

Liftoff Off at Russia's New Vostochny Cosmodrome

By Peter Hobson

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The Soyuz rocket came 90 seconds from being launched from the Vostochny Cosmodrome.

On the evening of Tuesday, April 26, President Vladimir Putin set out from Moscow on a 6,000-kilometer journey to see a long-held ambition fulfilled.

A few hours later he would be at Vostochny, the vast cosmodrome built on his order and carved into the Siberian taiga close to Russia's border with China. The president watched as a 52-meter tower slid back from the launch platform to reveal a rocket carrying Russian scientific equipment. He was there when, just ninety seconds before the scheduled lift-off at 11:01 a.m local time, the launch was aborted following a technical failure.

"The automated control system initiated an automatic halt," Igor Komarov, head of the Roscosmos state space corporation, told the TASS news agency. Roscosmos ruled out human error, and postponed the launch by at least 24 hours.

The visiting president seemed less than impressed. "If these glitches are the result of sloppy work, or a lack of proper oversight, I want to understand what happened ... [and] make conclusions," Putin told the same news agency.

It was a big setback for the bureaucrats in charge. Nonetheless, Vostochny's inaugural flight, even if delayed, is a big moment for Putin and Russia's space industry. The launch pad is the center of what is perhaps Russia's biggest current infrastructure project.

With a budget of between \$4 billion and \$6 billion, the cosmodrome is meant to deliver results on two fronts. First, to boost the flailing economy of the sparsely-populated Far East. Second, to reduce Russia's dependence on Baikonur, the Soviet cosmodrome on the Kazakh steppe leased by Moscow for \$115 million a year.

When complete, Vostochny should span some 700 square kilometers. Its territory will be criss-crossed with 115 kilometers of road and 125 kilometers of railway track, linking multiple launch platforms, testing and assembly sites, cosmonaut training facilities and a town of 40,000 scientists, engineers and their families.

Putin has spearheaded the project from the start, even claiming last year to have overruled expert advisors to help chose the site. Since construction began in 2012, however, Vostochny has been plagued with delays, embezzlement scandals and worker strikes over unpaid wages, prompting Putin to take personal control. His point man on the project, Deputy Prime Minister Dmitry Rogozin, threatened to "rip the heads off" saboteurs. Even so, the targeted first launch date in late 2015 was missed.

Vostochny now has one launch platform for the Soyuz, a rocket design that dates from the 1960s. A more technically challenging launch pad for the Angara, Russia's first post-Soviet rocket, will be complete only after 2020.

The difference with Baikonur is striking. Vostochny is 10 times smaller and far less militarized, with less of its infrastructure buried underground to avoid attack. Its focus is on commercial launches, a segment of the space industry where Russia currently has around 40 percent market share and earns hundreds of millions of dollars each year.

Komarov cast an optimistic note in a Roscosmos video 10 days before the failed launch. Students at Russian universities helped Roscosmos build the scientific equipment on board the Soyuz rocket, he said: "We see in them our big future."

But storm clouds are gathering for Russia's cosmic industries.

In the United States, Elon Musk's SpaceX is pushing ahead with reusable rockets that could soon be far cheaper than Russian models. Russian government funding plans have more than halved as the economy entered recession after 2014. Moscow will spend 1.4 trillion rubles (\$21 billion) over the next decade — around one-tenth of U.S. space subsidies.

Russia's response has been to bring its entire space industry under the umbrella of Komarov's state corporation. Some 200,000 Russians now work in the space sector, down from more than a million in the Soviet era.

Time will tell whether Roscosmos and its huge new cosmodrome can keep the country's space

ambitions alive.

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