

U.S. astronaut corps evolves

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Still hoping for that job as an astronaut, even as the last days of the space shuttle are winding down? You may want to practice your Russian.

As the country marked the 50th anniversary of Alan Shepard's 1961 Cold War [space](#) trip May 5, things have changed for the modern astronaut.

Only two shuttle launches are left, with Endeavor on the [launch pad](#) for a Monday flight and the final Atlantis flight scheduled for June 28. After those shuttle missions end, astronauts will likely head to the [International Space Station](#) aboard Russian Soyuz rockets, at least until 2016.

"A lot of the training now is in Russia," says NASA Johnson Space Center [astronaut training](#) chief Duane Ross.

At this point, NASA isn't even accepting applications for astronauts, Ross says. With the shuttle program winding down and the loss of its four extra seats, the astronaut corps has shrunk from about 80 to 60 in recent years. A new astronaut class accepted in 2009 will graduate into full-time status later this year, enough to meet the space agency's current needs.

These days, astronauts typically spend at least six months in Russia training with cosmonauts on Soyuz equipment and the international portions of the space station.

"Can you imagine John Glenn or Alan Shepard speaking Russian? That

would have been a bad thing back then," says space psychologist David Musson of Canada's McMaster University.

President Dwight Eisenhower decided that the first "Mercury Seven" class of astronauts, including Shepard, would all come from the ranks of military test pilots, selected before the job became a ticket to celebrity. "Astronauts quickly became iconic figures," says space policy expert John Logsdon, author of the just-released "John F. Kennedy and The Race to the Moon."

Kennedy called for space cooperation with Russia, Logsdon says, "and fought hard for it in the last two months of his life." So, Kennedy might have been pleased at the U.S.-Russian cooperation, Logsdon adds, that has dominated manned spaceflight since the 1990s.

"Cultural sensitivity and language training are part of the astronaut's job now," Musson says. "All the astronauts know a little Russian. Some of them know a lot."

Rather than the intense 15-minute ride experienced by Alan Shepard, who endured the pressure of acceleration equal to 11 times his own body weight, modern astronauts must endure "months of confinement in tight, cramped quarters," he says.

"Astronauts have always been high-achieving individuals who demand a lot of themselves and of the people around them," says historian Margaret Weitekamp of the Smithsonian's National Air and Space Museum in Washington, D.C.

Although military pilots once dominated the ranks of astronauts, NASA recruited its first class of mission specialists in 1978, which included women and minorities, physicians, scientists and engineers who operate experiments and equipment on space flights, notes Weitekamp. "The

current moment is akin to the drawdown of the Apollo program, where some astronauts retire and others hang on to help design the next manned space vehicle."

NASA is a "zero-defect culture," she adds, so would-be astronauts must excel at everything they do, besides having advanced degrees. "They don't just play sports, they are professional-quality athletes. They aren't just musical, they are concert-quality musicians," she says.

Only about 500 people have traveled into space, "so there is still a certain glamour about the job," Logsdon says.

For anyone who can't wait until NASA begins accepting applications again, which Ross says will happen at some point, private space company Virgin Galactic in April announced openings for pilots. They must be experienced graduates of a test-pilot school, "who are broadly experienced with both high-performance fast-jet-type airplanes and large multi-engine types. ("Prior spaceflight experience is desirable," the ad says.)

Virgin Galactic announced a successful 51,500-foot-altitude test flight of its SpaceShipTwo craft on May 4.

The current astronaut corps may be smaller than it was a decade ago, but "there will still be astronaut jobs to be filled," Ross says, adding that there has been no particular increase or drop in inquiries to his office about applying.

Adds Musson: "Little boys and girls will still want to be [astronauts](#)."

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