

# *To Infinity and Beyond: Planning the Spaceport of the Future*

Moderator: **Col. Blair Schantz, USA (Ret.)**, PRiME Associates

Speakers:

- **Lt. Col. Robert Barnes, USSF**  
*Director, Installation and Mission Support,  
Assured Access to Space Program*
- **Andrew Duce**  
*Chief, Spaceport Development, Space Launch Delta 45*
- **Lt. Col. Dylan Monaghan, USSF**  
*Vandenberg Spaceport Integration, SLD 30*
- **Lynn Zuch**  
*Project Manager, KZF Design*



May 15, 2024, 10:30 a.m.



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# Session Objectives

1. Participants will learn to think about infrastructure sustainment constrained by mission needs and timelines versus traditional enterprise processes
2. Attendees will see data-driven decision making implemented, informed by dynamic and increasing mission needs
3. The presentation will demonstrate the benefits of an integrated, parallel approach to infrastructure planning and NEPA, ensuring environmental stewardship and operational infrastructure resiliency go hand in hand
4. The program will show asset management-informed principles applied to bring aging infrastructure into a more sustainable configuration to support increasing operations tempo



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# Perspectives

Colonel (sel) Robert Barnes

Mr. Andrew Duce

Lieutenant Colonel Dylan Monaghan

Ms. Lynn Zuch





# SPEAKER



**Lt. Col. Robert Barnes, USSF**  
*Director, Installation and Mission Support,  
Assured Access to Space Program*

## Fun Facts

- From San Antonio, TX
- Married to a fellow USAF officer
- Second assignment at Patrick SFB! (Fourth in AFSPC/USSF)
- Love playing video games and baseball with my kids
- Multi-instrumentalist: guitars, bass, keys

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# Space Background

- Infrastructure started in 1950's space/ICBM race



Courtesy afnwc.af.mil



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# Space Facility O&M

- Infrastructure maintained via standard DoD processes and priorities



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# What Changed?

Launch Rates  
Dramatically Increasing

	'21	'22	'23
Eastern Range:	31	57	(92)
Western Range:	11	19	(42)

