THE GATEWAY TO SPACE®

Spaceport America Overview

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SPACEPORT AMERICA

THE SPACE TO BE…

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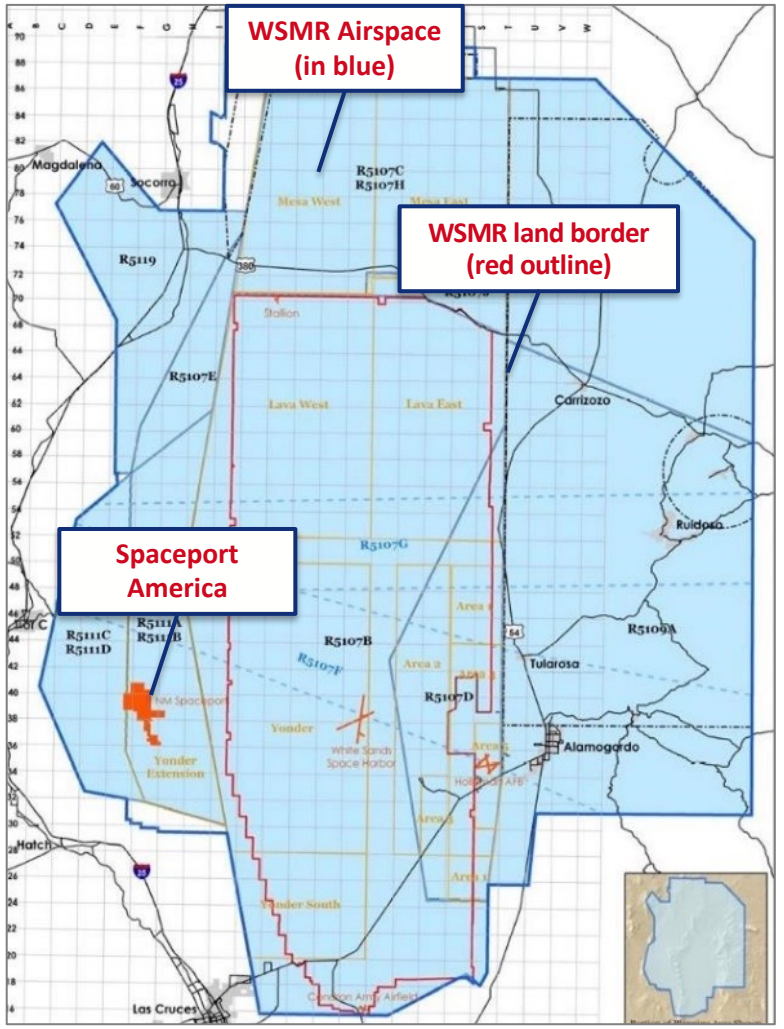
SPACEPORT AMERICA

Important Spaceport America Dates

- 1984 **Federal Commercial Space Launch Act** (amended 1988, 2004)
- 1990-1993 Phase I: Spaceport startup, roughly
  - Visionaries recognize NM has significant advantages for space launch (low population density, high ground elevation, very good weather, low corrosion, and uncongested airspace)
- 1994-2003 Phase II: Southwest Regional Spaceport (SRS)
  - Studies continue and establishment of the **NM Office of Space Commercialization**
  - Shift to orbital launch site instead from capsule reentry (e.g., LM VentureStar)
  - Started working with WSMR, BLM, FAA, and others
  - **X-Prize** becomes technology driver
- 2004-present Phase III: Spaceport America
  - **Scaled Composites** wins Ansari X-Prize (fall of 2004)
  - Passage of **Spaceport Development Act** (2005) and first contact with Virgin Galactic
  - NM Legislature passed funding authorization (2006), conditional upon: signing a major customer, passage of GRT increase by at least two counties, and obtaining license
  - **Spaceport America** is funded and built…

