



**Federal Aviation
Administration**

Range Commanders Council 2015

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The Role of Commercial Spaceports in Securing America's Future:

An Economically Strong America is Essential
to a Secure America

Presentation Overview

- Current Environment Specific to Commercial and Federal Launch Sites
- FAA COE-CST Framework for Commercial Spaceport Operations
- Going Forward

Douglas L. Loverro
Deputy Assistant Secretary of Defense
for Space Policy

“There is an intersection between defense needs and commercial needs that we need to learn how to exploit. You cannot exploit them if you are fearful of them. You can only exploit them by inviting them in.” Oct. 16, 2014 - ISPCS 2014

<http://goo.gl/OLCEZ8>



Deputy Assistant Secretary of Defense Loverro

National Space Policy - June 28, 2010

To promote a robust domestic commercial space industry:

Goal:

Energize competitive domestic industries to participate in global markets and advance the development of: satellite manufacturing; satellite-based services; space launch; terrestrial applications; and increased entrepreneurship.

Question?

How have DoD, FAA & NASA implemented these policies?

Program Investments

US Government Investment in Commercial Space

Agency	Program	Budget
DARPA	XS-1	\$37m 2014-2016
FAA AST	COE-CST	\$1m/yr for 10 years -2020
NASA	Commercial Crew	Total \$15.07b 2014
	Commercial Cargo	

NASA Commercial Cargo

- Commercial Cargo:
 - SpaceX-SL 37 Kennedy Space Center
 - Falcon/Dragon
 - 4 successful dockings with ISS
 - Orbital Sciences-Mid-Atlantic Regional Spaceport MARS
 - Antares/Cygnus - 3 successful dockings
 - Catastrophic failure October 28, 2014
 - Replacing suspect AJ-26 engine with RD-181

NASA Commercial Crew

- CCtCap: **\$6.8** billion awarded Sept. 2014 to Boeing and SpaceX
- SpaceX- **\$2.6b**
- Commercial Spaceport investments
- Leasing orbital site at Vandenberg & 2 sites at Cape Canaveral
- Brownsville Spaceport - commercial orbital site
- Leasing high-altitude sub-orbital facility at Spaceport America - test site

CURRENT ENVIRONMENT



After delivering more than 5,000 pounds of supplies and experiments to the International Space Station last month, the SpaceX Dragon cargo spacecraft is set to leave the orbiting laboratory on Tuesday, Feb. 10.

Photo Courtesy: SpaceNews

DARPA XS-1- \$37 million

- The Boeing Company-working with Blue Origin
- Masten Space Systems-working with XCOR Aerospace
- Northrop Grumman Corporation-working with Virgin Galactic
- Likely costs & range schedule will determine if these companies use commercial launch sites

