FAA ATO SPACE OPERATIONS

Launch Procedures

Federal Aviation Administration

FAA Air Traffic Organization Space Operations

•**Our Mission:** Ensure space launch and reentry operations are safely and efficiently integrated into the National Airspace System (NAS).

- Notification
- Evaluation
- Decision
- Airspace Management Plan (AMP) Development and Distribution

Planning and Coordination

- Monitor and support

Real-Time Operations

- Post Operations Analysis

Post-Event and Future Planning

Notification

Launch/Reentry Operator (LRO) provides notification of intent to operate (to include)

- Launch site, date/backup date, mission name
- Primary and backup launch windows
- Type vehicle and payload
- Trajectory of launch
- Aircraft Hazard Area (AHA) locations
- ALTRV Requests (If needed)

Risk Assessment Process

- Risk assessment performed by operator, regulator (AST) and/or space sport (United States Space Force - risk analysis teams):
  - Space Launch Delta (SLD) 30 West Coast, Space Lauch Delta (SLD) 45 East Coast
- **Air, Sea and Land** risks are assessed and have different thresholds
- **Aircraft Hazard Areas (AHAs)** defined by regulation and policy as $1x10^{-6}$ for casualty producing collisions
- **Risk Assessment also includes debris fall times** associated with nominal and malfunction

Evaluation

Space Ops Will: Perform NAS Impact Evaluation

- Enter AHA geographical and altitude definitions, start and end times into Airspace Constraint Analysis Tool (ACAT).
- Review analysis output metrics (e.g., number of aircraft, additional miles flown, minutes of delay).
- Share impact analysis with SVRWX and affected facilities highlighting any potential significant NAS impacts requiring L/R mitigation.
- Develop a plan of action with affected facilities to manage the NAS during launch/reentry.

Decision

The decision to approve or disapprove a launch has many factors:

- Safety
- Commercial vs DOD launch
- Weather
- NAS Impact
- Etc.

Airspace Management Plan

The Airspace Management Plan (AMP) is a high-level overview of the NAS impact due to the launch/reentry. The information includes:

- the background of the vehicle
- launch schedule
- hazard area information
- Conclusion
- Illustrations of impact areas

Operational Oversight – Day of Operation

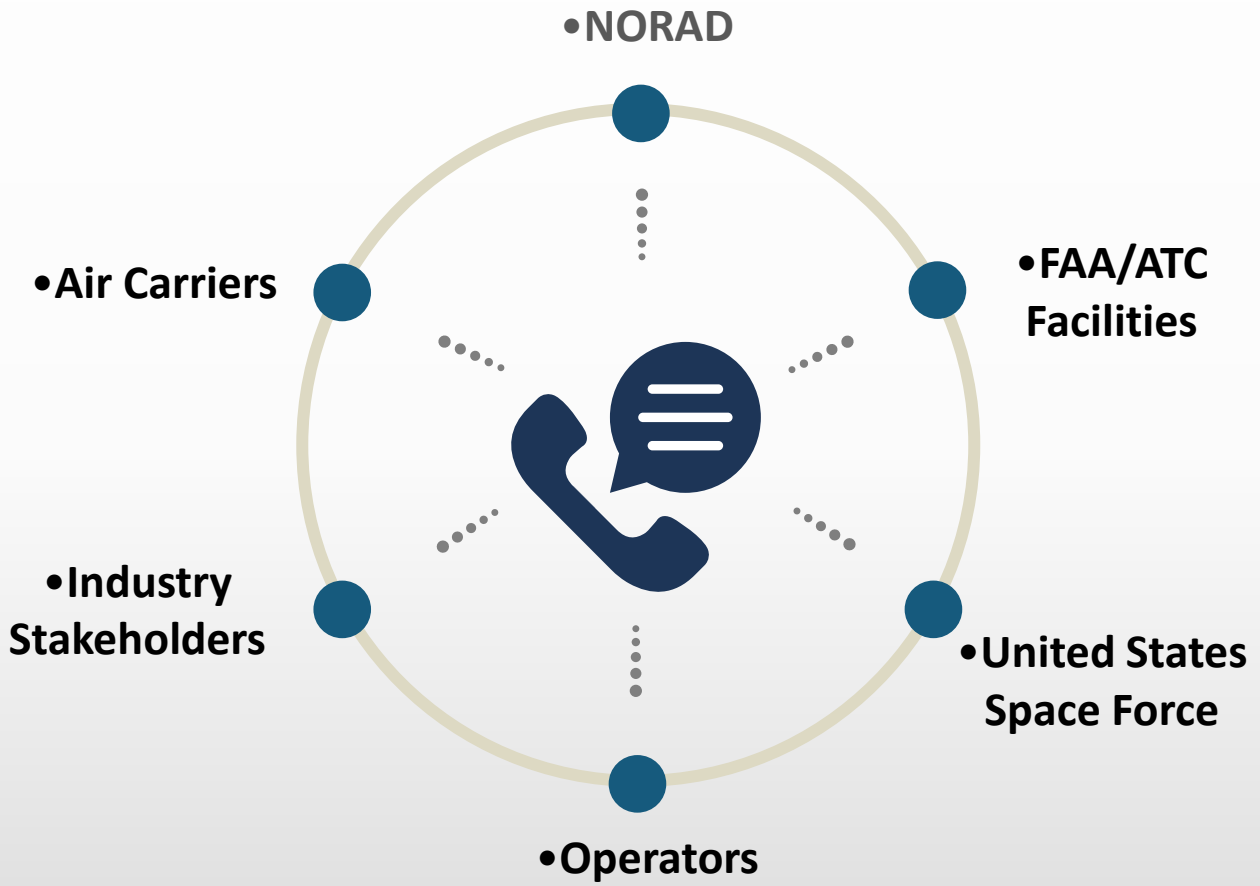
ATO Space Ops stands up the Challenger Room several hours before space operation

