

Lightweight Aerostat System (LAS)

Customs and Border Protection, the Coast Guard and the Secret Service need overhead EO/IR surveillance of border crossings, seaports, airports, outdoor VIP events, etc. that is both less costly and intrusive than aircraft or Unmanned Aerial Systems (UAS) while providing around the clock coverage. Law enforcement and emergency response agencies need these surveillance capability and low cost, responsive, and mobile equipment for wide area resilient and durable communications after a natural disaster, major accident, or terrorist act that degraded existing communications systems.

The most efficient means to meet these needs is a low cost, mobile aerostat system. Towers are height limited, providing only short range coverage. Aircraft or UAS are expensive and have limited endurance. Aerostats provide coverage of large area, comparable to aircraft or UAS, but with persistence of days and weeks instead of hours. However, traditional aerostats are large, manpower intensive and cannot operate in adverse weather conditions. Their ground equipment has very limited mobility and lengthy set-up times, restricting use to a few fixed sites. Carolina Unmanned Vehicles has developed a **Lightweight Aerostat System (LAS)** to remove these limitations, creating a very cost effective system.

LAS consists of several optional payloads attached under a small specially designed tethered blimp, called a Helikite, and a trailer Carrier that stores the Helikite and the required winch, sensors and helium tanks. The LAS blimp can fly at 1000+ feet for low cost, long term 24/7 coverage for a week or more without maintenance or downtime, operating at a fraction of the cost of comparable aircraft or UAS. Traditional aerostats cannot operate in high winds unless fairly large, typically with 200 Lb of lift or more. This large size makes them unsuitable for deployment to small bases or rapid redeployment. LAS uses the patented Helikite lifting aerostat, which has lifting surfaces that generate aerodynamic lift to support the blimp in winds which would drive traditional designs into the ground. With the Helikite, LAS can be smaller and more mobile than traditional aerostat systems yet still operate in high winds. LAS is able to fly in 50 knot wind or more. With superior mobility, mission utility and adverse weather capability, LAS still requires only two people for all operations.

LAS is suitable for surveillance, communications relay and research for DOD and Homeland Security missions. CUV has provided LAS to the USAF, Sandia National Laboratory, and Lockheed Martin. LAS forms part of the Small Tactical Multi-Payload Aerostat System (STMPAS) built for the US Army to provide ISR capability for small tactical units in Afghanistan. CUV is a small Woman-Owned company focused on small aerostats and Unmanned Aerial Vehicles. Contact: Mike Rogers, (919) 851-9898, merogers@carolinaunmanned.com

