

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

October 30, 2007

**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) Orbiter UAS, Serial Number 808, is airworthy. This determination is based on this UAS meeting (1) Aeronautics Defense Systems (ADS) established manufacturer's type design for the Orbiter UAS, (2) ADS's flight operation of the Orbiter in excess of 500 hours, (3) NMSU's subsequent review and analysis of ADS's airworthiness data, and (4) flight operation of Orbiter, Serial Number 808, within Restricted Area R-5107, McGregor range.

**System and Operational Capability Evaluation**

NMSU's; evaluation of Orbiter, Serial Number 808, not only included an analysis of the ADS's Orbiter model type design and operational data, but also the evaluation of all flight components, positive control of the Orbiter from the ground control station, and maneuverability of the Orbiter during flight. These flight evaluations were performed during eight flights totaling 5.6 hours of flight time. All flight characteristics were normal and there were no anomalies or malfunctions.

**Risk Mitigation**

Due to the limited number of hours of flight operation on this UAS, the Orbiter, Serial Number 808, will be only be flown in an environment that will not create a hazard to person and property both in the air and on the surface. Safety will be achieved through the following criteria; (1) the flight operations area is located only over an uninhabited surface area, (2) flight operations will be restricted to a one-mile radius of the orbiter pilot at 1200 feet AGL or lower, Class G (uncontrolled) Airspace, (3) the flight operations area is located immediately adjacent to R-5107B, White Sands Missile Range. Therefore, it is highly unlikely that any manned aircraft would operate in this airspace. Yet, to enhance safety, there will be at least one visual observer to assist the pilot in detecting any aircraft, and (4) all flight operations will be in compliance with the criteria and special provisions contained in the Certificate of Authorization (COA) issued by the FAA for this UAS activity.