

SPACE OPERATIONS SYMPOSIUM (B6)  
Human Spaceflight Operations (1)

Author: Mr. Laurence Price

Lockheed Martin (Space Systems Company), United States, laurence.a.price@lmco.com

## ORION MULTIPURPOSE CREW VEHICLE EXPLORATION FLIGHT TEST OBJECTIVES

**Abstract**

The Orion Multipurpose Crew Vehicle (MPCV) is being developed to explore the solar system with the safest, most reliable spacecraft possible to successfully execute a series of increasingly challenging human exploration missions. Orion has completed preliminary design and development testing. The objectives of the orbital flight test of Orion have been developed to exercise critical risk mitigations early in the design phase to achieve the most affordable exploration system. This paper will describe the development of the test to provide timely engineering data sufficiently prior to first human flight to affordably incorporate into the Orion design. Test objectives address mitigation of 10 of the top 16 contributors to loss of crew (LOC) and loss of mission (LOM) risks, while enabling the government/industry team of Orion, Space Launch System, Mission Operations Directorate and Ground Processing Directorate to develop affordable hardware software and operations. The flight will perform a 3,000 nautical mile orbit, higher than any human designed spacecraft since Apollo, to achieve a high velocity/energy entry representing 84