

Analysis Space exploration

Blue Origin vs SpaceX: Who is winning the battle of the rockets? Jeff Bezos's company saw a launch success with New Glenn, but Elon Musk's Starship exploded. What does this mean for the future of the space industry, asks **Alex Wilkins**

COMPARE these two scenes: on 16 January, Blue Origin's New Glenn rocket triumphantly reached orbit for the first time, while SpaceX's Starship burst into flames above the Atlantic Ocean. You might think that the established space company, Elon Musk's SpaceX, has suffered a setback, while Jeff Bezos's Blue Origin is in the ascendancy. The reality is more complicated, but it is true that SpaceX's dominance may be under threat.

New Glenn's launch comes after decades in development, with numerous delays and setbacks. The rocket can carry roughly double the mass of SpaceX's smaller Falcon 9 rocket, which has been the go-to vehicle for governments and companies looking to launch their satellites into Earth orbit, and can also beat the capabilities of Falcon Heavy, SpaceX's current top rocket in commercial operation.

With a successful flight under its belt, Blue Origin is now one step closer to launching payloads commercially. "Falcon is the workhorse of the world, and New Glenn opens up another opportunity," says Laura Forczyk, an independent consultant in the space industry.

133

Number of successful launches by SpaceX in 2024

That could expand the number of customers able to reach space, and lower prices. "There is currently too much demand for Falcon to support," says Forczyk. "One of the reasons why SpaceX has been as profitable as it has been is because it can set its own prices."

But having a rocket that works isn't enough – it must also launch



Above: Debris from Starship rains down after the craft exploded above the Atlantic Ocean

Below: New Glenn blasts off into orbit

frequently enough to attract customers. SpaceX currently has a huge incumbent advantage, having flown more than 400 times in the past decade, says Matt Archer at the UK Space Agency.

Blue Origin is reportedly aiming to complete six to eight launches this year, which is still far below the 133 launches SpaceX completed in 2024. Whether it will catch up to SpaceX depends on the internal motivations of the company, says Forczyk. "One of the criticisms of Blue Origin is that, under the previous CEO, they were operating more like an R&D company," she says, rather than one focused on commercial services and competing for market share with SpaceX.

In 2023, Blue Origin installed a new CEO, Dave Limp, who previously worked at another of Jeff Bezos's companies, Amazon. This suggests there could be a change in internal motivation and company culture that would make Blue Origin pursue more ambitious goals, but this change

"remains to be seen", says Forczyk.

And all of this ignores another key factor: Starship is SpaceX's next-generation rocket. The company is still iterating on its design and expects that some flights will end in "rapid unscheduled disassembly", as Musk euphemistically refers to explosions. If SpaceX can successfully demonstrate the rocket's reliability, it will secure future work from organisations like NASA, which needs Starship to land astronauts on the moon as part of its Artemis programme.

Failing fast?

But that is a big if, and SpaceX's "fail fast" approach, which paid off in developing its Falcon rockets, may not work so well for Starship, says Hugh Lewis at the University of Southampton, UK.

"Starship as a whole is just more complex than Falcon, in lots of different ways. They're returning essentially the second stage [of the rocket], that makes it very hard. So that complexity, I don't think works with the fail fast and iterate approach," says Lewis.

Signs of Blue Origin pulling ahead may be just a few months away. Like SpaceX, the company has been tasked by NASA with landing on the moon, initially with uncrewed spacecraft ahead of a potential 2030 crewed mission. A prototype version of its Blue Moon lunar lander is due to take off on a New Glenn rocket in March, while the launch of a NASA probe to Mars is also on the schedule this year – suggesting strong confidence in the brand new rocket.

"New Glenn demonstrating the ability to launch to lunar space, and to the lunar surface, would open up direct competition with Starship," says Forczyk. ■

