



February 11, 2009

**RE: Airworthiness Statement for Yamaha RMAX Helicopter used by the Virginia Tech Unmanned Systems Laboratory at Virginia Polytechnic Institute and State University**

The purpose of this memo is to document the certification process used to certify the airworthiness of the Yamaha RMAX Helicopter outlined in this COA application. The RMAX is used solely for research purposes and is operated in uninhabited areas at Virginia Tech's Kentland Farm.

The RMAX is a factory-built unmanned aircraft, assembled to very high standards at the Yamaha factory in Japan. There are an estimated 1,200 RMAX aircraft of this design currently flying in Japan; the company maintains parts support for the US operators through an office in Cypress, California. This office maintains contact with all US end users and provides notices in reference to operational issues as they may arise. The contact at the company is Lindsey Myers (Yamaha Sky Division).

Prior to first flight, all servos, linkages, belts, pulleys and engine components are carefully inspected using the inspection procedures recommended by Yamaha. The inspectors at this initial stage are an RC pilot with several years of experience and a commercially-rated pilot with 1,700 hours of flight time in a variety of aircraft.

Prior to all flights, the RMAX will be carefully inspected for airworthiness using the checklist included in the Airworthiness\_assurance\_RMAX document (included in the COA application). Two preflight inspections are performed by two different individuals prior to flight. The first preflight occurs at the lab before the helicopter is transported to Kentland Farm. The second preflight occurs just prior to flight, and is conducted by the pilot. The mission coordinator collects the preflight forms and checks the preflight off of the Mission Coordinator Checklist. Flight logs are kept by the mission coordinator to summarize the flight, lessons learned and any corrective actions determined to be necessary for the next flight.

Virginia Tech maintains contact with other US RMAX users, in the event that they have experienced operational issues that would be critical to the safe operation of Virginia Tech's RMAX. Likewise, Virginia Tech is committed to sharing safety of flight issues with other RMAX operators, to maintain an overall safe operation of the fleet.

Sincerely,

Kevin Kochersberger, Ph.D.