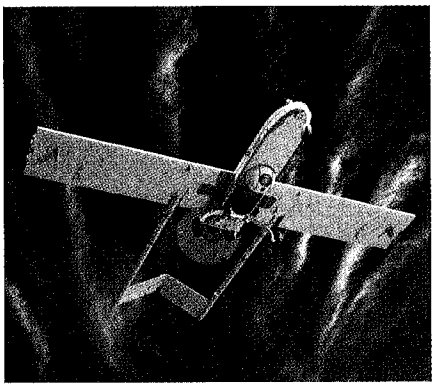

A Shadow RQ-7A tactical unmanned aerial vehicle takes off, showing its sensor payload package.

and a side-view thermal imager. The aircraft are hand-launched and use autoland recovery. The system is transported in two suitcase-size carrying cases. The system provides company- and platoon-level reconnaissance, surveillance, target acquisition and battle damage assessment.

The **Improved-Gnat (I-Gnat)** is a General Atomics Aeronautical Systems product the Army procured in 2003. The Army I-Gnat system consists of three modified I-Gnat aerial vehicles (AVs), one modified I-Gnat shelter, two portable ground data terminal (PGDTs) and associated ground support equipment. The system can provide up to 25 hours of operations, carry up to 450 pounds of payload, has a service ceiling of 25,000 feet mean sea level and is controlled by a C-band data link. The Army I-Gnat was deployed to OIF just 10 months after contract award. This system will augment the Hunter systems in OIF.

The **Extended Range/Multi-Purpose (ER/MP) UAV** will replace and improve upon the Hunter. U.S. Army Training and Doctrine Command's (TRADOC's) operational requirements document (ORD) was approved by the Army Requirements Oversight Council, chaired by the Army vice chief of staff, in December 2003. The Army Aviation Transformation Plan calls for fielding the first ER/MP system in 2008. The Army will use a rapid and disciplined acquisition process, including a competitive fly-off, to determine a best-value solution for this capability. ER/MP will be a mainstay of the division/corps commander's battle-set for land warfare operations.

The ER/MP system will consist of a sufficient number of air vehicles and modular mission payloads/mission equipment packages (MMPs/MEPs) to support the required operational tempo. The AV will accommodate a minimum mission payload capacity of 200 pounds and be capable of simultaneously carrying and controlling two different types of mission payloads/mission equipment packages. Currently, there are three threshold payloads (interchangeable), including an electro-optic/infrared (EO/IR) with laser range finder/designator, a synthetic aperture radar/moving target indicator (SAR/MTI) and a heavy communications relay payload.

The contract for system development and demonstration is planned for award in the second quarter of FY 2005. First unit equipped is scheduled for FY 2009.

Future Combat System Unmanned Aerial Vehicle Systems (UAVS)

The Future Combat System unit of action (UA) is organized in combat configurations to be 100 percent mobile and completely self-sufficient for up to 72 hours of high-intensity contact upon delivery into the area of operations. Each UA echelon commander will have the combat leverage to make contact with and defeat numerically superior forces employing equal or better weapons systems. The UA brigade combined arms teams down to platoon level will possess systems that amplify their combat effectiveness: organic sensors, effects, intelligence, surveillance and reconnaissance (ISR) capabilities, and communication links at each echelon to the joint command, control, communications, computers, intelligence, surveillance and reconnaissance (C^4ISR) system. The UA model provides a communication connectivity that enables the brigade commander to synchronize his deployed elements so that he can better shape the battlespace at the lowest levels. The UA will enable the commander to execute the battle with superior situational understanding, shape the battlefield with standoff precision fires and effects, and ensure battlefield mobility. It will maximize the effectiveness of standoff while maneuvering on a noncontiguous distributed battlefield against an adaptive threat.

The commander's requirement for enhancing surveillance throughout the UA requires a robust suite of systems. These systems are organic to the UA and its subordinate organizations, functioning under a tiered approach. UAVSs are part of this approach, enabling air-to-air, air-to-ground and ground-to-air teaming.

The tiered system is expressed in terms of the class of UAVS that corresponds to the unit echelon they normally support: Class I UAVS—platoon level; Class II UAVS—company level; Class III UAVS—battalion level; and Class IV UAVS—brigade level.

The **Class I UAVS** is controlled and operated at the platoon level within the UA and serves to provide the soldier situational awareness in diverse terrain. The Class I UAVS is deployed as a system consisting of at least two air vehicles, an operator interface and all necessary equipment for operations, transport and routine maintenance. The Class I UAVS consists of the unmanned aerial vehicles system, a support platform (legacy or future U.S. Army wheeled transport vehicle), and a command and control interface. On April 28, 2004, the commanding general of TRADOC approved the requirement to field Raven or a Raven-like capability for the modular brigades and FCS-equipped UAs as an interim capability until micro air vehicle technology is available.

