# LHO

LITTLE HORNED OWL

## INTELLIGENCE VALUE

The need for increasingly sophisticated unmanned aerial vehicles (UAVs) for intelligence purposes requires a maturation of the technology to include the need for quiet UAVs. The Little Horned Owl program is developing ultra-quiet mini UAVs (defined as having a take-off weight of 55 pounds or less) to further enable critical intelligence and military missions.

Mini-UAVs are becoming increasingly ubiquitous in everyday life for delivering packages, conducting inspections, surveying land, and performing other functions in difficult-to-reach locations. Civilian, military, and intelligence applications for mini-UAVs require sophisticated designs that enable acoustically quiet operation. The LHO program seeks to develop and validate UAVs that can both quietly operate and meet Federal Aviation Administration (FAA) defined requirements for small UAV operations. Enabling technologies for an integrated mini-UAV include: aircraft shaping to reduce acoustic emissions, electrically-driven ducted fans, and quiet flight control. LHO performers are developing prototype mini-UAVs that can be tailored for mission-specific flight requirements and that meet or exceed program metrics for acoustic threshold and FAA required flight profiles for operation in U.S. airspace.

Two different designs have been developed and will be available for transition to government users. Each design has a flight radius of 30 miles with 30 minutes time-on- station while carrying a payload of 10 pounds. The LHO program began in April 2018 and will conclude in 2022.

## PRIME PERFORMERS

- Boeing
- Northrop-Grumman

## TESTING AND EVALUATION PARTNERS

- U.S. Air Force Research Lab
- U.S. Air Force Test Center Aero-acoustic Research Complex at White Sands Missile Range
- U.S. Naval Surface Warfare Center
- U.S. Naval Air Warfare Weapons Division-China Lake

## KEYWORDS

- Low acoustic small UAV aircraft
- Novel access, acoustic perception & minimum infrastructure

Boeing LHO vehicle has an internal electrically driven ducted fan on the right side of the fuselage with an inlet & exhaust duct. Adjacent to the fan is a 400 cubic inch internal payload bay between the wing and canard.

Northrop LHO vehicle has quad rotors for vertical take-off & landing (VTOL) with a quiet cruise tractor propeller for fixed wing flight. The 386 cubic inch internal payload bay is in the rear of the center fuselage over the wing.

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