

Kaman Proposes KARGO UAV to Marine Corps for Autonomous Re-Supply



The Kaman KARGO UAV is designed to carry cargo in a conformal pod (right) or sling-loaded (left). *KAMAN CORP.*

ARLINGTON, Va. — Kaman Corp., builder of the K-MAX unmanned helicopter for the Marine Corps, is proposing an autonomous quadrotor unmanned helicopter for the Marine Corps to enhance its re-supply capabilities in expeditionary advanced based operations, the company said in a Sept. 21 press conference and news release.

The KARGO UAV is designed to be a robust, reliable, easy-to-operate UAV that can be shipped in a standard ISO container, quickly assembled by two personnel, and flown with internal pod-contained cargo or external sling-loaded cargo.

The KARGO UAV will be a quadrotor with a length and width of 24.4 feet, a height of 7.5 feet and a weight of 1,340 pounds. It will be powered up to a speed of 121 knots by a 300-shaft horsepower gas turbine engine to carry payload up to 800 pounds. Range will vary according to payload. For example, a 600-pound payload could be carried 143 nautical miles one way. The range with no payload is planned for 523 nautical miles.

“The Kaman KARGO UAV is the only system of its class that is purpose-built to provide deployed Marines, Sailors, Airmen, Soldiers and Coast Guard autonomous resupply in the lethal, fluid combat environment that future military operations will entail or for regular logistics missions. Our deployed service men and woman have persistent logistics challenges that we are answering with this reliable, maintainable and affordable solution,” said Ian Walsh, CEO of Kaman Corp., in the release.

Kaman has been flight-testing a 50%-scaled demonstrator UAV of the KARGO UAV to refine the design. The demonstrator was developed using Kaman's internal research and development funds. The company plans to build a full-scale KARGO UAV and flight-test it in 2022.

Kaman has extensive experience in fielding autonomous cargo UAVs. Two of the company's K-MAX UAVs were operated by the Marine Corps a decade ago in the mountains of Afghanistan. Romin Dasmalchi, senior director of business development, government, at Kaman, said in the press conference, said that the two K-MAX UAVs delivered accrued 4.5 million pounds of cargo and saved numerous lives by reducing the needs for vulnerable truck convoys. The two UAVs, designated CQ-24A by the Marine Corps, were stored for several years, but Kaman was contracted by the Corps to restore them to flight and upgrade them for more demonstrations of an autonomous cargo delivery capability.

Dasmalchi said that the KARGO UAV would reduce manpower and training requirements for the Corps and provide a self-deploying capability. He said the Marine Corps has not published requirements for a cargo UAV but are in the process of developing its requirements.

Walsh said the KARGO UAV has potential to serve as a vertical replenishment aircraft for the Navy's at-sea logistics force.

He said the KARGO UAV is being designed with a gas turbine engine to meet a high technology readiness level to reduce cost and risk.

"The KARGO UAV leverages commercial off-the-shelf components as well as thousands of hours of automated and autonomous flight data from Kaman's K-MAX TITAN program, to reduce schedule and technical risk," Kaman said. "Kaman selected Near Earth Autonomy as a partner on the pilot KARGO UAV program. Leveraging ongoing and concurrent collaboration between the

two companies on the U.S. Marines Corps K-MAX TITAN UAS, Near Earth will provide obstacle avoidance and other technologies such as precision landing, sense and avoid, and navigation in a GPS-denied environment.”