FAA AST COE-CST

- Commercial Space Transportation - AST
Division of FAA

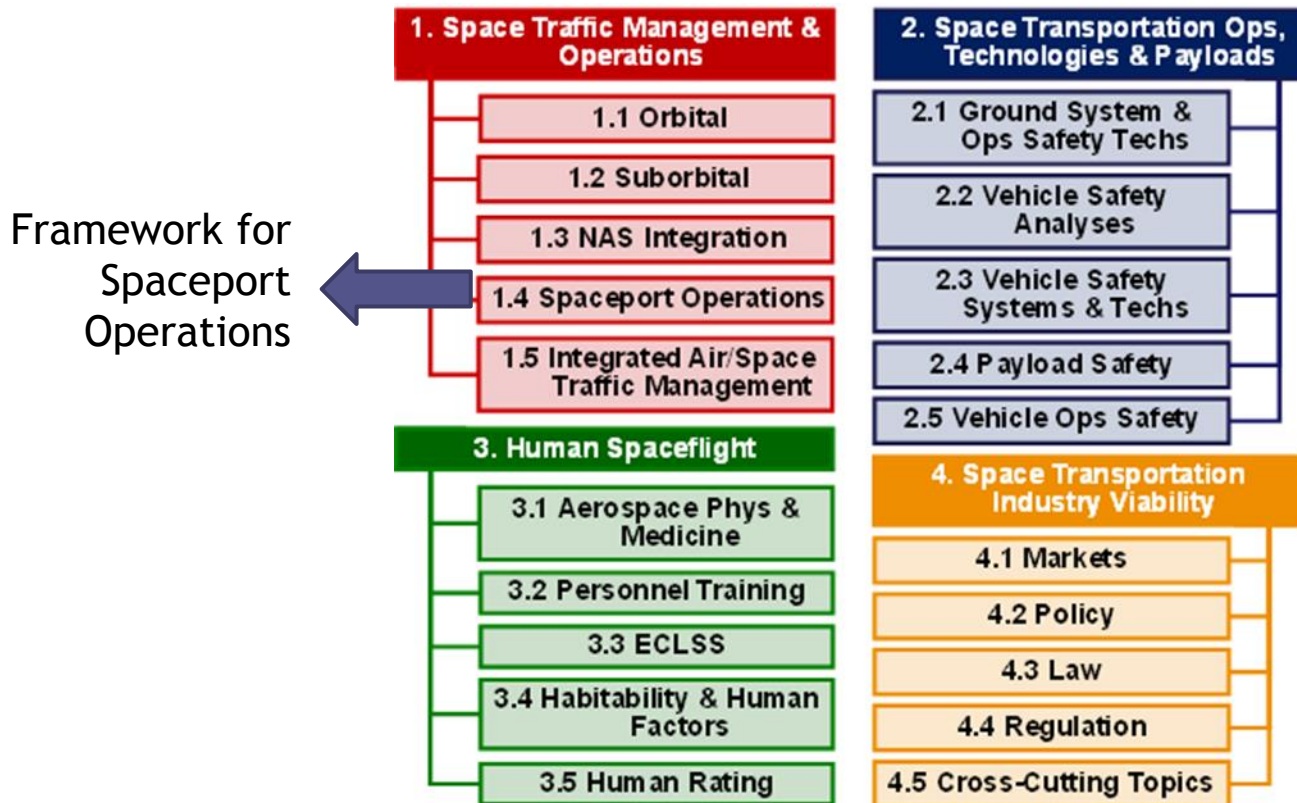
FAA Center of Excellence for Commercial Space Transportation

Established in 2010

Funding commitment **\$1m** a year for 10
years

FRAMEWORK

FAA AST - Research Themes



Nine FAA Licensed Spaceports in US



Task 1

Develop a Framework to capture the Body of Knowledge for Spaceport Operations Best Practices

Results

Current Status: RCC documents in data base

Note: first group we contacted was the RCC

Why? Start with the best!

Online searchable data base of 124 categories related to spaceport operations.

<http://contentdm.nmsu.edu/>

RCC Contributions to the Digital Collection: We Need Your Help

Framework to Capture a Body of Knowledge for Commercial Spaceports

Documents

Policies

URLs

Practices

MOUs/MOAs

What Else?

COE-CST Roadmap for FAA-AST Spaceport

- Incidents at MARS and Mojave
 - NTSB report will take a year
 - FAA is not required to take any recommendations from report
 - If a regulation emerges it will be narrowly drafted to address a specific finding.
- Areas for further development of the Digital Collection.

2014 Spaceport Accidents

- Orbital Sciences: October 28, 2014, accident at MARS destroyed Antares rocket unmanned Cygnus Spacecraft - Orbital is leading investigation.
- Virgin Galactic: October 31, 2014, fatal accident involving Virgin Galactic's SpaceShipTwo at Mojave Air and Space Port. NTSB is leading investigation.
- Army: August 25th Kodiak Launch Complex - Army leading the investigation.

