

Gagarin could have died on glitch-prone flight: scientist

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Yuri Gagarin's first space flight was plagued with technical problems and his ship would never have left the ground if it had been subject to today's safety standards, a top rocket scientist said Friday.

"During Gagarin's flight there were around 11 criticisms made and abnormal situations of various levels of complexity," said veteran Soviet rocket scientist Boris Chertok, the Interfax news agency reported.

Problems began when it turned out Gagarin weighed 14 kilograms (30 pounds) too much in his [spacesuit](#), said Chertok, 99, who worked with the ship's brilliant designer, Sergei Korolev, at the design bureau that created the Vostok ship.

To lighten the load, they decided to cut off some of the cables, but accidentally cut connections to pressure and [temperature sensors](#), Chertok said, speaking at a meeting of the state-owned [spaceship](#) constructors, Energia.

In a potentially fatal error, the launch rocket sent Gagarin's ship into marginally the wrong orbit, with the minimum and maximum distances from Earth being a few kilometres out.

The difference meant that if the engines had failed and if Gagarin had needed to land using atmospheric braking, his ship would have taken not a week, as calculated, but a month, while he only had food for 10 days, Chertok said.

The first [manned space flight](#) 50 years ago came after animals died on two flights after being sent into orbit in the Vostok ships and after just two successful unmanned launches of the new modified model in March 1961.

"The council of chief designers and the state commission decided it was possible to send the ship into space with a man on board after just two normal unmanned flights," Chertok said.

"If we had thought then about calculating the reliability of the ship according to modern norms, we would never have sent a man up."

Gagarin landed 600 kilometres (370 miles) off target and even as he landed things went wrong -- he had trouble opening the air vent on his helmet and his spare parachute opened unnecessarily.

The fact that Gagarin landed with a parachute, not inside the landing capsule, was kept a secret, Chertok admitted.

"The fact that he returned to Earth in his [parachute](#) and not in the landing capsule was a very big state secret for various reasons," he said. "God forbid that anyone mentioned it at a news conference."

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