SPACEPORT AMERICA | KEY FACTS

- 6,000 sq-miles of restricted airspace
- Access to WSMR Radar, Telemetry, Optics, and MET Services
- 24/7 Private Fire (With AARF), EMS, Security
- Day-VFR concrete 12,000 x 200 ft Runway
- Fuel Farm (Diesel, Gas, Jet-A, Avgas)
- Concrete pads for launches, engine testing, etc.
- Utilities (Water, Wastewater, Electricity, Fiber)
- Horizontal and vertical launch capabilities, working on FAA reentry license
- 811 jobs created and $60 million of value added to area economy
- $250 million of state and local funds used to construct site (no federal funding)



SPACEPORT AMERICA AREA DESCRIPTIONS

Horizontal Launch Area (HLA)

- 12,000-ft long, 200-ft wide runway
- Horizontal and air launch operations
- Space tourism
- Conventional aircraft operations
- Unmanned aircraft operations
- High-altitude balloon operations

→ **Tenants: Virgin Galactic, HAPS Mobile**

Vertical Launch Area (VLA)

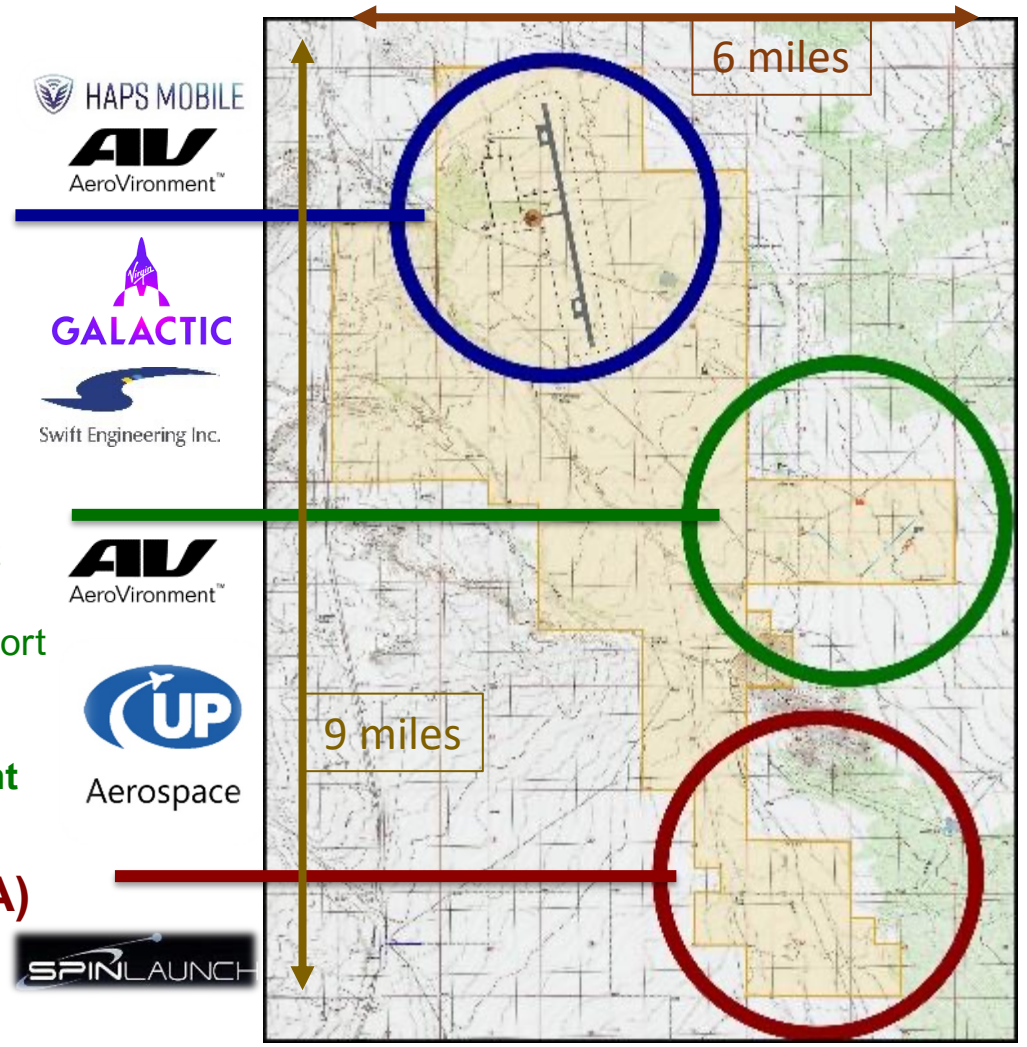
- Suborbital launch vehicles & R&D
- Solid, liquid, and hybrid propellant support
- Rocket motor manufacturing and testing
- Commercial and academic customer support
- Launch from SA, land on WSMR
- Small UAVs