Example On-Orbit  
Commercial Systems

- Starlink /Starshield
- OneWeb
- Kuiper
- PredaSAR
- *Many more...*





# SPEAKER



## Andrew Duce

*Space Launch Delta 45  
Chief, Spaceport Development*

### Fun Facts

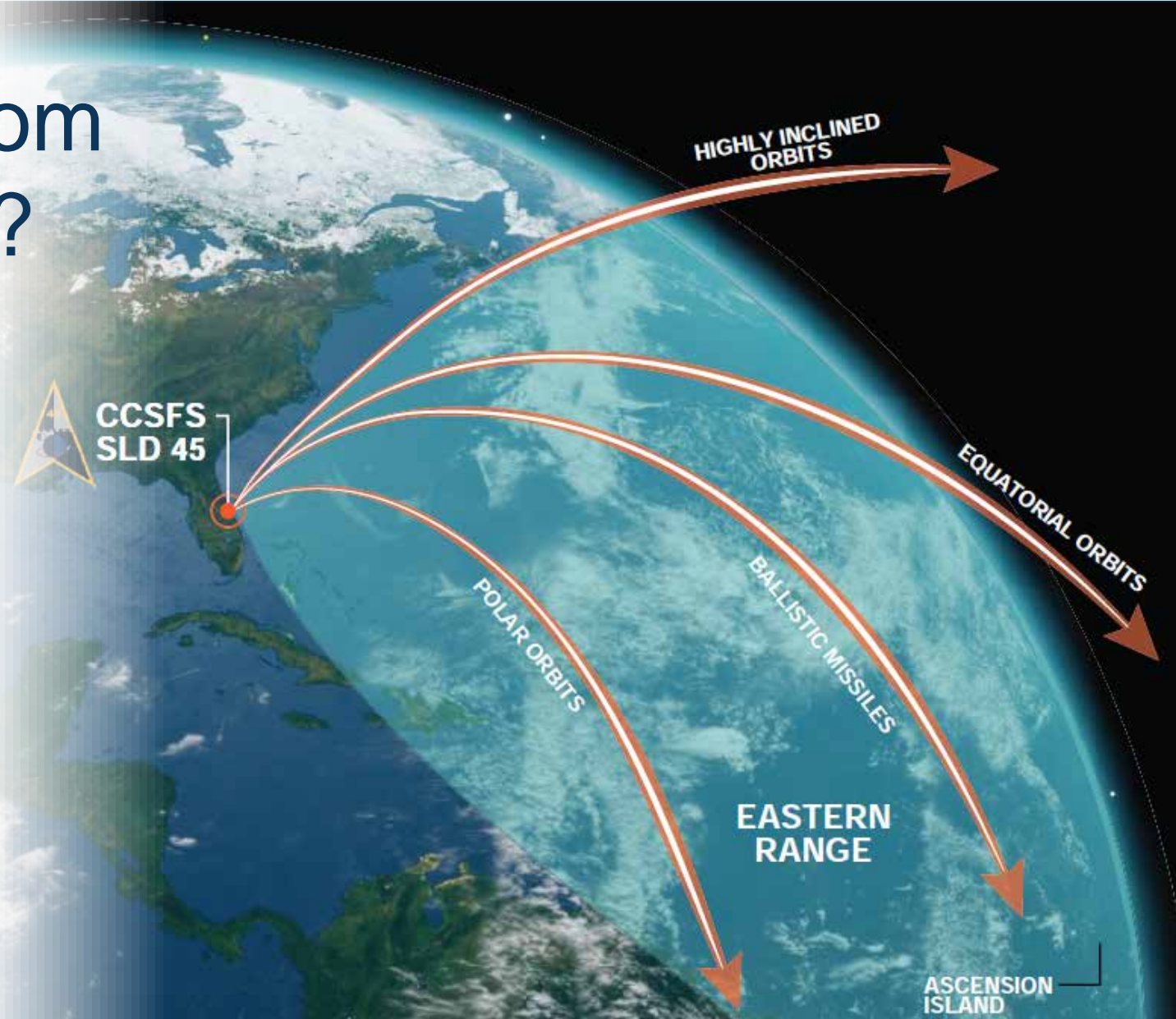
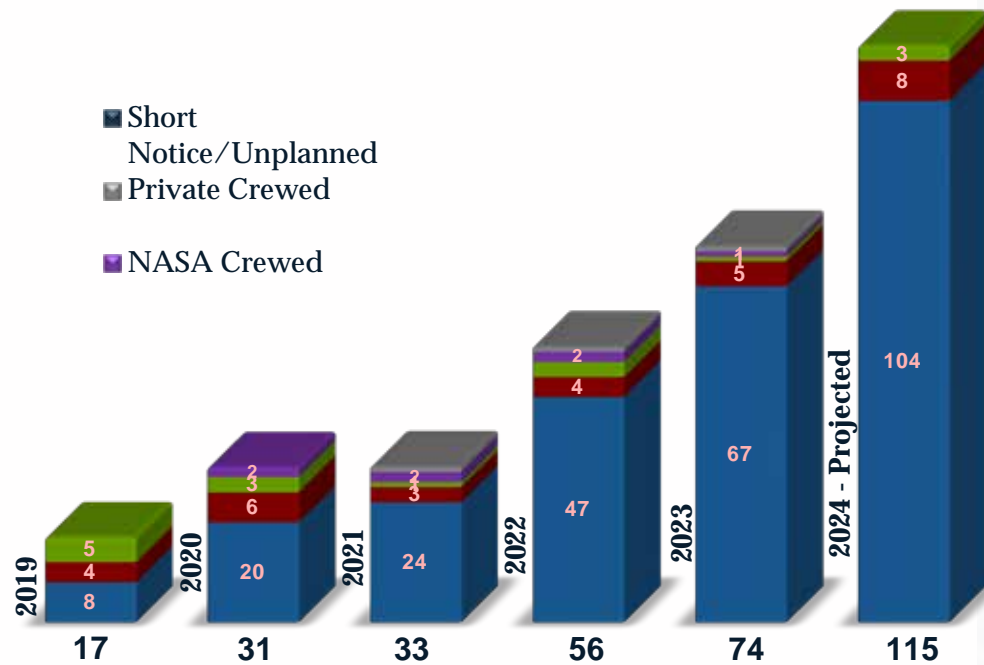
- Grew up in Two Egg, FL
- Moonlights as a film critic
- Relaxes with carpentry and construction projects
- Life goal is to visit all 50 states, only 11 left

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# Why do we launch from the Eastern Range?



