

SPACE

# Launch Pads Struggle to Keep Pace With Expanding Industry

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By Jan Tegler



Space launch at Cape Canaveral Space Force station

Space Force photo

U.S. capability to launch national security payloads into orbit is blossoming as companies such as Blue Origin and Rocket Lab enter the military space launch business alongside incumbents SpaceX and United Launch Alliance.

Their arrival bolsters the competitive diversity the Pentagon has long sought for assured access to space. But according to analysts, the capacity these companies add will strain the nation's space launch infrastructure.

"The logjam has already started. I lost two launches this year due to range congestion entirely. At one point I had an Atlas rocket sitting on a launch pad for a month waiting for an opportunity to fly," United Launch Alliance CEO Tory Bruno said in an interview in late December, shortly before he resigned as leader of the Boeing-Lockheed Martin joint venture.

Bruno — who the day after Christmas was announced as Blue Origin's new president of national security — was echoing concerns shared by the Space Force.

"We have more launch service providers and that allows me to service more of the customers that I have on the Department of War side," Col. Eric Zarybnisky, the Space Force's program executive officer for Assured Access to Space, said in an interview. "It really does drive competition, which is good for all of us. It increases reliability. It drives down the cost. So it gives us more capability at a lower cost to the taxpayers."

But Zarybnisky and the commanders of the Space Force's two primary vertical launch facilities — the Eastern and Western ranges at Cape Canaveral Space Force Station, Florida, and Vandenberg Space Force Station, California — acknowledged that while they have no immediate reservations about congestion, the rate at which launches are increasing at both stations will challenge their capacity.

A record-breaking 109 launches took place in 2025 at Cape Canaveral, the Space Force's busiest launch facility due to its East Coast location, favorable for sending payloads to a variety of orbits and inclinations.

"If you look at the manifest just five years ago, we had 20 launches in a calendar year," said Col. Brian Chatman, Space Launch Delta 45 commander and director of the Eastern range.

"If you look at the manifest five years from now, we anticipate upwards of 300 to 400 launches happening off the Eastern range."

Chatman's California counterpart, Col. James Horne, who commands Space Launch Delta 30 as director of the Western range, where payloads bound for polar orbits begin their journey, outlined a similar progression at Vandenberg.

Since 2019, there have been 253 launches from Vandenberg, with 51 ascending in 2024 and a record-breaking 72 in 2025 — a 1,300 percent increase over the period and "more than we've launched since the 60s," according to Horne.

Those are remarkable numbers, as Horne noted.

But Charles Galbreath, director and senior resident fellow for Space Studies at the Mitchell Institute, cautioned that the number becomes much smaller if SpaceX launches are removed from the U.S. manifest.

Nevertheless, having the new Vulcan booster from United Launch Alliance join the mix of medium and heavy-lift national security space launch providers is "an excellent thing from a mission assurance perspective and an assured access to space perspective," Galbreath said. The prospective addition of Blue Origin's New Glenn in 2026 makes the outlook even better, he said.

"There are some common components in the Vulcan and New Glenn rockets. Both use BE-4 engines developed by Blue Origin and that's something to track. If there's an issue with the engine, it could potentially ground both ULA and Blue Origin. But you've got a completely different design with SpaceX's Falcon 9 so that gives you some level of assured access. That assuredness is key," Galbreath said.

ULA's Vulcan launched just once in 2025. Bruno said that was due to a nationwide shortage of skilled workers — cryogenic welders, pipe-fitters and high-steel workers — available to build a second vertical integration facility at Cape Canaveral for the company's new Vulcan and retiring Atlas rockets.

ULA has been competing with shipyards across the country for these workers as shipbuilding is taking off under the Trump administration, he noted.

"The good news is, the country is building a lot of ships and a lot of rocket infrastructure," Bruno said. "But over the last year this has been a huge problem that we've been having to fight our way through. You just can't get these guys. I've had to pull technicians out of my own factory to supplement the crew and pay all kinds of premiums."

