Boeing/Insitu ScanEagle UAV Launched From Ship; Completes Historic Autonomous Flight

ScanEagle, a long-endurance fully autonomous unmanned aerial vehicle (UAV) developed and built by Boeing [NYSE:BA] and The Insitu Group, completed an historic autonomous flight following its launch from a ship.

The 40-pound UAV took off autonomously -- without operator control -- via a pneumatic wedge catapult launcher mounted aboard Shackleton, a 58-foot fishing boat. ScanEagle then flew pre-programmed and also operator-directed waypoints over Puget Sound, Wash., waters doing area surveillance with its standard electro-optical camera.

The milestone flight ended with ScanEagle landing autonomously aboard Shackleton as well. It was recovered using Insitu's patented "Skyhook" system, in which the UAV catches a rope hanging from a 50-foot-high pole. The Skyhook system allows ScanEagle to be runway independent and operate from forward fields and now ships at sea.

"We believe ScanEagle's autonomous recovery aboard Shackleton was a first for fixed-wing UAVs," said Al Awani, Boeing ScanEagle program manager. "Launching and recovering a UAV on open water is not an easy task, and the ScanEagle system performed flawlessly. Its ability to take off and land autonomously on land or sea gives customers much more flexibility than other UAVs."

Following ScanEagle's capture over the water, the pole or "boom" was rotated back to the ship for retrieval by the crew and the UAV was immediately launched again for another ship-based operation.

Dave Sliwa, Insitu director of flight operations, added that ScanEagle's fully autonomous capability combined with its unique Skyhook system, means the vehicle will return home damage free.

"Other UAVs that aren't able to land autonomously or that use netting for retrieval often end up with nicks and dings or worse," Sliwa said. "Our system has now demonstrated trouble-free launch and recoveries on both land and water."

Boeing foresees customers using ScanEagle vehicles individually or in groups to loiter over trouble spots and provide intelligence, surveillance and reconnaissance (ISR) data or communication relay. As standard payload, ScanEagle carries either an inertially stabilized electro-optical or an infrared camera. The gimbaled camera allows the operator to easily track both stationary and moving targets, providing real-time intelligence to users. Capable of flying above 16,000 feet, ScanEagle has also demonstrated the ability to provide persistent, low-altitude reconnaissance.

For a vehicle of its size, ScanEagle's endurance/payload combination is unmatched. The UAV, which is four-feet long and has a 10-foot wingspan, can remain on station for more than 15 hours. Future planned variants will have an endurance of more than 30 hours.

Another key design feature of the UAV is its internal avionics bay. The avionics bay allows seamless integration of new payloads and sensors to meet emerging customer requirements, and ensures the vehicle will be able to incorporate the latest technology as it becomes available.

ScanEagle, which made its first flight in 2002, has most recently participated in the Joint Forces Command Forward Look exercises that will conclude in June 2004. Forward Look is a series of exercises and experiments that began in December 2003 to improve interoperability and increase data fusion among multiple UAVs in operational scenarios.

The Insitu Group, located in Bingen, Wash., develops miniature robotic aircraft for commercial and military applications. Insitu, which introduced the first UAV to cross the Atlantic Ocean, developed its Seascan UAV to serve the commercial fishing industry for fish spotting, and is considering vehicles for other commercial applications. For more information about the company, see www.insitugroup.net.

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