- Lead and manage the L/R operation including the Hotline
- Ensure appropriate Traffic Management Initiatives are in place
- Utilize Space Data Integrator for the receipt of LRO telemetry data and activate DRAs if needed
- Monitor air traffic in the vicinity of the L/R operation
- Keep the ATCSCC and air traffic facilities apprised of the status of AHA airspace
- Prepare a direct response to off nominal events

Real Time Mission Support

- **Hotline: provides real-time shared situational awareness**
  - **Airspace is tactically managed and deactivated**.
  - **Traffic Management** initiatives are cancelled
  - In the event of a launch malfunction, **Debris Response Areas (DRAs)** are activated and cancelled.
  - INTL/Domestic NOTAM cancellations are communicated.
  - Airspace is released and hotline is terminated.

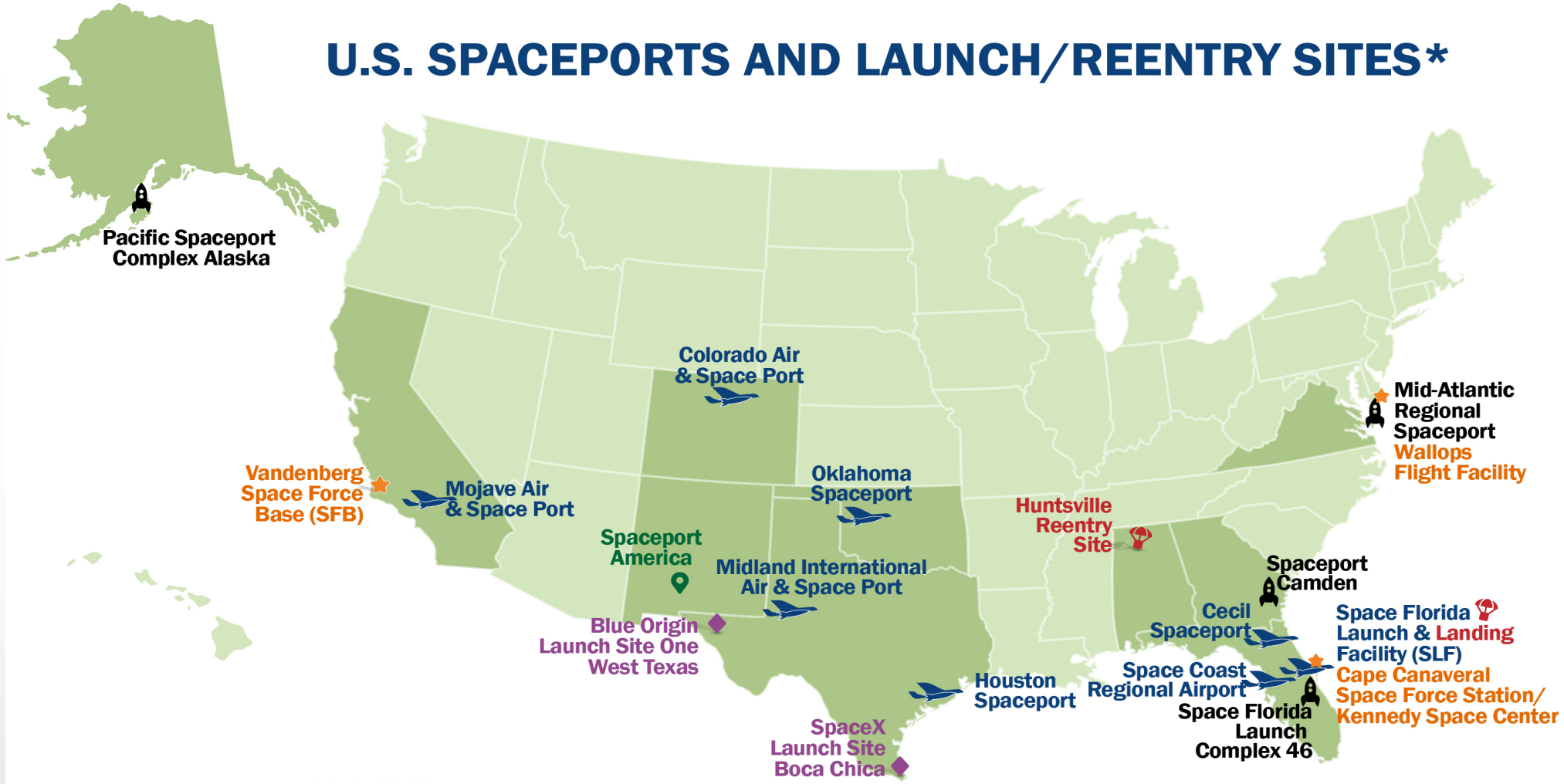
- ***OIS is updated and bi-hourly ATCSCC briefs provides status.*



POST Mission Analysis (Hot wash)

- Review the lessons learned
- What went well for the mission
- What can be improved for next mission inclusive with both the operator and FAA field facilities
- Share post mission data with AJR-G so they can perform analysis and maintain metrics
- Share post mission data with AJI to ensure compliance with ALR

U.S. SPACEPORTS AND LAUNCH/REENTRY SITES*



MAP LEGEND

- States with Current Spaceports
- FAA-Licensed Horizontal Launch Site
- FAA-Licensed Vertical Launch Site
- FAA-Licensed Horizontal and Vertical Launch Site
- FAA-Licensed Reentry Site
- U.S. Federal Site
- Exclusive Use Site

* Locations licensed by the FAA or currently hosting FAA-licensed activity.

Source: FAA/AST March 2025