→ **Tenants: UP Aerospace, AeroVironment**

Advanced Technology Area (ATA)

- Emerging technology R&D
- Isolated environment

→ **Tenant: SpinLaunch**



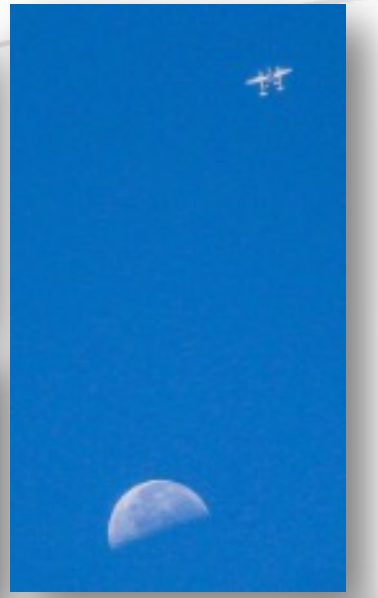
SpA Horizontal Launch Area (HLA)

Virgin Galactic Launch

- VG has guests, VIPs, and future private astronaut
- SpA also has guests and VIPs
- Space tourists also come to the 'viewing lot' we built, or watch from points north

SPACEPORT AMERICA SITE ACTIVITY

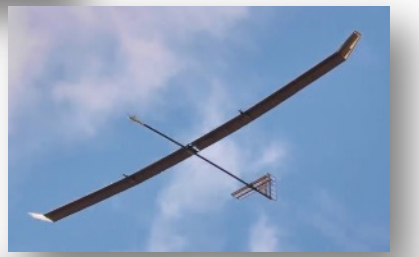














Spaceport America Cup

SPACE TOURISM

Space Tourism

From Space Tourism Society (https://spacetourismsociety.org)

Levels of Space Experiences

Space Tourism

Space Flight Participants* (SPFs)

- Statutorily, this depends on the federal **Commercial Space Launch Amendments Act of 2004**, allowing a "learning period" (this could have already expired, but has been extended)
- Also depends on state-level **Informed Consent** statutes, and all passengers must be informed of risks and are required to sign a *waiver of liability*
- Much of space tourism is unregulated *for passengers* — but, the flight itself is regulated (i.e., pilots, propulsion, trajectory, etc.) to protect the public on the ground; this is different than NASA, which has an extensive certification process
- The idea is that government regulations slow down innovation
- **Space Support Vehicles** are currently excluded…

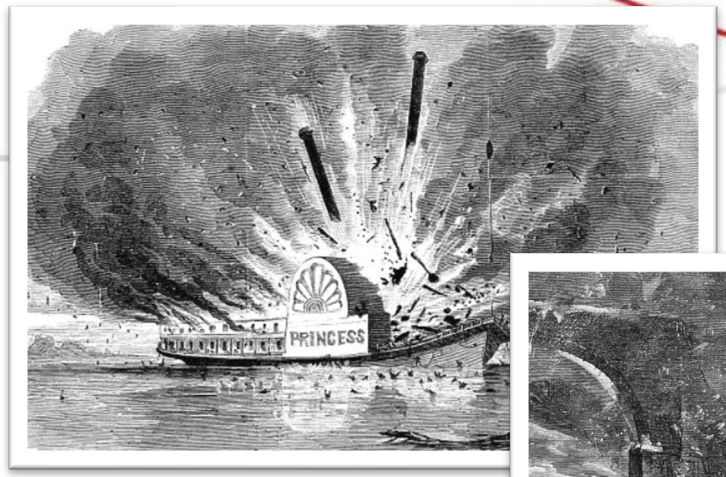
* SPF: "…an individual, who is not crew or a government astronaut, carried within a launch vehicle or reentry vehicle." (51 U.S.C. §50902(20).)

