

AETE completes hung-up mannequin testing in Arizona



MCpl Arthur Ark

AETE, 436 Squadron, 434 Squadron, Transport Standardization and Evaluation Team, Lockheed Martin and MILTEX personnel stand with a test mannequin, in front of a CC130J aircraft equipped with tufting, following hung-up mannequin testing at Marana Regional Airport, Arizona. Tufts are small strips of fabric located on the fuselage of aircrafts. They are used to evaluate airflow characteristics in testing areas.

By the Aerospace Engineering Test Establishment

Personnel from Aerospace Engineering Test Establishment (AETE), 436 Squadron, Transport Standardization and Evaluation Team, 434 Squadron, Lockheed Martin and Miltex, deployed to Marana Regional Airport in Arizona from January 21 to February 7, 2022 for two weeks of hung-up mannequin testing on the CC130J aircraft. The complex test plan required months of planning, coordination and technical design across various units while taking advantage of the test team's extensive technical and operational experience.

During the test flights, instrumented "crash test dummy" mannequins of varying weights were used to measure the stress on the aircraft's anchor cable, retrieval winch, para-jumper, and static line.

The mannequins were dragged outside in the slipstream of the aircraft to represent the aerodynamic effects of a hung-up jumper. This scenario is a rare but dangerous occurrence resulting from equipment malfunction when performing static line jumps. Using a winch onboard the aircraft, the test team verified the capability of the aircraft's equipment to retrieve the hung-up mannequin without exceeding any limits.

The test team also conducted static line mannequin drops using different types of parachutes to gather data on the mannequins. Throughout testing, the varied weights of the mannequins helped measure how weight can affect loads and flying characteristics. Using different mannequin weights made it possible to consider jumpers of varying body types.

The data, including acceleration, loads, strains, pictures and videos, will be analyzed by the test team. The results may allow for an expansion of the weight envelope and for the removal of operational restrictions.

Departmental priorities

Coronavirus (COVID-19)



Sexual misconduct



Mental Health



Conduct, culture, diversity and inclusion



Date modified:

2022-03-30