Bruno expected that Vulcan would make its first flight of 2026 sometime this February. ULA confirmed in early January that a Vulcan rocket carrying U.S. Space Force Mission-87 was planned to launch Feb. 2. The firm's former CEO also predicted a cadence of Vulcan launches "at a little less than one per month" through the year.

Brian Rogers, vice president of global launch services for Rocket Lab, a newly "on-ramped" launch provider for national security missions based at NASA's Wallops Flight Facility, Virginia, said his firm's new Neutron medium-lift class vehicle, set to make its first flight early this year, can provide the launch diversity that the Pentagon is seeking.

"Importantly, we are not based at the Eastern or Western ranges," he noted. "We are launching Neutron from Wallops so we can go fast. When we made the decision to go to Wallops, the calculus primarily involved launch availability."

The two main ranges are military bases, and have a high cadence, crowded with SpaceX's Falcon 9 and other super heavy launch vehicles, he said.

Congestion stems from several factors, Bruno said, including the physical proximity of launch providers now flying boosters from Cape Canaveral and Vandenberg.

"What happens when we're jammed in this tight [space] and we're all flying all the time and some of the rockets are a lot bigger is that when someone is fueling a rocket to run an engine test or fueling the rocket for launch, you cannot work at other adjacent pads," he said. "In some cases, you can't be outdoors. In other cases, you can't even be inside your buildings. You certainly can't have your rocket on a pad with fuel in it."

The restrictions are the result of blast zones that require personnel to be well clear of facilities where boosters are fueled or assembled and pads where launches are scheduled.

Delays due to restrictions can add hours or days. But these are not the only causes of congestion.

At Cape Canaveral, a single road must accommodate most of the traffic that accesses the base including employees, trucks that transport fuel and complete boosters heading to processing facilities or the reusable first stages of boosters from SpaceX or, following certification, Blue Origin's New Glenn being recovered after launch.

The Space Force and launch providers at a Space Force-hosted industry day held in mid-December discussed ways to decrease congestion, Chatman said. "Things like a booster transport lane separate from my major road that the employees take when they come onto the Cape to get to work every day. Or a pipeline for methane gas or other fuel commodities," he said.

"When you talk upwards of 300 or 400 hundred launches, that's too many trucks coming through the vehicle inspection checkpoint and it's too much of a logistical burden to meet the timelines that the launch service providers need," he said.

In the future, blast zones may be decreased in size, Chatman said, if new fuel combinations now being tested prove to be less volatile.

Horne said the Space Force is investing \$861 million to overhaul Vandenberg's 1960s-era infrastructure to help ease congestion problems like those at Cape Canaveral. The service also recently released a request for information from launch providers interested in developing land available on the southern part of the station for heavy or super heavy-class launch capability.

"We think there are several companies that are likely interested in that location to build a new pad that's going to require commodities infrastructure," he said.

The Space Force also wants to expand Vandenberg's harbor to increase the number of days launch providers have access to it for transport or recovery of boosters.

"About half of the year is accessible due to weather and other limitations to the harbor," Horne said. "We're trying to increase that to 90 percent."

Chatman noted one other consideration for scaling launch capacity and cadence.

"Manpower is not unlimited," he said. "We need a collective manpower increase on the Eastern and Western ranges."

Proposals for new national launch sites on land or at sea to help ease congestion have been discussed for years, Bruno said. But in the short term, expansion of existing facilities like Cape Canaveral is most expedient, he concluded.

"This range is too small," Bruno said. "At some point in the future, we may want to have another national range, but the faster way is to expand" Canaveral.

"There's extensive federal land as part of this complex that is undeveloped that you would build pads on, primarily to the north of the existing Cape Canaveral. That would require Congress and the Space Force to have the same point of view I just expressed. Otherwise, we just get in each other's way." ND

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