

# HELP FROM ABOVE

UAVs ASSIST IN AUTOMATING LOGISTICS, HEALTH CARE



The DP-12 Rhino, above, is designed for Humvee-based transportable vertical take-off and landing (VTOL).  
The DP-6 Whisper, next page, is the first electric tandem UAV.

One of the areas of ongoing interest from the Department of Defense (DoD) is the new and growing field of unmanned aerial reconnaissance and transport. This is reflected in a wide-ranging series of Small Business Innovation Research (SBIR) solicitations to industry. In response to DoD interest, there has been, over the years,

an exceptional array of innovations in the field of unmanned air vehicle (UAV) technology.

In 2004, Dragonfly Pictures, Inc., was selected by the Defense Advanced Research Projects Agency (DARPA) to design a UAV that could find targets and laser-designate those targets for remote weapons, as well as perform communications



relay and find hidden landmines.

From this initial innovation eventually arose the DP-5X Wasp, a long-range tactical multi-mission UAV that could both fit in the bed of a Humvee and carry a 100-pound payload.

But that system, which looks like a miniature version of a normal helicopter (sans cockpit), was just the beginning. Subsequent DoD SBIR contracts included everything from biometric recognition (for identifying humans at night or in adverse terrain) to extended communications systems.

“Over the past years, we’ve migrated away from imaging, which was the genesis of the company, and are now more focused on areas such as the communications relay for extending the range of robots from ships, or delivering small-units logistics like food, water and medicine in austere environments,” company owner Michael Piasecki said. “Those SBIRs have allowed companies like mine to raise millions for product research and development.”

That pivot appears to be a timely one. The military has said publicly that UAV technology represents the future of military logistics and health care.

Gary Gilbert, research manager of the Army’s Telemedicine and Advanced Technology Research Center (TATRC), said that unmanned vehicles could be the key to providing medical support without risking further casualties, particularly in high-consequence landscapes.

“The growing planned use of unmanned systems and robotics on the future battlefield affords both great opportunities for medical force multipliers as well as significant



operational medicine and medical research challenges,” Gilbert wrote in a recent Army release. “In situations where medical resources are already spread thin, e.g. during a mass casualty event or natural disaster scenario, mobility of medical resources becomes of paramount importance. Unmanned systems could serve as a force multiplier for medical operations in future environments as their capabilities continue to evolve and mature to include providing medical logistics support, aid in the delivery of telehealth to the point of care, and provide opportunities for expedited casualty evacuation.”

**“The SBIR program really allows small companies like mine to innovate,” Piasecki said.**

The culmination of this tech for Piasecki’s team came in the form of its DP-14 Hawk, a dual-rotor UAV that can fly at more than 100 knots, carry up to 430 pounds, and can drop a payload within a three-meter radius. According to Dragonfly, the system is primarily a vehicle to offer autonomous resupply to medics

on the ground, as well as retrieving injured soldiers.

“It will be extremely useful for medics who are widely dispersed and have difficult access,” Piasecki said. “It will give them better tools to save lives in the field.”

Released in 2017, the DP-14 Hawk has already been featured as the model UAV in a study conducted by NASA, in coordination with the University of North Dakota, that examined the design requirements of such systems for use in cargo delivery scenarios.

“The SBIR program really allows small companies like mine to innovate,” Piasecki said. “Overall, it has really accelerated the democratization of technology.” ✨



Dragonfly Pictures, Inc.

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