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Space Operations in the Seventh District



U.S. Coast Guard District Seven

Regional Response Team IV Meeting May 8th 2019

A. Eugene Stratton, D7(dpw)
(305) 415-6750
a.eugene.Stratton@uscg.mil





CURRENT STATE OF THE COMMERCIAL SPACE INDUSTRY



U.S. Coast Guard District Seven

- Estimated global value: \$335 billion
- Orbital launch services share: \$5.4 billion
- U.S. market share: \$126 billion
- U.S. based launch services: \$1.8 billion

• Current Major Commercial Operators:

United Launch Alliance (ULA)

- Since 2006 United Launch Alliance
 - Boeing / Lockheed Martin
 - Atlas & Delta Rockets

Space Exploration Technologies (SpaceX)

- 2010 First launches
 - Falcon / Falcon Heavy
 - Dragon (Cargo)
 - Dragon Crew / \$440 mil NASA awarded contract

Source: SpaceX





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CURRENT STATE OF THE COMMERCIAL SPACE INDUSTRY



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Major Spaceports of the World

Based on metric ton lift capacity, destinations supported





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CURRENT STATE OF THE COMMERCIAL SPACE INDUSTRY



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Federal Partners

- USAF 45th Space Wing
- USAF 45th Operations Group
- NASA
- FAA
- USACOE
- US Fish and Wildlife
- National Parks Service



US Army Corps
of Engineers®



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CURRENT STATE OF THE COMMERCIAL SPACE INDUSTRY



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State Partners

- Florida DOT
- Space Florida
- Florida DEP
- Saint Johns River Water Management District (SJRWMD)

