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Commercial Spaceflight Safety and Emerging Issues (1)

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FAA LICENSING AND THE NASA COMMERCIAL CREW PROGRAM

Abstract

NASA's Commercial Crew Program (CCP) will develop two new human space flight vehicles that will be commercially-operated and carry people to and from low Earth orbit. This innovative government and commercial partnership is a first for human space flight and builds on the success of NASA's Commercial Resupply Services (CRS) program that provides cargo and return services on commercially operated vehicles to support the International Space Station. Throughout NASA's history, human space flight has been overseen by NASA. In the Commercial Crew Program, regulatory oversight for public safety will be done by the Federal Aviation Administration's Office of Commercial Space Transportation after NASA certification. The FAA currently licenses the launch and reentry of U.S. commercial providers under the CRS program and has licensed over 280 commercial launches since 1989.

The transition from a historically government-run activity to a government-commercial partnership has generated several safety challenges. One key consideration of the Commercial Crew Program is to enable commercial operators to build one vehicle that meets not only the needs of NASA as the government customer but also the needs of future commercial customer needs including affordable cost of operations. NASA's focus is on crew safety and mission success while FAA's focus is on ensuring public safety. A Memorandum of Understanding (MOU) between NASA and FAA was signed in 2012 to avoid conflicting requirements and multiple sets of standards.

This paper will describe the challenges and successes to date of the FAA's role in the Commercial Crew Program as a regulator of public safety in commercial space transportation. The paper will cover issues in identifying and reducing the amount of traditional government requirements for human space flight for commercial operators, spectrum allocation, the role of government astronauts during FAA-licensed flights, interagency collaboration, and identify future challenges and milestones as the public safety oversight role transitions from NASA to the FAA. The purpose of the paper is to provide an understanding of new and innovative approaches to commercially-operated spaceflight safety from a regulatory perspective while maintaining safety and reliability in commercial orbital human space flight.