Natick uses Efficient Airdrop Testing

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The Airdrop Technology Team at Natick Soldier Research, Development and Engineering Center uses commercial drop zones to keep Science and Technology research projects on schedule and within budget.

NATICK, Mass. (Jan. 26, 2012) -- Drop zone testing options for the Airdrop Technology Team at Natick Soldier Research, Development and Engineering Center have been used to ensure Science and Technology research projects stay on schedule and within budget.

Commercial drop zones such as Skydive Arizona and Red Lake are ideal facilities for Airdrop's preliminary testing.

"We started using these drop zones a lot for early parts of the cargo drop programs and tests," said Steve Tavan, Airdop Technology Team research leader. "I am allocated a budget and have a defined schedule, as are lots of my other colleagues."

"If I had to do everything at the most stringent testing level, I don't even think it would happen, because we're working on cutting-edge technology," Tavan explained. "It's all new and different, so it has to be checked out thoroughly."

The Airdrop Technology Team has been improving airdrop capabilities at an ever-increasing rate over the last 10 years. The goal of the Army and Air Force is to reduce the risk of ground fire by flying higher and farther away from the intended airdrop system impact points. Within the past six years, Airdrop's focus has been precision landing.

"We have a lot of Soldiers out there in austere bases," Tavan said. "We have lots of places where men and women are in combat situations and might not be able to get supplies through any other means than from the air."

The team has worked extensively on sophisticated flight software (essentially, an auto-pilot) that includes the ability to avoid crashing into ground terrain. Six months after they started working on collision avoidance, a Joint Urgent Operational Needs Statement was released that required terrain-avoidance software.

Tavan was able to respond to this need and confirm that the software was ready to test-fly, and the first systems with that capability went into theater about 18 months later having withstood rigorous testing at Yuma Proving Ground, Ariz., where all systems are rigorously tested before fielding.

"We scouted a particularly difficult ravine to mimic the kinds of drop zones we have in Afghanistan," said Tavan. "The software is there now, and we continue to make it better. That's something that we would have had to start at square one, but we didn't because we had it going."

Besides upcoming projects, which include video navigation and additional degrees of control authority for the parachutes, the Airdrop team is working on reshaping the flow of air by cutting a set of slits through canopies, which have flaps that are can be opened in flight.

"This will decrease the amount of weight for motor and batteries, save weight and save cost," Tavan said.

The Airdrop Technology Team is clearly focused on efficiently providing the war fighter with what they need in the timeliest manner possible.