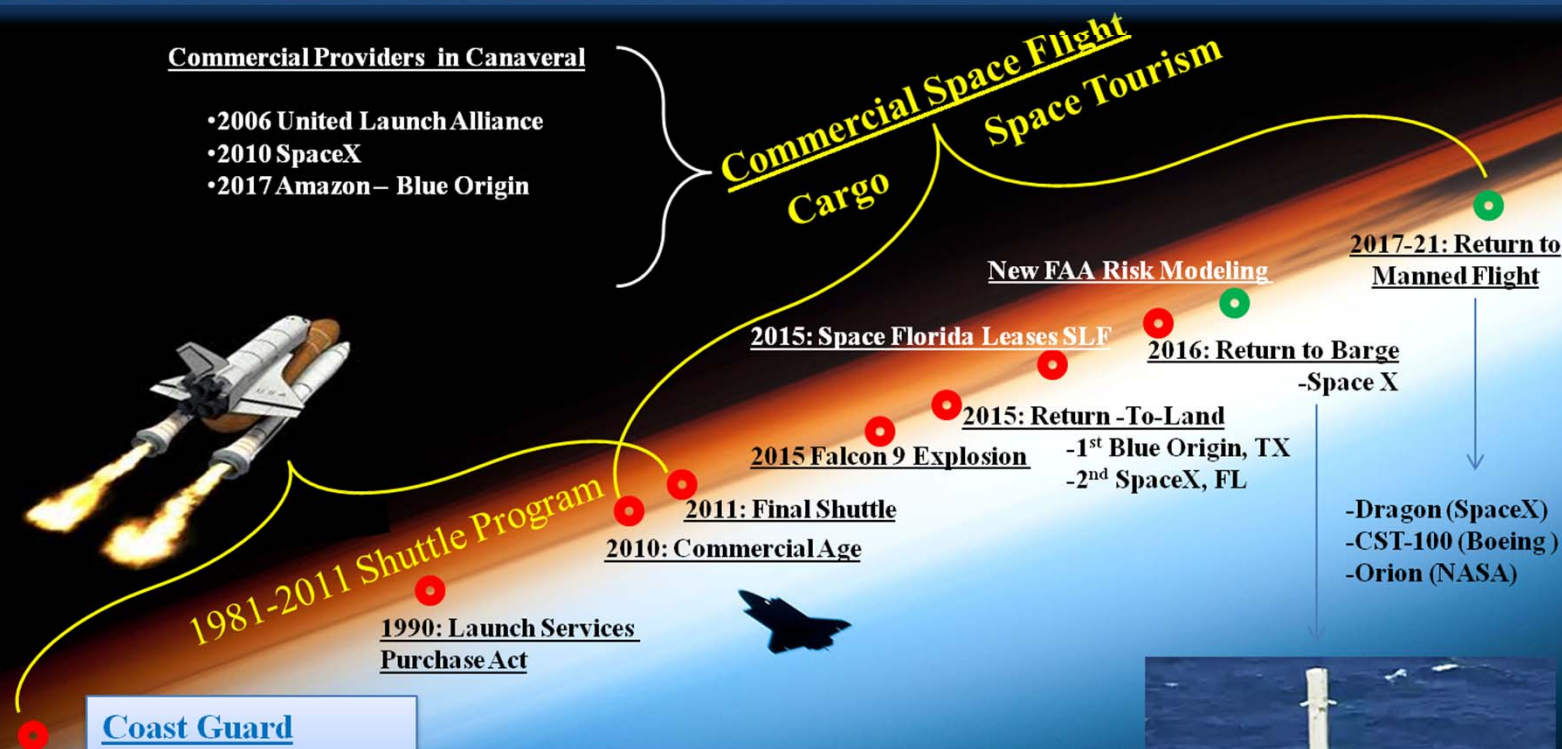




RECENT HISTORY OF COAST GUARD SUPPORT



U.S. Coast Guard District Seven



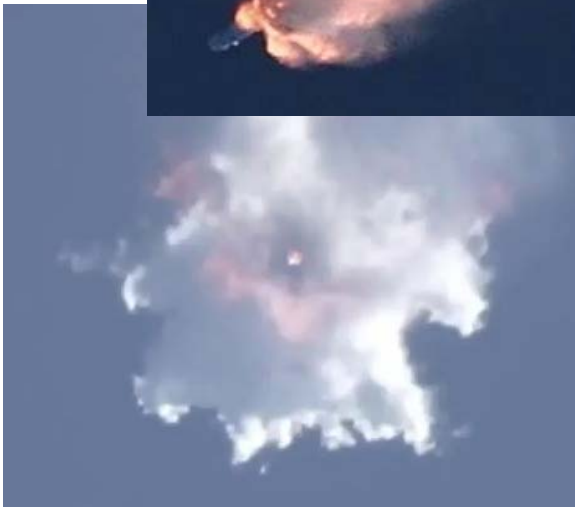
Coast Guard Support Package:

	<u>Shuttle</u>		<u>Rocket</u>	<u>Return To Land</u>
<u>Support Time</u>	4 Days		3 hrs	3hrs
<u>Personnel</u>	36 CG Active Duty 21 Reserves 21 CG Auxiliary	2 FWC 2 CBP 2 BCSO	6 CG	18 CG 12 BCSO/Port Partners
<u>Assets</u>	6 CG VsIs 3 OLA vsIs 2 CG A/C		1 CG Vsl	3 CG VsIs 1 OGA
<u>WWM</u>	Safety/Security Zone, BNM, & Launch Hazard Area Notifications			+ Port Restriction





FALCON 9 EXPLOSION JUNE 28, 2015



1. Debris 150 miles offshore – concern for FL beaches on July 4th weekend
2. 45th perspective – off Air Force property, no jurisdiction
3. Media engagement – none. Except from the one group who had the least to do with it - NASA
4. State agencies need for assurance



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D7 Challenge – Space Vehicle Launch Support



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Global trends predict a doubling of civil and commercial space activities by 2024. Together Kennedy Space Center and Canaveral Air Force Station are one of two spaceports in the world capable of sustained heavy lift operations.

Challenges, Opportunities, and Initiatives:

- Rapid growth of space industry requires policy development
- D7, CG5P-NAV & other Districts POA :
 - CGHQ (CG-5PW) - Strategic - CG/FAA MOA
 - Districts - Regional – District/Sector LOA for Site Operators (Spaceports)
 - Sectors/COTP - Tactical – COTP/Launch Operators LOA
 - D7 CONOP/OPORD to field units
- HQ/FORCECOM Policy & TTP development for national consistency
- Identify Staff/Resources/Funding for Space support



D7 Launch Support:

- Typically 65% of total US based launches occur in D7
- 22 launches in 2018
- Human space flight in 2019

CG Launch, Recovery & Support Ops:

- Interagency & industry partners coordination
- Creation, activation, enforce Limited Access Areas
- BNTMs; Safety & Security Zones
- Launch Control & EOC liaisons
- Incident Response activities (HAZMAT)
- Autonomous Vessel Inspections
- SAR/Recovery – RFFs from AF & Industry



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WHY THE COAST GUARD IS INVOLVED



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Fundamental question: *How is this the Coast Guard's Problem and why should we care?*

Control of the waterways is fundamental to meeting NASA/DOD/FAA range control requirements for public safety.