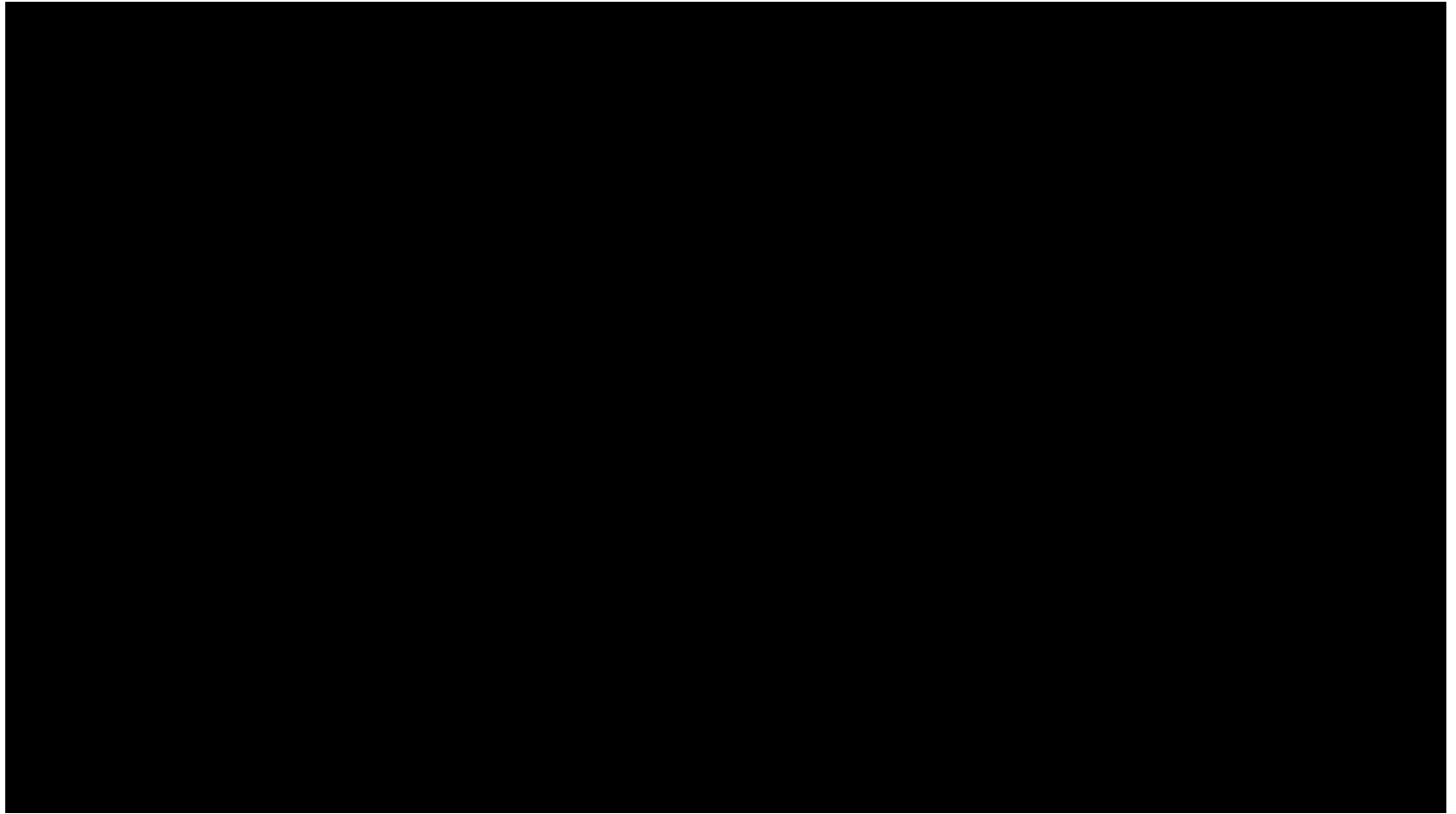
Spaceport Investigations

- NTSB Report
 - Preliminary Findings: Pilot error
- Orbital Report
 - Replace AJ-26 with RD-181

Going Forward

- Synergy among all installations government and commercial to eventually work for the common good of the nation's space transportation system.

Launcher 1



Conclusion

- Enable & Facilitate education of a new workforce; use the Digital Collection
- Promote Best Practices by encouraging industry & government to share what they can to keep this collection relevant
- Reach Out
 - Welcoming environment - you did it for me- who is next? What's next? Go visit Mojave Air and Space Port.