

SPACE OPERATIONS SYMPOSIUM (B6)
Training Relevant for Operations, including Human Spaceflight (3)

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COMMERCIAL SPACEWALKING: DESIGNING AN EVA QUALIFICATION PROGRAM FOR SPACE
TOURISM

Abstract

In the near future, accessibility to space will be opened to anyone with the means and the desire to experience the weightlessness of microgravity, and to look out upon both the curvature of the Earth and the blackness of space, from the protected, shirt-sleeved environment of a commercial spacecraft. Initial forays will be short-duration, suborbital flights, but the experience and expertise of half a century of spaceflight will soon produce commercial vehicles capable of achieving low Earth orbit. Even with the commercial space industry still in its infancy, and manned orbital flight a number of years away, little doubt exists that there will one day be a feasible and viable market for those courageous enough to venture outside the vehicle wearing nothing but a spacesuit, with nothing but preflight training to rely upon. What that Extravehicular Activity (EVA) preflight training entails, however, has yet to be defined. While a number of significant factors will influence the composition of a commercial EVA training program, a fundamental question remains: “what minimum training standards must be met to ensure a safe and successful commercial spacewalk?” Utilizing the experience gained through NASA’s Skills program – designed to qualify NASA and International Partner astronauts for EVA aboard the Space Shuttle and International Space Station – this paper identifies the attributes and training objectives essential to the safe conduct of an EVA, and attempts to conceptually design a comprehensive training methodology meant to represent an acceptable qualification standard.

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