The most efficient way to launch an object into (non polar) orbit is to launch in an easterly direction

There are only a few places in the continental U.S. that meet the range control requirements for safe orbital launches



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WHY THE COAST GUARD IS INVOLVED

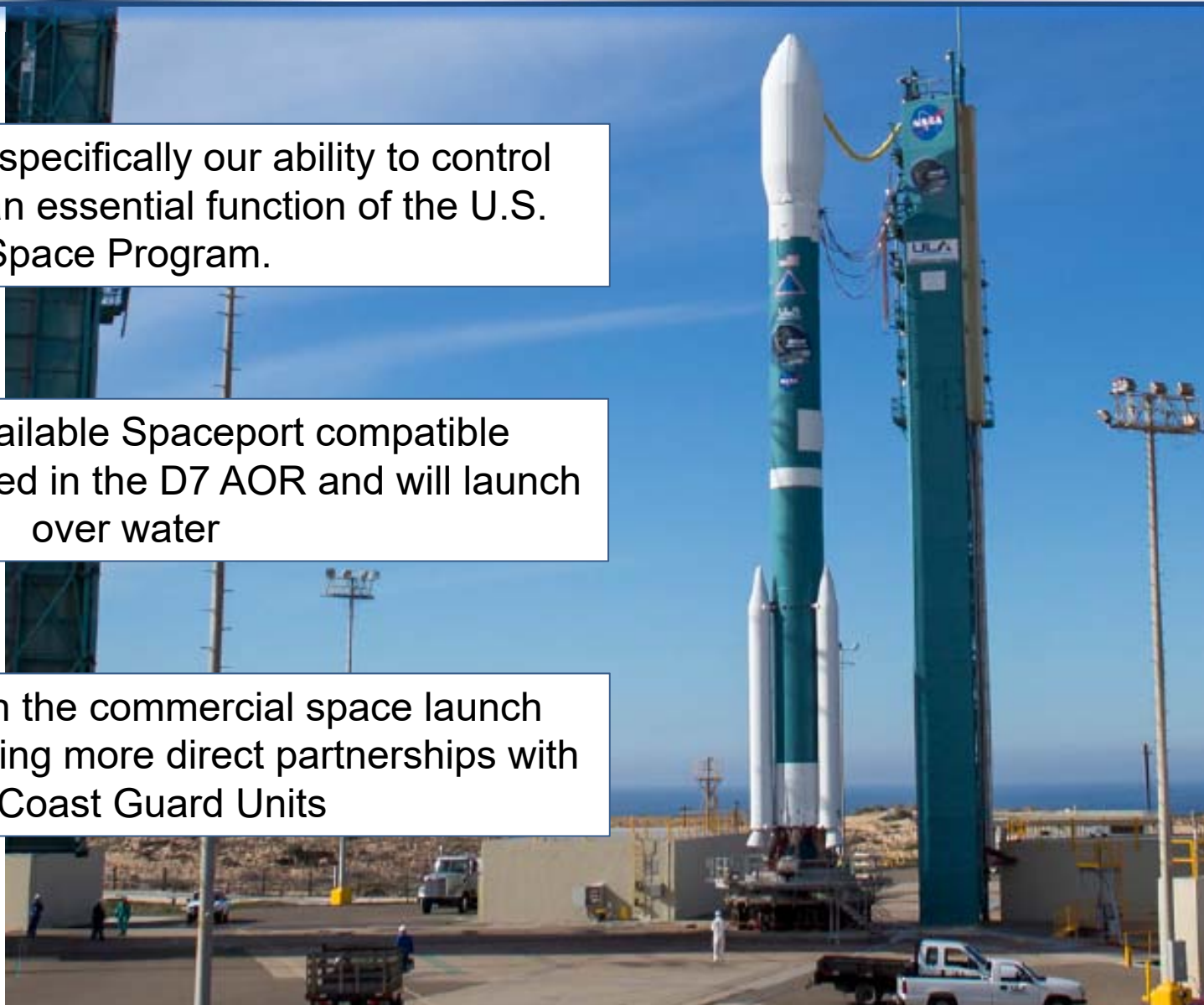


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COTP authority, specifically our ability to control vessel traffic is an essential function of the U.S. Space Program.