# Objectives to Meet the Demand

- § Range must be able to support launching EVERY day
- § Range must be able to support multiple launches per day
- § Range must eliminate all critical day restrictions
- § Establish infrastructure redundancy and resiliency
- § Reduce personnel impacts associated with launch and landing activities
- § Rapidly executable projects
- § Range must remain FULLY operational while executing this investment program





# SPEAKER



## Lt. Col. Dylan Monaghan, USSF

*Space Launch Delta 30  
Vandenberg Spaceport Integration*

### Fun Facts

- Video Games > watching TV
- I teach at Comic Cons
- I learned more about orbits from Kerbal Space Program than my Aerospace Bachelors
- Best vacation spot: Ravenloft

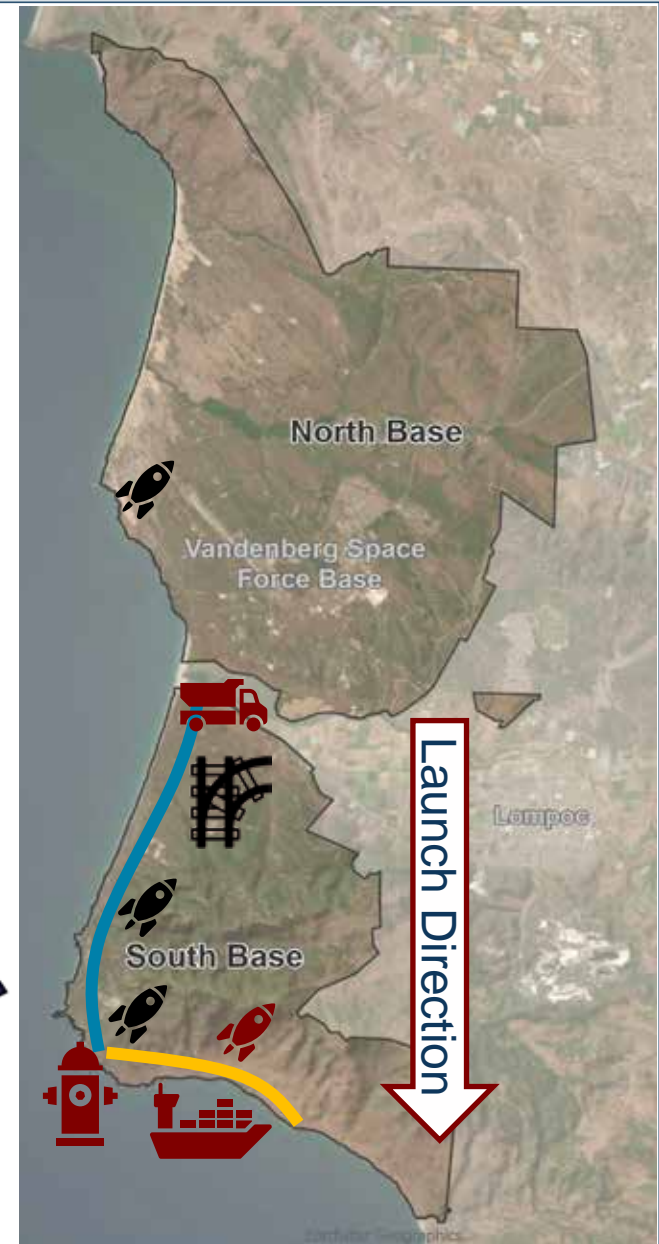
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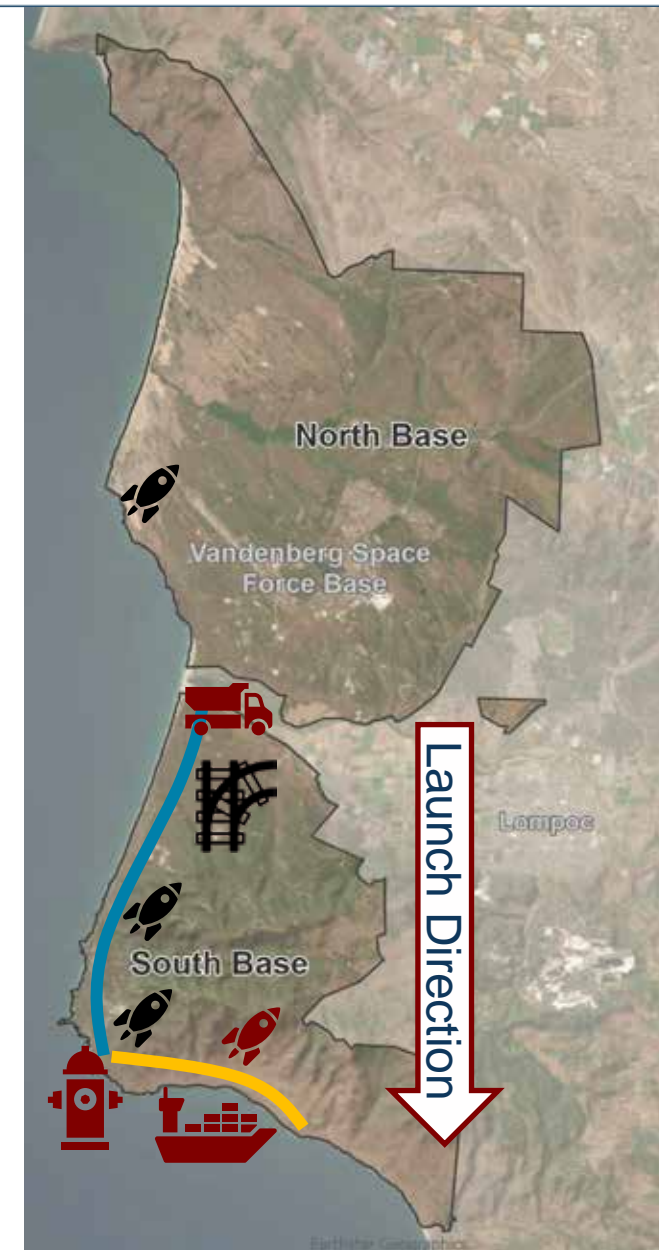
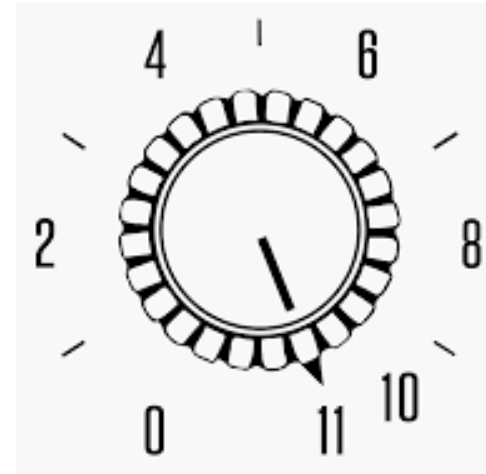
# Mission-Driven Constraints

