

Boeing Chief Says Antares Crash Shows Need to Abandon Russian Rocket Engines

By [The Moscow Times](#)

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The Orbital Sciences Corporation Antares rocket, with the Cygnus spacecraft onboard, rolls from the Horizontal Integration Facility (HIF) to launch Pad-0A at NASA's Wallops Flight Facility in Virginia.

CAPE CANAVERAL, Florida — As Orbital Sciences picks up the pieces, literally and figuratively, after its high-profile rocket launch explosion, accident investigators are looking closely at a potential first-stage engine problem.

Technical data relayed from Orbital's Antares rocket before and after Tuesday's liftoff from Wallops Island, Virginia, show everything was fine until the rocket's ascent stopped 15 seconds into the flight, the company said in a status report issued late Thursday.

The accident destroyed a cargo ship filled with about 2,300 kilograms of equipment and supplies for the International Space Station, a \$100 billion research complex that hovers

about 420 kilometers above Earth.

Virginia-based Orbital Sciences is one of two firms NASA has hired to fly cargo to the station following the retirement of the U.S. space shuttles in 2011. The Antares rocket, which uses a pair of refurbished Soviet-era engines to power its first stage, previously flew four times, all successfully.

The 14-story Antares rocket was flying for the first time with a new, heavier-lift upper-stage engine. "Evidence suggests the failure initiated in the first stage after which the vehicle lost its propulsive capability and fell back to the ground impacting near, but not on, the launch pad," the status report said.

Before the rocket hit the ground, a Wallops Flight Facility safety officer sent commands to detonate explosives on the booster, a standard procedure to assure wayward rockets do not threaten populated areas.

Preliminary analysis indicates the pad, the only one certified for Antares rocket launches, escaped major damage, Orbital said.

The Federal Aviation Administration, which oversees commercial spaceflights in the United States, required Orbital to purchase \$56 million of insurance coverage for third party losses and \$44 million for loss of government property for this flight, FAA spokesman Hank Price wrote in an e-mail to Reuters.

The Antares rocket has been grounded, pending the results of the investigation. Its next launch, slated for April, likely will be delayed.

"In order to ensure the safety of the public, Orbital must present credible corrective action in order for the FAA to authorize any future launches of this vehicle," the FAA said.

Antares uses two heavily modified NK-33 engines originally built for a Soviet moon program that was abandoned after repeated in-flight failures. GenCorp Inc's Aerojet Rocketdyne division bought about 40 of the mothballed engines for refurbishment and resale as AJ-26 motors.

In addition to limited supply, the AJ-26 has had technical issues, including an explosion in May during a ground test.

Two weeks ago, Orbital Sciences told investors on a conference call that it had decided on a replacement engine, but did not announce the selection.

The Russian news agency TASS reported on Friday that Orbital has chosen another Russian motor, the RD-193, manufactured by Moscow-based NPO Energomash.

If true, the decision may stoke ongoing controversy over the use of Russian engines in U.S. rockets. The Atlas 5, one of two rockets used primarily for U.S. military missions, is powered by another Energomash engine, the RD-180.

Moscow threatened to cut off exports of the RD-180 for U.S. military missions in response to U.S. trade sanctions spurred by Russia's annexation of Ukraine's Crimean Peninsula. So far,

however, business has continued uninterrupted, says United Launch Alliance, a Boeing and Lockheed Martin partnership that manufactures and flies the Atlas rocket.

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