Most of the available Spaceport compatible locations are located in the D7 AOR and will launch over water

Developments in the commercial space launch industry are requiring more direct partnerships with our Coast Guard Units





Adopt a three-tiered organizational approach to managing space launch operations through coordinated engagement and formalized agreements at the national, regional, and local levels:

National Level Headquarters

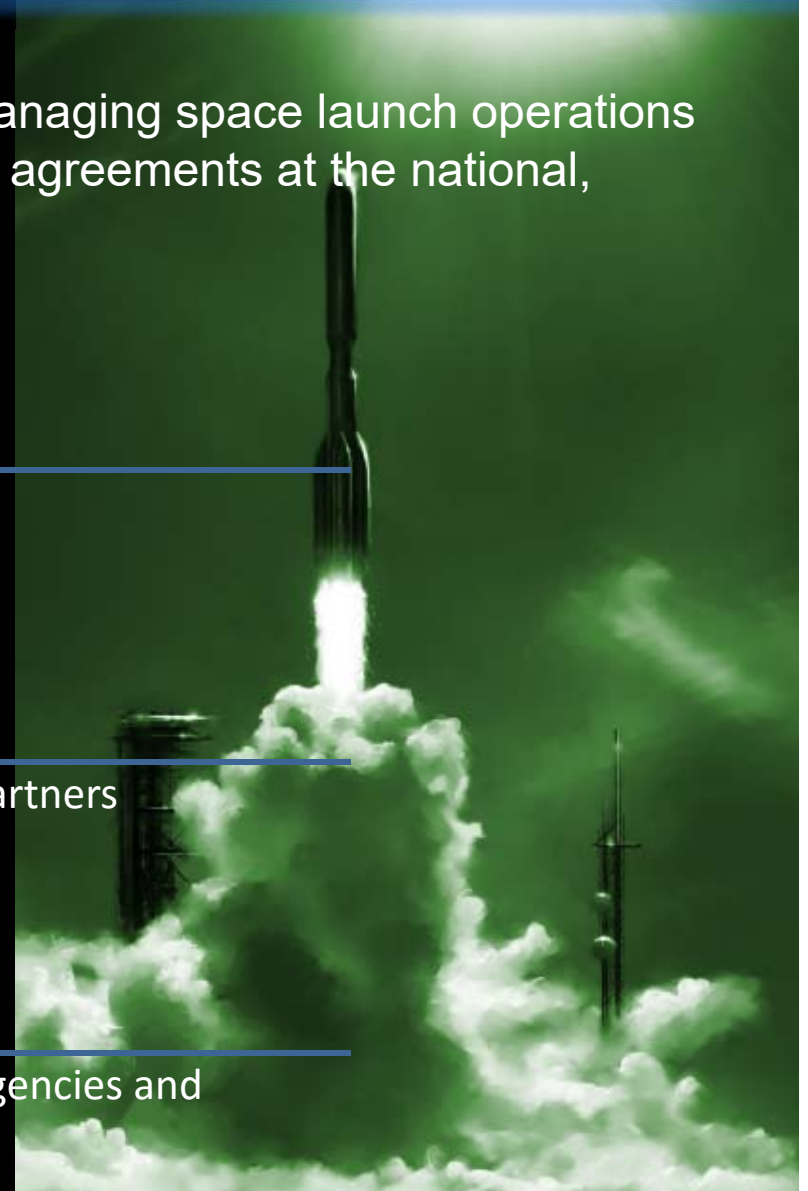
- Internal policy development
- TTP development
- External engagement with other federal agencies

Regional Level Districts/Areas

- Engagement with regional federal and state, industry partners
- Support field commanders

Local Level Sector Commanders / COTPs

- Engagement at tactical level with federal, state, local agencies and industry partners





Regulatory Regimes

Strategic & Tactical Relationships

Search & Rescue

HAZMAT

- to develop TTP for first responders encountering floating rocket capsules or debris which may be pressurized or contain hazardous materials, and hazardous material response cleanup operation requirements.

LAAs



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**Much more to come,
stay tuned!**

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