

The Regulatory Role of the Federal Aviation Administration

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**Federal Aviation
Administration**



Overview

- **The FAA's regulatory role**
- **Human space flight**

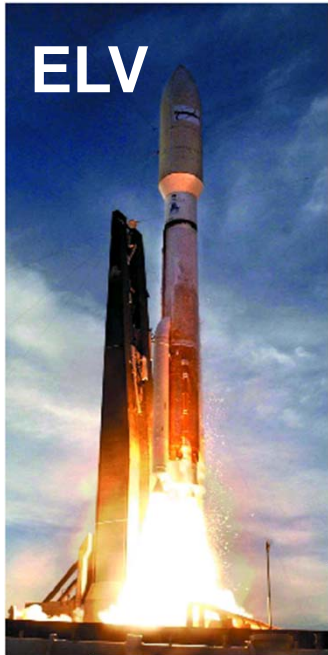


Regulatory Structure

- **Congress**
- **Executive Branch**
 - Federal Aviation Administration – space transportation
 - Federal Communications Commissions – space communications
 - National Oceanic and Atmospheric Administration – remote sensing
- **Judiciary**



Mission



Air Launch

Launch & Reentry Sites



Launch & Reentry



Sea Launch



Human Space Flight

Launch and Reentry

- **Launch means to place or try to place a launch vehicle or reentry vehicle and any payload from Earth**
 - In a suborbital trajectory,
 - In Earth orbit in outer space, or
 - Otherwise in outer space.
- **Reentry means to return or attempt to return, purposefully, a reentry vehicle and its payload, crew or space flight participants, if any, from Earth orbit or from outer space to Earth.**

U.S. Spaceports



Types of Launch Sites



Sea Launch



**Oklahoma
Spaceport**



California Spaceport



**Kodiak Launch
Complex**



**Mid-Atlantic
Regional Spaceport**



**Florida
Spaceport**



Mojave Air and Space Port



Licensing and the One-Stop Shop

- **Elements of a license review for launch and reentry**
 - Policy
 - Payload review
 - Environmental
 - Safety review
 - Financial responsibility

- **180 days**

Commercial Space Launch Amendments Act of 2004

- **On December 23, 2004, President Bush signed into law the CSLAA, which:**
 - Promotes the development of an emerging human space flight industry and
 - Makes the FAA responsible for regulating commercial human space flight
 - Establishes an “informed consent” regime for space flight participants

Definitions

- ***Suborbital Rocket*** – a vehicle, rocket propelled in whole or in part, intended for flight on a suborbital trajectory, and the thrust of which is greater than its lift for the majority of the rocket-powered portion of its ascent.
- ***Crew*** - employee of a licensee, or of a contractor or subcontractor of a licensee, who performs activities in the course of that employment directly relating to the launch, reentry or other operation of or in a launch vehicle or reentry vehicle that carries human beings.
- ***Space flight participant*** - an individual, who is not crew, carried within a launch vehicle or reentry vehicle.

CSLAA

- **Provides FAA responsibility for crew and space flight participant safety**
 - Limits that responsibility for eight years
 - Unless there has been a death, serious injury or close call
 - Prevents even individualized license conditions to protect passengers or crew absent regulations
- **Leaves unchanged the FAA's ability to protect the general public**

CSLAA

- **A holder of a license or permit must inform any crew and space flight participants that the U.S. Government has not certified the launch vehicle as safe.**
- **An RLV operator must inform a space flight participant in writing about**
 - the risks of the launch and reentry
 - the safety record of the vehicle type, including government launches.
- **Waivers of claims**

New Entrants

- **Armadillo Aerospace**
- **Bigelow Aerospace**
- **Blue Origin**
- **SpaceX**
- **Virgin Galactic**



Governmental Space Activity

- **FAA authority has limits**
 - Chapter 509 does not apply to launches or reentries or the operation of launch or reentry sites “the Government carries out for the Government.”
- **How to apply and understand this**
 - When most government launches are contracted to commercial companies

Commercial Orbital Transportation System

- **A NASA initiative to encourage commercialization**
- **Fixed price contracts**
- **Two operators: SpaceX and Orbital Sciences Corporation**
- **FAA licensed**
- **Dragon's reentry**

