

Russia relishes chances created by end of shuttle

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In this Wednesday, June 8, 2011, file photo, the Soyuz-FG rocket booster with Soyuz TMA-02M space ship carrying a new crew to the International Space Station, ISS, blasts off from the Russian leased Baikonur cosmodrome, in Kazakhstan. The mothballing of the space shuttle will be mourned by many astronauts, but Russia is relishing the prospect of serving as the only carrier to the International Space Station, and the possible huge income in fees from ferrying astronauts to the ISS. (AP Photo/Dmitry Lovetsky, file)

(AP) -- The mothballing of the space shuttle will be mourned by many astronauts, but Russia is relishing the prospect of serving as the only

carrier to the International Space Station.

That honor will earn Russia hundreds of millions of dollars in fees for ferrying U.S. and other astronauts to the orbiting laboratory in its Soviet-vintage [Soyuz spacecraft](#).

Some experts have noted, however, that Russia has done little to design a replacement to the Soyuz, which is more than 40 years old, and risks falling behind the U.S. soon when NASA launches a new generation spacecraft.

Some, like veteran U.S. astronaut John Glenn, are wary of the United States relying too much on the Soyuz and point to some technical problems with the craft in the past few years.

"What if something goes wrong with the Soyuz?" Glenn asked in a phone interview with The Associated Press. "If we have a hiccup on the Soyuz right now, we don't have a manned program."

Unlike NASA's distinctive fin-tailed shuttle, which is reusable albeit exorbitantly expensive to run, the Soyuz can be used only once. It is a relatively streamlined affair consisting of a tiny capsule sitting atop powerful booster rockets.

The first manned Soyuz mission in April 1967 ended in tragedy when its pilot, Col. Vladimir Komarov, died on re-entry when a braking parachute failed. Three more cosmonauts died in 1971 when their [Soyuz capsule](#) lost pressure on re-entry due to a faulty ventilation valve.

The Russian space program has seen no fatalities since then, and the Soyuz has come to form the backbone of international efforts to maintain a permanent human presence in space.

The final flight of the [Apollo spacecraft](#), which took man on the first voyage to the moon in 1969, saw the completion of a groundbreaking scientific and diplomatic mission in 1975 to dock in space with a Soyuz.

Six years later, the shuttle made its first [manned flight](#). Now, even the shuttle is almost gone, while the hardy Russian craft is still around.

A [space shuttle](#) left the International Space Station for the last time Tuesday, heading home in what marks the historic closure of a program that has become synonymous to many with space travel. The Atlantis was targeting a pre-dawn landing Thursday at Cape Canaveral, Florida.

Sergei Krikalyov, chief of the Russian cosmonaut training center, praised the shuttle program as a "grandiose achievement."

"It has been a big, complex and interesting program that has achieved a lot," said Krikalyov, who holds the world record for total time spent in space with 803 days on six space missions.

He said that the shuttle's ability to carry bulky cargo was key for building the [International Space Station](#), but now smaller ships are able to ferry supplies and components. Krikalyov noted that Russia long ago took over the delivery of rotating crews to the station, after the 2003 Columbia disaster.

"Since 2003, crews have been going up and returning on the Soyuz. Shuttles fly there and back, but they haven't left behind crew," he told The Associated Press after a Soyuz launch last month from the Russian-leased Baikonur facility deep inside the former Soviet republic of Kazakhstan.

Sensing a commercial opportunity, Russia has regularly raised its prices for berths in what is described derisively by some as a "space cab." The

Soyuz's imminent monopoly status has given Russia even more bargaining leverage.

The \$56 million price that the Russian Space Agency charges NASA to send up astronauts is set to go up to \$63 million per passenger from 2014. A recent contract extension totals \$753 million and covers trips for a dozen NASA astronauts from 2014 through 2016.

If NASA is annoyed, then it is trying not to show it.

"When you look at inflation, when you look at what they are providing with the service and the capability, I look at it as a good investment. It's necessary," said Patrick Buzzard, NASA's representative to Russia.

James Oberger, a NASA veteran and currently a space consultant who has closely followed the Russian space program, played down concerns about excessive dependence on the Soyuz, saying the Russians "are equally dependent on us for power and communications at the space station."

The Soyuz makes for a cramped and uncomfortable two-day ride from Earth to the space station, yet it inspires affection among international astronauts for its reliability and deceptive simplicity of design. Some crew members have said that taking off in a Soyuz is actually less physically demanding than blasting off in a shuttle, but admit that landings are often rough.

Two consecutive landings in 2007 and 2008 were steep "ballistic" descents, subjecting the crew to high G-loads and sending one capsule far off target.

The Soyuz has remained largely unchanged in appearance over its long history, but it has been constantly subjected to modifications.

Last year saw the maiden voyage of the all-digital Soyuz, a lighter model that is able to carry more cargo. Russian Space Agency officials say minor glitches experienced on that flight in October have now been resolved.

Despite the updates, critics complain that little has been done to develop a successor to the Soyuz, leaving Russia at the risk of scrambling to keep up once a replacement for the shuttle is built and as new space powers such as China and India emerge.

Krikalyov acknowledged that government funding for design work on a Soyuz successor ship has been insufficient.

"The Soyuz has been upgraded, but we need a qualitative leap," he told AP Television News this week at Star City cosmonaut training center outside Moscow. "It's a matter of priorities. If we consider that important, then funding priorities need to change. If we think we can accept some average results, then we will eventually get them."

Igor Marinin, editor of leading Russian space magazine Novosti Kosmonavtiki, is less worried. He argues that the Soyuz meets all current requirements and will only need replacing once more ambitious missions are devised.

"If Russia sets itself broader tasks, such as flights to Mars or to the Moon, flying around the Moon, or the intensive construction of a new [space](#) station, then maybe we will need a new craft," Marinin said. "But to create new technology, you need a purpose for it."

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