframes. It will document the value of adding service multi-INT airborne ISR systems to the network-centric, distributed ISR enterprise currently planned by the Department. The study will use metrics such as timeliness, accuracy, and degree-of-assured support to assess how the unique capabilities of a multi-INT airborne ISR system will provide mission value. The study will include all ISR systems and enablers projected to be available in the 2015 and 2020 timeframes, and explore tradeoffs among manned and unmanned airborne platforms as they relate to multi-INT airborne ISR system capabilities.**

**The results of the study are expected to shape the path ahead for ACS. Additionally, the operational benefits of a joint Army-Navy program will be examined. After the completion of the study, a business case analysis will be performed prior to the establishment of any new acquisition strategy. The final report and brief will be provided to the deputy secretary of defense by July 31, 2006.**

**The delay in ACS will require the Army's current fleet of airborne reconnaissance aircraft, the Guardrail Common Sensor and Airborne Reconnaissance-Low systems, to remain operational longer than originally**

**expected. Based upon this and lessons learned in the Global War on Terror, it is imperative that the Army re-invest near-term ACS funds into both of these critical ISR systems to ensure they remain safe to operate and relevant to counter the current threat. Both systems are playing critical roles in today's fight.**

**In summation, your Army has fully embraced the power that Unmanned Aircraft Systems and other Army aerial sensors bring to warfare now and into the future. As in all of our formations, our Soldiers are the centerpiece of our UAS strategy. They are employing these systems tremendously well. We are focused on commonality to maximize interoperability, improve logistics, decrease training time and reduce costs. We use the competitive marketplace to obtain the best UAS equipment at the best price. And most importantly provide a cohesive UAS path forward within our own service and with Joint and coalition partners.**

**With the termination of the ACS contract, we will leverage existing aerial systems with product improvements to help fill the capability gaps and use the results of the Joint Sensor Study to guide our long-term approach.**

**Your Army continues to evaluate all of its aerial sensor programs. We are constantly looking for new opportunities to bring more capabilities forward and fully synchronize them with our modular and future forces. We**

**appreciate the resources, guidance and assistance that you provide us.  
Thank you for this opportunity to speak to you on this critical issue. We  
look forward to you continued guidance and support. I am ready to address  
any issues that you may have at this time.**