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### **Aurora Flight Sciences wins NASA Contract for UAV Applications Using Robust Flare Planning Logic**

Cambridge, MA, March 9, 2009 – Aurora Flight Sciences announced today that the company has been awarded a NASA contract to develop a new guidance, navigation, and control capability aimed at increasing the reliability of unmanned air vehicle (UAV) operations during the landing flare phase of flight. “Aurora’s new technology represents a critical step towards achieving the goal of a ‘crash proof’ aircraft,” said Joe Parrish, Aurora Flight Sciences’ Vice President of Research and Development.

The largest fraction of incidents involving UAVs occurs during the landing phase of flight. The most challenging maneuver during this phase is the landing flare, which is used to arrest the aircraft’s airspeed prior to touchdown. Conducting a safe flare maneuver sometimes requires mixing different control surfaces in an unconventional and/or complex way.

To this end, the initial program effort will be focused on recent theoretical advances in Optimal Control Theory and applying them to a simulated UAV autoland system. The autoland system will be capable of generating a flare maneuver guaranteed to safely land the aircraft. It will also account for prevailing environmental conditions and any damage to the aircraft. Simulations over a number of different scenarios will be carried out on Aurora’s Flight Simulation Platform (AFSP) using realistic and sophisticated UAV models. These simulations will be used as a proof-of-concept for applying the automated flare maneuver to actual UAV Automatic Take Off and Landing (ATOL) systems.

Aurora envisions two potential applications resulting from the proposed innovation. The first and most immediate application is the deployment of a flare-planning controller on Aurora’s fleet of UAVs. A second and broader application is in applying these new advances in Optimal Control Theory to elements in both manned and unmanned systems. For unmanned systems, Aurora views this effort as a technical opportunity that will eventually assist in improving overall UAV safety and reliability.

#### **About Aurora Flight Sciences**

Aurora Flight Sciences designs and builds robotic aircraft and other advanced aerospace vehicles for scientific and military applications. Aurora is headquartered in Manassas, VA and operates production plants in Bridgeport, WV and Columbus, MS and a Research and Development Center in Cambridge, MA. To view recent press releases and more about Aurora please visit our web site at [www.aurora.aero](http://www.aurora.aero).

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