NM STATE UNIVERSITY

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NEW MEXICO STATE UNIVERSITY (NMSU)
PHYSICAL SCIENCE LABORATORY (PSL)
TECHNICAL ANALYSIS & APPLICATIONS CENTER (TAAC)

Subject: Airworthiness determination for Aerostar UAS

Airworthiness Analysis Determination

New Mexico State University (NMSU), Physical Science Laboratory (PSL), Technical Analysis & Applications Center (TAAC) has determined that the Aeronautics Defense Systems' (ADS) Aerostar unmanned aircraft (N617NM and N618NM) are airworthy. This determination is based on this UAS meeting (1) Aeronautics Defense Systems (ADS) established manufacturer's type design for the Aerostar Unmanned Aircraft (2) ADS's flight operation of the Aerostar UA model in excess of 50,000 hours, (3) NMSU's subsequent review and analysis of ADS's airworthiness data, and (4) flight operation of the Aerostar UA for 25 sorties consisting of 43.1 flight hours during the past 10 months, under the authority of a COA issued by the FAA ATO, effective September 25, 2008 through September 24, 2009.

System and Operational Capability Evaluation

NMSU's; evaluation of Aerostar (N617NM and N618NM) not only included an analysis of the ADS's Aerostar UA model type design and operational data, but also the evaluation of all flight components, positive control of the Aerostar by both the external and internal pilots' control stations, and successful maneuverability of the Aerostar during flight over extended time periods. All flight characteristics were normal and there were no anomalies or significant malfunctions.

Risk Mitigation

Even though the Aerostar UA has demonstrated that it can fly for extended periods of time and the control by both the external and internal pilot is effective, safety is enhanced through certain flight restrictions. In order to basically eliminate any hazard to person and property on the surface or in the air the Aerostar will only be flown over very sparsely populated areas that have a low volume of air traffic. To further enhance safety and mitigate risk the Pilot-in-Command shall ensure that (1) appropriate data are provided to the Fort Worth AFSS for the issuance of a D-NOTAM, (2) Albuquerque Air Route Traffic Control Center is notified of the flight in advance, (3) flight crew personnel are involved in a pre-flight briefing that outlines the flight scenarios and contingency procedures, (4) thorough inspection of the Aerostar is performed immediately before each flight to ensure it is in physical condition for safe flight, (5) sufficient number of visual observers are in place (surface or airborne) so direct visual observation of the Aerostar can be maintained at all times, (6) radio communication is maintained on the Las Cruces Airport UNICOM frequency, and (7) most importantly, that the safety of persons and property are given priority over accomplishing mission objectives. Each flight shall be conducted in compliance with the general provisions and special provisions contained in the Certificate of Authorization (COA) issued by the FAA for this UAS activity.

Steve Hottman
Deputy Director