5,000-10,000 POUND HIGH ALTITUDE - LOW OPENING (5-10K HALO)

OVERVIEW:

5-10K HALO

G-11

The 5,000 to 10,000 pound (5-10K) High Altitude – Low Opening (HALO) system is part of a scalable family of HALO systems capable for delivering payloads ranging from 50 to 42,000 pounds. This HALO system combines the accuracy benefits of a high velocity system with the payload survivability of a low velocity system, while using as many standard inventory components as possible. In order to conduct airdrop in a high threat environment, the Air Force is often required to operate at altitudes as high as 25,000 feet. From these altitudes, a parachute must fall very quickly to exit the airspace and to minimize the drift effects due to wind. However, only certain types of cargo are rated to survive a ground impact at such a high rate of speed. By deploying a larger parachute closer to the ground, the rate of fall is greatly decreased, allowing for a larger variety of payloads to be dropped.

DESCRIPTION:

LCADS-LVs

G-11s

This project was developed by NSRDEC with the support of the Joint Improvised Explosive Device Defeat Organization. The goal of 5-10K HALO was to be able to drop larger, heavier items than the typical 2,200lb Container Delivery System but without the need to retrograde expensive components. As such, all system components were chosen with cost as a driver. A one time use plywood platform was designed to withstand the Air Force's transportability requirements for both C-130 and C-17 aircraft while one time use Low Cost Aerial Delivery System – Low Velocity parachutes (LCADS-LV) were also used in the system. The 5-10K HALO system uses a pre-existing 28-foot ringslot parachute during the first stage of descent, falling at two to three times the speed of a conventional high-velocity parachute system. This increased rate of fall minimizes the time the system is exposed to the winds aloft, the greatest source of error in a ballistic airdrop. Because the higher rate of fall minimizes drift effects, the HALO system can also be more accurate than a conventional high velocity payload. At approximately 2,000 feet above ground level, an activation device releases the 28-foot ringslot and deploys one or more low velocity parachutes. When retrograde is possible or in the training environment, one or two G-11 parachutes can be used, depending on the payload weight. When recovering the airdrop equipment is not possible, a cluster of 2, 3 or 4 LCADS-LV parachutes can be used, depending on the weight. This combination of parachutes will slow the payload's descent and provide a soft ground impact, increasing payload survivability. Rigging procedures and a parts list have been developed for the system and it is awaiting for a requirement from the user community.

POINT OF CONTACT:

US Army Natick Soldier Research, Development & Engineering Center
Aerial Delivery Directorate
COMM: (508) 233-4495
Email: usarmy.natick.rdecom-nsrdec.mbx.nati-amsrd-nsc-ad-b@mail.mil