

IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)
Commercial Spaceflight Safety and Emerging Issues (1)

Author: Mr. Kelvin Coleman

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

Mr. Timothy Arel

U.S. Federal Aviation Administration (FAA), United States, timothy.arel@faa.gov

Ms. Hannah Browne

U.S. Federal Aviation Administration (FAA), United States, hannah.brown@faa.gov

Ms. Brooke Teferra

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

Ms. Emily Sisneros@faa.gov

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

Mr. John Sloan

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

AIRSPACE INTEGRATION OF U.S. COMMERCIAL SPACE LAUNCHES AND REENTRIES

Abstract

The increase in commercial space transportation operations has shed light on the urgent need for airspace systems to modernize practices related to the safe and efficient use of airspace to ensure the safety of all users and the non-participating public. In the United States, commercial launches/reentries and spaceport operations are regulated by the Federal Aviation Administration's (FAA) Office of Commercial Space Transportation, and airspace integration of space operations is coordinated and executed by the FAA Air Traffic Organization's (ATO) Space Operations group.

The purpose of this paper is to describe FAA's current process to regulate, coordinate, and integrate commercial space transportation operations into air traffic systems, and to identify growth opportunities for coordinating operations affecting international airspace systems. Common themes include increasing collaboration and situational awareness between commercial space providers, range and spaceport personnel, air traffic control, and other relevant stakeholders.

This paper will cover commercial launch, reentry, and spaceport operation licensing and the regulatory required letters of agreement with air navigation service providers. The paper will further discuss the coordination of Notices to Air Missions (NOTAMS); airspace management procedures and techniques; the application of aircraft hazard areas into airspace systems; mission planning including international coordination; and how the FAA coordinates real-time mission support. Emerging challenges include streamlining coordination efforts for the integration of space operations into airspace systems through data dissemination to key stakeholders such as air traffic personnel for safety critical decisions, and the development of best practices for coordinating operations that impact both the launching state and other states.

The paper may be useful to space agencies and authorities, international civil aviation authorities, air navigation service providers, and industry as a model to evaluate and consider for the integration of

commercial space transportation operations into airspace systems. In particular, the paper may be useful for countries modifying or developing new, national frameworks to address domestic and international space launches and reentries.