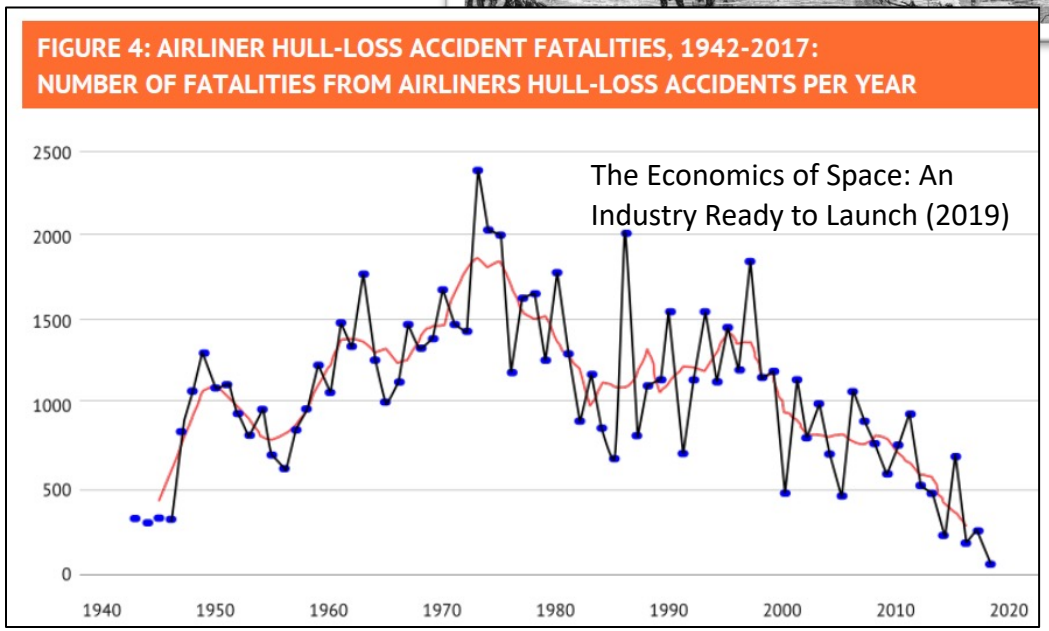
Quotes from New Astronauts

- "Looking at Earth from space changes you, it has such an impact. It's imprinted on you for life. For me, it was very emotional and very spiritual. After seeing the earth with your own eyes, you realize you have a responsibility to make the world a better place." [**Sharon Hagle**, New Shepard flight]
- "It was among the strongest feelings of grief I have ever encountered. The contrast between the vicious coldness of space and the warm nurturing of Earth below filled me with overwhelming sadness. Every day, we are confronted with the knowledge of further destruction of Earth at our hands: the extinction of animal species, of flora and fauna . . . things that took five billion years to evolve, and suddenly we will never see them again because of the interference of mankind. It filled me with dread. My trip to space was supposed to be a celebration; instead, it felt like a funeral." [**William Shatner**, New Shepard flight]

A few more Thoughts

- Many people oppose space tourism (for various reasons)
- Early transportation technologies have higher risks, but early users also pay for progress:
  - Ships (steamboats)
  - Trains (reliability, tracks, iron bridges)
  - Airships (helium, hydrogen, winds)
  - Planes
- https://en.wikipedia.org/wiki/Space_tourism





Thank you

(Actual Photo from Spaceport America Launch)