



Drones: The Next Aero Gusher?

The impending commercialization of UAS industry may tap Alabama as a wellhead for this enterprise.

BY MIKE WARD

Ten years ago, you didn't know them at all. Ten years from now, they may be as common as transformers on utility polls.

Today you know them as drones, the latest in military weaponry. Ten years from now, they may be part of the rescue team that flies out of the local firehouse.

The people who design and manufacture them call them "unmanned aircraft systems" (UAS), and their designs now go well beyond military applications. As this \$6 billion industry emerges, Alabama is positioned to take advantage of its military cluster at Redstone Arsenal to also capitalize on the commercialization of the industry.

Growth in the commercial sector will hinge on successful efforts to allow drones to operate in the same airspace used by piloted aircraft. The Federal Aviation Administration (FAA) plans to select six sites later this year to test the integration of unmanned systems into the national airspace.

"The Tennessee Valley area enjoys one

The RQ-7 Shadow 200, a surveillance drone built for the Army by AAI Textron, a Maryland company with offices in Huntsville

of the highest concentrations of UAS expertise in the world, and we are looking forward to the opportunity to contribute in groundbreaking ways to this newest and most exciting area of aviation," says Dallas Brooks, with Wyle CAS Inc., in Huntsville.

Brooks recently relocated to Huntsville from the Pentagon, where he led the Department of Defense's UAS Task Force charged with UAS airspace integration.

Alabama UAS companies are currently pooling their resources to pitch Alabama as one of the FAA test centers, says Brooks.

At the forefront of industry efforts in Alabama is the north Alabama chapter of the Association for Unmanned Vehicle Systems International. The Pathfinder Chapter of AUVSI is the oldest and largest in the world and is the current "Chapter of the Year," according to Terry Griffin, the chapter president.

Drawing card of chapter membership is Redstone Arsenal, since the U.S. Army is the leading user of UASs. The Army recently announced successful testing of ground-based 3-D radars developed to help UASs avoid collisions.

Jurisdiction over all Army UAS programs is exercised by Huntsville's Redstone Arsenal-based Army commands and agencies. As a result, a number of UAS companies also are located in the region.

"Our UAS industrial and research base is very strong," says Brooks. "We have the aviation simulation capability at the University of Alabama in Huntsville, the Redstone Test Center, multiple NASA facilities, dozens of major aviation manufacturers with UAS capability, and of course the strong support of a community that understands the importance of growth."

Non-military unpiloted aircraft operations are currently limited to sites regulated through certificates of authorization issued by the FAA. These sites allow flights no higher than 1,200 feet and not beyond a one-mile radius of ground observers.

The AUVSI estimates, in a 2010 paper, that integrating pilotless aircraft into the national airspace for a broad range of potential uses could add 23,000 UAS jobs over the next 15 years, with more jobs in secondary markets like supplying sensors,

software and advanced materials.

Potential non-military uses of UASs include fighting fires, delivering disaster relief, flying in areas that have been contaminated by a chemical or other agent and aiding in hot pursuit law enforcement. Unmanned aircraft are uniquely suited to locating stranded people in disaster situations.

"In a Katrina-like situation," Brooks says, "swarms of very small unmanned aircraft can literally go house-by-house, reading thermal signatures that tell rescuers whether survivors are inside, even

how many there are. Aerial surveying can cut mapping time by 90 percent. Imagine Google maps that are updated constantly. Real-time traffic control that changes stoplight patterns, opens additional lanes and decreases bottlenecks through constant surveillance and adjustment. Unmanned FedEx and UPS air service directly to the smallest towns will be cheaper than the trucks we use today. The possibilities are endless."

Mike Ward is a freelance contributor to Business Alabama. He lives in Huntsville.

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Blips on the Alabama Drone Radar

Key Dates

APRIL 28, 2011 — News Corp's digital news portal The Daily used a drone—a Micro MD4-1000—to film and broadcast footage of the tornado damage Alabama suffered the day before. Four months later, FAA officials told Forbes the agency was still studying whether the News Corp drones were operating within FAA guidelines.

AUGUST, 2011 — Huntsville-based drone developer Chandler /May Inc. bought AeroMech Engineering, of San Luis Obispo, a producer of the small unmanned aircraft.

JUNE, 2012 — The Switchblade—new-generation drone the size of a model plane—passed field tests at the Army's drone development facility at Redstone Arsenal, in Huntsville.

Key Neighbors

EAST — Georgia Tech Research Institute, a premier drone study center, is just over the line at Menlo

WEST — Northrop Grumman drone facility is just over the border at Moss Point, Mississippi

Key Players

RAYTHEON, HUNTSVILLE — developer of Tomahawk Block IV missile, a one-way, low-flying, 550 mph remote-guided UAS

GRIFFON AEROSPACE, HUNTSVILLE — produces fiberglass composite UAVs for the Army. "We've made more than any manufacturer in the country," says Griffon's Gary Tuttle.

AUSTAL USA, MOBILE — makes littoral combat ships that include "plug and play" modules to deploy helicopters, missiles or drones, depending on the mission.

Key Drone Defense

Boeing engineers in Huntsville and Albuquerque, N.M., are working on a weapon to shoot down drones. They had successful tests in 2009 at White Sands Missile Range in New Mexico.