



University of Connecticut  
*School of Engineering*

Department of  
Mechanical Engineering

February 18, 2011

RE: Airworthiness Statement for Maxi Joker UAV used at University of Connecticut

The purpose of this memo is to do cement the process used to certify the airworthiness of the Maxi Joker unmanned aerial vehicle (UAV), which is the subject of this COA application. This UAV is to be used solely for research purposes and operated in uninhabited areas at University of Connecticut's Horse Barn Hill Farm. The UAV platform is based on commercially available Maxi Joker 3 helicopter. The UAV platform is carefully inspected for airworthiness at multiple stages during the construction and assembly phases. Before the helicopter's first flight, every component is extensively inspected and tested. These inspections are conducted by an R/C pilot with over five years experience in building and flying R/C aircraft. Each servo is individually tested for range of motion and control linkages and swash plate is tested and calibrated prior to flight. Blades are balanced to performance standards. Immediately prior to flight, a thorough pre-flight check is conducted (see Operation Procedure document for checklist). Complete mission can be simulated using the ground station software that includes a realistic model of the helicopter to make sure that the mission can be performed safely and within the parameters of the helicopter's flight envelope. For each flight, a detailed log is maintained including the flight time, duration, repairs, and regular performance and structural evaluations. Associated documents with this COA application further describe the hazard analysis, safety guidelines, and standard operating procedure for the Maxi Joker UAV.

The Maxi Joker was successfully flight tested in December 2010 at a restricted airspace. The results of the flight tests prove the airworthiness of the airframe. We are fully confident that the Maxi Joker UAV is an airworthy platform to conduct our research in a safe and controlled manner.

Sincerely,

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