

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Commercial Human Spaceflight Programmes (2)

Author: Mr. Kelvin Coleman

Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States,
kelvin.coleman@faa.gov

Ms. Jennifer Bailey

Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States,
jennifer.bailey@faa.gov

Ms. Tara Halt

Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States,
tara.r-CTR.halt@faa.gov

Ms. Rachita Puri

Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States,
rachita.puri@faa.gov

Mr. John Sloan

Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States,
john.sloan@faa.gov

REGULATORY PREPARATION FOR U.S. COMMERCIAL HUMAN SPACE FLIGHT

Abstract

The United States (U.S) Federal Aviation Administration's (FAA) Office of Commercial Space Transportation is preparing for expiration of a clause in U.S. law that has prohibited development of safety regulations for commercial human spaceflight (HSF). Since passage of the 2004 Commercial Space Launch Amendments Act, there has been a "learning period," or what is popularly referred to as a "moratorium," on adding additional safety regulations to protect people onboard vehicles.

While the FAA published limited regulations for human spaceflight in 2006 in response to the 2004 law, the U.S. Congress also stated the "the regulatory standards governing human space flight must evolve as the industry matures so that regulations neither stifle technology development nor expose crew or space flight participants to avoidable risks as the public comes to expect greater safety for crew and space flight participants from the industry."

The expiration of the learning period has been extended by the U.S. Congress three times. The current expiration date is October 1, 2023.

As flight rates by industry increase, the U.S. Congress is considering whether to extend the learning period or to let it expire. During 2021, the FAA licensed eight commercial launches (orbital and suborbital) and three reentries with humans onboard.

The purpose of this paper is to describe current activities the FAA is developing to address occupant safety onboard commercial launch and reentry vehicles. The FAA is pursuing three major efforts to prepare for more robust future human spaceflight regulations. The paper will discuss establishment of an Aerospace Rulemaking Committee (SpARC) which will bring launch and reentry operators, government agencies, academia, and other interested parties together to discuss a framework for human spaceflight regulations. The paper will also discuss the FAA's effort to review and update the 2014 Recommended Practices for Human Space Flight Occupant Safety by adding additional information on how operators could show they comply with the recommended practices, and by incorporating lessons learned from recent commercial human spaceflight. The third area of concentration for the FAA is consensus standards

development through organizations like ASTM International and the International Organization for Standardization. The paper will discuss how FAA-licensed operators follow the standards when designing and operating their HSF vehicles.

The paper may be useful to industry and countries that are considering models to adapt for new national frameworks for commercial space transportation, including hosting vehicles that would carry people onboard.