THAT'S UNMANNED, BABY!

Too amazing for even an Austin Powers or James Bond movie, pilotless systems such as Northrop Grumman's Fire Scout (above) continue to dramatically improve the efficiency of humanitarian, civil and military operations

Unmanned vehicle systems are known throughout the world as the latest in military technology, offering greater cost effectiveness and endurance than many manned air, ground and maritime vehicles. Though the military has provided a proving ground for decades, unmanned systems are now emerging in new markets and stretching the bounds of their initial industries.

One high-profile arena for unmanned systems and robotics emerged earlier this year when the 8.9-magnitude earthquake struck near Sendai, Japan, crippling the nuclear power plant in Fukushima and flooding the area with tsunami waves. Robotics of all kinds responded to the disaster, with ground robots aiding in search-and-rescue in the rubble and underwater vehicles searching for bodies in the tide. Overhead, Northrop Grumman's Global Hawk surveyed the damage to the reactor and the surrounding community. Based out of Andersen AFB in Guam, Global Hawk was able to safely gather thermal data from the nuclear reactors during 26 missions, each of which averaged around 22 hours—impossible for manned aircraft.

"The foundation and the focal point for us today is Global Hawk," says Paul Meyer, sector vice president and general manager of the Advanced Programs and Technology Division at Northrop Grumman Aerospace Systems. The unmanned aircraft is utilized in much the same way as the manned U-2 spy plane, operating at twice the altitude of commercial aircraft. Meyer likens the Global Hawk to satellites.

"We can monitor to some extent the temperature around the environment, and, being at 60,000 feet, we're well above the significant radiation plume," he says of the aircraft's Fukushima mission.

In addition to its work for the Air Force, the aircraft is used for environmental monitoring by NASA and the National Oceanic and Atmospheric Administration.

Northrop Grumman's other unmanned air assets point to current and future uses for the technology. Fire Scout, the company's unmanned reconnaissance helicopter, is currently deployed on a U.S. Navy ship and has been used to monitor piracy activities. "We have several cases of detecting, monitoring and following counternarcotics elements on the seas until additional assets could be brought to bear," says Meyer.

Newest to Northrop Grumman's air arsenal is Firebird, an optionally manned aircraft. Operational at around 25,000 feet, the medium-altitude, long-endurance Firebird was designed as an alternative intelligence, surveillance and reconnaissance aircraft solution to legacy systems in operation over Afghanistan, allowing for rapid deployment for various and multiple mission requirements. The market includes the military as well as homeland security areas under U.S. Customs and Border Protection. By making the aircraft pilot-optional, Northrop Grumman aims to make it an attractive two-for-one offer.

Meyer says he can envision a day when unmanned aircraft possibly take over cargo routes for companies like FedEx, "in particular from coastline to coastline. Commercial aviation could find itself in a position where we trust unmanned systems enough for that type of cargo transport."

To make that scenario possible, the FAA would have to open the national airspace to unmanned systems, a legal issue upon which the Arlington, Va.–based Association for Unmanned Vehicle Systems International (AUVSI) concentrates part of its efforts.

A nonprofit association, AUVSI focuses on the issues of its member companies, including Northrop Grumman, to foster relationships and build new opportunities for unmanned systems use. That focus will be particularly sharp at the association's annual conference, AUVSI's Unmanned Systems North America, August 16–19 in Washington, D.C. "AUVSI is committed to working with decision-makers and stakeholders to advance the fielding of all unmanned systems," says Michael Toscano, president and CEO of AUVSI. ●

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