

# U.S. Launches Probe Into Explosion of Rocket Driven by Russian Engine

By [The Moscow Times](#)

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A truck passes the sign for Orbital Sciences Corporation in Oak Hall, Virginia, Oct. 29, 2014.

Authorities on Wednesday started investigating what caused an unmanned U.S. supply rocket to explode in a fireball moments after liftoff from a Virginia launch pad, destroying cargo and equipment bound for the International Space Station.

The 14-story Antares rocket, built and launched by Orbital Sciences Corp, blasted off from the NASA Wallops Flight Facility on Wallops Island at 6:22 p.m. (2222 GMT) on Tuesday but burst into flames moments later. It was the first disaster since the National Aeronautics and Space Administration turned to private operators to fly cargo to the space station.

While no one was hurt, witnesses said the explosion looked like a "ball of fire" and shook buildings for miles.

"The explosion was a big boom — we could also feel it here, just the ground shaking," said

Shirley Lapole, assistant education coordinator at the NASA Visitors Center, who was watching the launch from about 11 kilometers away.

Initial inspections, completed Wednesday, showed damage to the tower that supports the rockets for launch and damage to the pad's lightning protection system, NASA said. A more detailed inspection is needed before engineers can assess how long repairs may take.

"The overall findings indicate the major elements of the launch complex infrastructure, such as the pad and fuel tanks, avoided serious damage, although some repairs will be necessary," Orbital Sciences said in a statement.

The rocket carried a Cygnus cargo ship with more than 2,273 kilograms of equipment and supplies for the station, a \$100 billion research laboratory owned and operated by 15 nations that orbits about 418 kilometers above Earth.

The area around the launch facility was cordoned off on Wednesday and a helicopter circled overhead. The Cygnus mission was non-military but the craft included classified cryptographic equipment, said Mike Pinkston, Orbital's Antares program manager, requiring heightened security.

Pieces of cloth-like debris were found scattered across Chincoteague Island, just northeast of Wallops Island and about 160 kilometers north of Norfolk on Virginia's Eastern Shore.

### **"Great Loss"**

Investigators will need days to determine where the failure began, said Frank Culbertson, an Orbital executive vice president and mission director, who placed the value of the rocket and cargo ship at \$200 million. The exact cause may take longer to ascertain and correcting the problem could take months, he said. Meanwhile, Orbital has grounded the Antares, which previously made four flights, all successful.

Still, the loss of the supply vessel posed no immediate problem for the orbiting station's six-member crew: two from NASA, one from the European Space Agency and three Russians, officials said.

"It's a great loss when you lose a vehicle like that ... but we press on," NASA space station flight engineer Barry Wilmore said during an in-flight interview on Wednesday. "We've got supplies to last us four to six months."

The Antares rocket launched Tuesday included an enhanced second-stage engine, which allowed an additional 800 pounds of cargo to be loaded aboard Cygnus. It is not known whether the rocket's extra weight and length were factors in the accident.

Shares of Orbital, which agreed to buy Alliant Techsystems Inc's aerospace and defense business in April, tumbled as low as \$25.02 and closed down 16.8 percent at \$25.27.

Alliant, also known as ATK, said it was conducting a "thorough evaluation" of the deal, touted by the companies at the time as a \$5 billion merger of equals. ATK shares closed down 6.5 percent at \$121.34.

Still, sources familiar with the situation said the deal was unlikely to unravel.

"There is no specific provision in the merger agreement for a launch failure," Orbital CEO David Thompson told analysts after ATK's statement. "As far as I know, I think things will continue."

### **Orbital's Next Launch Scheduled for April**

In other collateral damage, the explosion destroyed a small satellite built by closely held Planetary Resources Inc with backing from Google Inc CEO Larry Page, Virgin Group founder Richard Branson and other well-known investors. The company intends to mine asteroids for fuel, water and minerals.

Dulles, Virginia-based Orbital Sciences is one of two companies NASA has hired to fly cargo to the station after NASA's space shuttles were retired in 2011. Tuesday's flight was to be the third of eight under the company's \$1.9 billion contract. Its next launch had been slated for April 2015, according to internal NASA schedules.

The second U.S. supply line to the station is run by privately owned Space Exploration Technologies, or SpaceX, which is preparing its fourth flight under a separate \$1.6 billion NASA contract, slated for Dec. 9.

The accident is unlikely to affect the existing contracts but could influence the awarding of follow-up contracts that NASA is soliciting.

Russia's Roskosmos space agency said it was ready to help ferry extra U.S. cargo to the space station if NASA requested. The station is overseen by Russia and the United States, whose relations are at a low ebb over the Ukraine crisis.

In a long-scheduled mission, an unmanned Russian Progress supply vehicle was launched from Kazakhstan hours after the explosion and the capsule, carrying more than 5,000 pounds of food, fuel and supplies, reached the station Wednesday morning.

### **Russian Rocket Engines**

The Antares is powered by a pair of Soviet-era NK-33 engines refurbished by GenCorp Inc's Aerojet Rocketdyne division and resold as AJ-26 motors.

In May, an AJ-26 exploded during a ground test in Mississippi. GenCorp shares on Wednesday dropped 5.4 percent to \$16.26.

Glenn Mahone, an Aerojet spokesman, said it was working closely with investigators but declined to comment further.

With the GenCorp engine involved in two accidents, concerns over the availability of Russian engines for use in U.S. rockets have intensified. Russia has threatened to suspend exports in response to U.S. trade sanctions prompted by Moscow's annexation of Ukraine's Crimea region.

The accident should have no impact on ferrying crew to and from the station, all of whom fly

aboard Russian Soyuz capsules.

It was unclear how much Tuesday's explosion would cost Orbital. The rocket was insured for around \$40 million to \$50 million of losses, insurance sources said. One source pinned the loss at \$48 million.

Willis Group Holdings Plc, the broker for the insurance risk, declined to comment.

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