The **Class II UAVS** is controlled and operated at the company level within the UA and serves to provide reconnaissance, security/early warning, target acquisition and designation for the infantry company and MCS platoon in support of line-of-sight/beyond line-of-sight (LOS/BLOS) and non-line-of-sight (NLOS) cooperative engagements. The Class II UAVS consists of the UAVS, as part of an UA vehicle with an on-board command and control interface. The Class II UAVS is an integrated component of the UA weapon systems. During assaults, the UAVS will be deployed or redirected in real time as required by the UA. Through UAVS control consoles, UAVS data will be linked through the existing C^4I network to an extended group of users. The Class II UAVS is a vehicle-mounted system that will provide the infantry company with enhanced dedicated imagery. The Class II UAVS AV will have an operational endurance of one hour out to a range of 6 kilometers. On April 28, 2004, the commanding general of TRADOC approved the requirement to continue development of an organic air vehicle to meet Class II UAVS requirements.

The **Class III UAVS** is a multifunction aerial system capable of providing reconnaissance, security/early warning, target acquisition and designation for precision fires, throughout the battalion area of influence by remotely over-watching and reporting changes in key terrain, avenues of approach and danger areas in open and rolling, restrictive, and urban areas. The aerial system will provide information from operating altitudes and standoff ranges in both day/night and adverse weather. The aerial system will be capable of communication relay, detecting mines, chemical, biological, radiological, nuclear (CBRN) detection, and meteorological survey for the non-line-of-sight (NLOS) battalion to deliver precision fires. All sensors do not have to be carried simultaneously as a package, with the exception of the meteorological sensor (embedded). The AV will, however, be capable of carrying an EO/IR package and/or target acquisition/

designation. A Class III UAVS consists of these basic elements: air vehicles (AV) with payloads, launch and recovery system, mobility platforms and transport containers for the systems. The Class III UAVS AV will have an operational endurance of six hours on-station at a range of 40 kilometers. On April 28, 2004, the commanding general of TRADOC approved the requirement to use an increased capability Shadow UAV as threshold capability for Increment 1 FCS Class III UAVS.

The **Class IV UAVS** will provide the capability to impart reconnaissance, security/early warning, long endurance persistent stare, target acquisition and designation, and wide area surveillance that has the ability to team with air-ground forces throughout the UA. The aerial system will provide information from operating altitude and standoff range in day and night and adverse weather. The aerial system will be capable of acting as a communication relay, performing emitter mapping, performing CBRN detection, assisting with battle damage assessment (BDA) and performing meteorological surveys for the unit of action throughout the brigade's area of influence.

The FCS lead systems integrator and the Army selected the Fire Scout RQ-8B as the Class IV UAV. The Fire Scout is a vertical take-off and landing (VTOL) UAV. The system will integrate a training sensor, humidity sensor, joint tactical radio system (JTRS) two-channel radio for aerial vehicle command and control, and the following plug and play mission equipment packages: EO/IR/laser designator range finder (LDRF), synthetic aperture radar (SAR)/moving target indicator (MTI), chemical, biological, radiological, nuclear (CBRN), signal intelligence (SIGINT) and communications relay. The RQ-8A model Fire Scout is an improved version of the basic RQ-8A model, which incorporates the following features: four-blade enhanced airfoil main rotor system, increased fuel capacity, upgraded gearbox rating and improved tail rotor. The RQ-8B Fire Scout is being integrated into the unit of action as part of the program's system development and demonstration. The RQ-8B Fire Scout air vehicle will be developed in a collaborative effort with the Navy. The Army will use the Navy's contract to procure the air vehicles. Both services will have unique command and control integration contracts. FCS deliveries are scheduled to begin in FY 2007 with limited user test (LUT) starting in FY 2008 leading to an initial operational capability (IOC) in FY 2011.

1-800-336-4570

That's the toll-free number to call AUSA national headquarters. The AUSA Action Line is open 8:30–5:00, Monday through Friday, except holidays. If you have a question about AUSA, give us a call.

Air Traffic Control Systems

Army air traffic services provide Army aviation the assets required to ensure safety and survivability on the modern battlefield. Tactical air traffic control (ATC) supports air and land component commanders' automated airspace command and control requirements and ATC for aircraft operating in terminal and rear operation areas. In turn, air traffic services support is critical to fixed-base force projection platforms, a function that mitigates risks to Army aircraft operating from Army airfields worldwide.

To meet these needs, the Office of the Product Manager for Air Traffic Control Systems (PM ATC), assigned to the Aviation and Missile Command at Redstone Arsenal, Ala., manages the modernization of the tactical and nontactical ATC equipment.

Major tactical ATC programs include the air traffic navigation, integration and control system (ATNAVICS), tactical airspace integration system (TAIS) and the mobile