

Virgin 'ignored' space safety warnings: expert (Update 3)

November 2 2014, by Rob Woollard

Virgin Galactic "ignored" repeated warnings in the years leading up to the deadly crash of its spacecraft in California, a rocket science safety expert said Sunday, as investigators hunted for clues to the accident.

After a second full day of investigation, the acting chairman of the National Transportation Safety Board told reporters that a lock-unlock lever on the spaceship had been moved prematurely, but emphasized that the cause of the crash was still unknown.

Carolynne Campbell, a rocket propulsion expert with the Netherlands-based International Association for the Advancement of Space Safety, said she could not speculate on the cause of Friday's crash without "all the data."

However, she said multiple warnings about the spacecraft's motor and the fuel used to power it had been issued to Virgin since 2007, when three engineers died testing a rocket on the ground.

"Based on the work we've done, including me writing a paper on the handling of nitrous oxide, we were concerned about what was going on at Virgin Galactic," she told AFP.

"I sent copies of the paper to various people at Virgin Galactic in 2009, and they were ignored."

Campbell said she outlined concerns to Virgin Galactic in a subsequent

telephone conversation, but her warning again went unheeded.

"I warned them... that the rocket motor was potentially dangerous," she said.

Campbell's warnings related to nitrous oxide, reportedly used as a fuel component in the doomed craft along with a new substance derived from nylon plastic grains.

After the major setback to British tycoon Richard Branson's plans, Virgin Galactic released a statement late Sunday in which it said it was "dedicated to opening the space frontier, while keeping safety as our 'North Star.'

"This has guided every decision we have made over the past decade, and any suggestion to the contrary is categorically untrue," it said.

'Long way from finding cause'

A team of NTSB investigators has been deployed to the Mojave Desert to probe Friday's crash, in which pilot Michael Alsbury was killed and co-pilot Pete Siebold was seriously injured.

"We are a long way from finding cause," NTSB acting chairman Christopher Hart told reports in Mojave Sunday evening.

But he said, a camera in the cockpit showed a lock-unlock lever used to activate a process in the spaceship's tail section had been moved by the co-pilot while the vehicle was traveling at a speed just above approximately Mach 1.0.

The lever, Hart said, was not supposed to be moved until reaching a speed of Mach 1.4.

"I am not stating this was the cause of this mishap. We have months and months of investigation to determine what the cause was," Hart said.

He added that investigators had found almost all important parts of the space vehicle, including fuel tanks, the oxidizer tank and engine, which were all intact.

'Safety number one priority'

Branson said safety had always been Virgin's paramount concern.

"Safety has always been our number one priority," he said, adding that the company would not "push on blindly" with its ambitious space program until the causes of the accident had been determined.

Branson, however, took aim at early speculation of the causes of the crash.

"To be honest, I find it slightly irresponsible that people who know nothing about what they're saying can be saying things before the NTSB makes their comments," he told reporters in Mojave on Saturday.

Virgin Galactic chief executive George Whitesides also questioned the safety claims, telling the Financial Times in an interview Sunday that differences of opinion were common in the world of space flight development.

"In the space community, you will be able to find people who have favorite technologies of different types. One group will say their type of technology is better than another," the paper quoted him as saying.

"We pay a lot of attention to the several hundred engineers that we have on staff, and other expert consultants we've talked with about our

technologies."

'No sign of explosion'

Witnesses to Friday's crash say there was no obvious sign of an explosion before Virgin's suborbital SpaceShipTwo broke apart and hurtled to earth shortly after it had detached from a mothership at an altitude of around 45,000 feet (13,700 meters).

The crash was the second disaster to rock the private sector space industry in less than a week, after an Antares rocket carrying supplies to the International Space Station exploded after takeoff in Virginia on Tuesday.

Experts say the accident will delay the advent of commercial space tourism by several years.

Virgin Galactic had hoped to start ferrying wealthy customers to the edge of space next year, charging \$250,000 per person for a ticket on the company's six-seater vehicle.

Hart said on-site investigations would last up to a week but the full probe piecing together facts and analysis "will be probably 12 months or so."

Wreckage from the crash was strewn over five miles (eight kilometers), Hart said.

Investigators hoped to yield clues to the causes of the crash from the reams of telemetry data and video footage expected to be available, Hart said.

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