- Transportation, not just to space
  - Air, rail, port, roads, and access gates
- Road Closures
  - Integrate Ops & Construction
- Hazard Arcs and off-base protection
  - Facility spacing, launch provider selection influenced by safety needs
  - Reinforce key buildings
- Program Integration Office manages



# Asset Management-Informed Principles

- Spaceport Ops Model in development
  - Sim people, roads, buildings, etc.
  - Model process from application, integration, to launch
- Then turn model up to 11
  - See chokepoints early
  - Start fixes now
- Validates need for \$





# Challenging Tradition

- Rules: full use specified in early planning
  - Building infrastructure “to the fence line” of new launch complexes
    - Appears as “road to nowhere” because we are not planning the final complex
- Engaging senior leaders, members of congress early about deviations
  - There will be a launch pad there, just not in our plan





# SPEAKER



## Lynn Zuch

*KZF Design*

*Director of Community Design & Planning*

### Fun Facts

- Project Manager for KZF/DRMP team on this project
- Grew up in NH - settled in Cincinnati
- New empty nester
- Father was a Marine fighter pilot and husband was in the Navy
- Hobbies are art and cooking

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# Spaceport of the Future Planning Work



§ Needed to be comprehensive

- Ø District Plans for all of CCSFS
- Ø District Plans for all of PSFB
- Ø SLD 45 Infrastructure Roadmap
  - 90+ projects identified that are required to support increased launch cadence.

§ Have Executable Projects

- Ø Environmental Assessment(s) / FONSI(s) for priority projects



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# How We Did It and Lessons Learned



## § Nothing Comparable

- ∅ Needed to establish an iterative planning process with leadership and stakeholder buy-in

## § Needed executable projects

- ∅ Concurrently developed installation wide plans while working through the NEPA process

## § Data Driven

- ∅ Mapping and products along the way to support decision making.



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# How it is Being Executed

§ SLD 45 Program Integration Office

§ Execute the engineering and construction program for the SPotF

§ Working with AFCEC and USACE Mobile

§ SLD 45 IDIQ



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# Q&A

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