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Aurora Positive Pressure Relief Valves Perform As Planned

Cambridge, MA December 18, 2007 – [Aurora Flight Sciences](#)' Positive Pressure Relief Valves (PPRVs) functioned as planned during the recent space shuttle Discovery mission, averting a potentially damaging overpressure situation on its primary payload, the Harmony module for the International Space Station (ISS).

Discovery was launched on October 23, 2007, and delivered the Harmony module to the ISS. Harmony will be utilized to attach new scientific research laboratories such as the Kibo Japanese Experiment Module built by the Japanese Space Agency. Aurora's PPRVs will be used on Kibo module when it is launched next year.

During Discovery's mission, pressures inside the Harmony module rose due to a slight increase in air temperature, causing the valves to open up and vent excess air. The valves are flight safety critical hardware designed to prevent an overpressure condition from arising inside the module. If pressures were allowed to rise unchecked, damage could occur to the module's structure and internal systems. The valves use a two stage design to detect the pressure rise and safely vent the air, until the pressure is reduced to an acceptable level.

"Aurora's Positive Pressure Relief Valves have flown before on each US built space station module. This is the first time that we have obtained post-flight data which shows that they were in fact utilized and functioned as designed," said Javier de Luis, Chief Scientist of Aurora Flight Sciences.

[Aurora's Payload Systems](#) was contracted by Boeing to develop the PPRVs to maintain a pressure below 15.2 psi during launch and initial on-orbit activities of all USOS and JAXA pressurized ISS habitation and laboratory modules and nodes. This is accomplished using a unique, completely pneumatic trigger-valve mechanism to enable the PPRV to function during all phases of operation.

The PPRV satisfies many critical design and performance criteria, including a high maximum flow rate, extremely low leak rate, small differential between crack and full-open pressures, extended lifetime, as well as mass and volume constraints. In addition, the PPRV was demonstrated to meet these requirements under the worst-case combination of environmental conditions, including thermal, pressure, and vibration. As flight critical hardware, the PPRV is subject to the fullest rigor of NASA quality standards for reporting, inspection, and analysis of spaceflight components.

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 Clarksburg, 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.

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