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First satellite launch from the UK failed to make orbit due to an 'anomaly'

Alex Wilkins

THE first orbital satellite launch from the UK took off from Spaceport Cornwall in Newquay, but failed to deploy its satellites to orbit.

Virgin Orbit's LauncherOne rocket, which took off attached to a modified Boeing 747 plane at 10.01pm GMT, began its ascent to orbit after about an hour into the flight, but some 25 minutes later, there was an "anomaly" and the launcher had to abort its mission.

It isn't certain whether the rocket and its satellites burned up in Earth's atmosphere on reentry or came to ground over unpopulated areas.

Thousands of people gathered near the runway to watch and cheer on the plane, Cosmic Girl, as it took off amid fierce winds and speakers blaring *Start Me Up* by The Rolling Stones.

While there may not have been much to see in the skies, there was a festival atmosphere keeping spirits high on the ground, with food trucks and a silent disco lining the runway.

Stage by stage

After Cosmic Girl left the airport, a large monitor tracked the plane's progress towards the Irish Sea, where it was supposed to deploy the rocket and its payload of nine satellites.

When the LauncherOne rocket was released from Cosmic Girl, it began its journey to low Earth orbit. The first stage successfully took it to about 12,900 kilometres per hour.

The second stage accelerated the rocket to its cruise phase at 28,000km/h. According to a spokesperson for the UK Space Agency (UKSA), the rocket reached low Earth orbit, but suffered an "anomaly" that caused it to abort its mission.

A ripple of groans and mutters of "Oh no" spread through the crowd lining the runway as spectators learned that the satellite launch wasn't successful.

The lost payload included a test satellite from Welsh company Space Forge – which it hoped to use to manufacture unique semiconductors and alloys in orbit – small military communications satellites from the UK Ministry of Defence; a pair of ionospheric monitors launched in a joint US-UK military collaboration; maritime sensing satellites from company AAC Clyde Space; a European Space Agency GPS tracker; and an imaging satellite jointly launched by Oman and Poland.

For residents of Newquay and the surrounding villages, the

spectacle of a satellite launch was a landmark event. "I was born and brought up down here, I used to come to the airfield and watch all the airshows, so to find out they're going to be launching satellites from our own backyard is amazing," says Jon Grigg from St Newlyn East, a village a few kilometres south of Newquay.

"Nothing like this ever happens in Cornwall," says a resident from Bodmin, a town about

84

Number of successful launches from the US in 2022

15

Number of launches the UK aims to have per year by about 2033

25 kilometres from Newquay.

Before Cosmic Girl had taken off, Ian Annett at UKSA told *New Scientist* that it was supposed to be an "immense moment of national pride".

Many hoped that Virgin Orbit's success would have marked the start of an era in which the UK could launch its own satellites, as well as those from other countries, from home turf. The UK's satellite building industry is second only to that of the US, but it still relies on foreign launches, such as from NASA or SpaceX, to get products into orbit.

The UK did make a successful orbital launch from Australia in 1971, but abandoned development of the technology and has been left behind by others. In 2022, the US led the pack with 84 successful launches. China's rapid progress in space capabilities meant it was close behind with 62 launches and Russia was the third most successful with 22 launches.

In 10 years' time, the UK hopes to have about 15 launches a year, says Matt Archer, director of the UK space flight programme at UKSA. This will place it on a competitive footing with countries that have more established space-launching industries, he says. The UK government hopes to eventually have a network of spaceports, including a vertical launch facility in Saxa Vord in the Shetland Islands, where a rocket launch is planned for later this year.

Launching a satellite into orbit from the UK would be the country's "Apollo moment", said UK science minister George Freeman before the launch. An attempt at launching a satellite is "a very big signal internationally that we're going to be a big player in the global small satellite launch market", he said. ■

TOP: MATTHEW HORWOOD/GETTY IMAGES; LOWER: REUTERS/HENRY NICHOLLS



Cosmic Girl (above), a repurposed Boeing 747, carried the LauncherOne rocket (right) tucked under its left wing

