

NASA Advisory Council Recommendation

Specify Mission Objectives 2012-01-02 (HEOC-02)

Recommendation:

The Council recommends developing specific mission objectives for Exploration Mission-2 (EM-2) that justify the need for a crewed lunar orbit mission.

Major Reasons for the Recommendation:

The current mission objective for EM-2 is listed as, "Demonstrate crewed flight beyond Low Earth Orbit (LEO)." Crewed flight beyond LEO was demonstrated more than 40 years ago in the Apollo program. NASA needs to show how EM-2 fits within the architecture for future human exploration beyond LEO and ensure that the objectives for a crewed lunar mission are consistent with the cost and risks involved.

Consequences of No Action on the Recommendation:

NASA leaves itself open to public criticism and loss of Congressional support if it cannot sufficiently justify the need for conducting a mission such as EM-2.

NASA Response:

NASA concurs with comment. Mission objectives for Exploration Mission-2, our first planned test flight with crew, has the primary mission objective of exercising the Environmental Control/Life Support Systems with the intended crew of four in a beyond LEO environment. Although this test flight could be accomplished in LEO, the added benefit of exercising the mission control team in planning and executing the overall escape/insertion burns, navigational waypoints, and command/communications blackout zones is something that this generation of flight controllers has not yet experienced. We assert that these benefits are commensurate with the risks associated with exposing our crew to a beyond LEO mission and attaining exploration objectives to demonstrate necessary capabilities for exploration missions to asteroids, cis-lunar space, and ultimately Mars. Additionally, NASA continues to assess other potential mission profiles that could be accomplished during EM-2 that utilize, to the fullest extent possible, the capabilities of the Block 1 Space Launch System and Orion spacecraft.