

Air and Space this Week

Item of the Week

Three Important Women in Aviation and Space Exploration

Originally appeared June 14, 2021

KEY WORDS: Bessie Coleman Valentina Tereshkova Gigi Coleman Bykovski
Cosmonaut Sally Ride First Woman in Space

Three anniversaries this week involve women who have made an important contribution in aviation and Space exploration: Bessie Coleman, Valentina Tereshkova, and Sally Ride. Coleman was the first woman to earn a pilot's license (100 years ago on 6/15), Tereshkova was the first woman to fly in Space (58 years ago on 6/16) and Ride was the first American woman to fly in Space (38 years ago on 6/18).

Bessie Coleman

Elizabeth Coleman was born on January 26, 1892, in Atlanta, Texas. She was one of a large number of children of a sharecropper, so she spent considerable time in the fields. But she showed outstanding aptitude for math, but her segregated one-room school offered limited learning potential along with a four-mile walk every day. In spite of these difficulties, she received a scholarship to the Missionary Baptist Church School, and then managed to go to the precursor to the Langston University. Her funds ran out after a single semester.

She left Oklahoma for Chicago in 1915, where she lived with her brothers. She took a job in a barber shop, where she became enamored with the stories she heard told by WWI pilots home from the War. She wanted to "amount to something" by becoming a pilot, and took a second job to save the necessary funds.

But no U.S. flight schools of the day would accept a woman student, especially a Black one.

Robert Abbott, founder and publisher of the Chicago Defender, a Black-oriented newspaper, heard of her desire to fly and encouraged her to study abroad, and her brothers agreed. Abbott publicized her story, and the Defender and prominent Black businessman, Jesse Binga, provided sponsorship.

Bessie learned French and went to Paris in late 1920. She learned to fly on the even-then-primitive Nieuport 564 biplane. She excelled in her lessons and, on **June 15, 1921**, she became the first woman, the first Black person, and the first Native American (two of her paternal grandparents were Cherokee) to earn an international pilot's license; hers was from the Federation Aeronautique Internationale. She continued her flight training for a couple of months, then returned to the U.S. in late 1921.

The only way to make a living as an aviator in the early 1920's was to be a risk-taking "barnstormer." Her fame as a "first" helped, but that's the way it was. Her skills needed upgrading, so she went back to Europe. Her intrepid nature must have appealed to some, because she was able to visit with Anthony Fokker and receive advanced flight training from top Fokker pilots. She was ready to storm!

Coleman flew as "Queen Bess" or "Brave Bessie" and became a popular draw at airshows. She usually flew a Curtiss JN-4 Jenny biplane. Her debut was on September 3, 1922, at an event honoring black veterans of WWI, where she was billed as the "World's Greatest Woman Flier." Eight WWI ace pilots and a parachutist also performed that day.

Crowds thrilled to her aerobatics, loops, figure-eights, and other dare-devil stunts, all delivered in a great, flamboyant style. But she never forgot her roots, now that she had "become someone," and promoted both aviation and civil rights aggressively; she never performed at a venue that discriminated. She also refused a potentially-valuable movie role, because it portrayed negative racial stereotypes.

Bessie Coleman was an inspiration to the next generation of young Black men and women who sought to fly or pursue other fields, in spite of the obstacles they would face. A number of the famous Tuskegee Airmen of WWII were motivated in their youth to work to fly, like Bessie Coleman had done.

Coleman purchased a used Curtiss JN-4 Jenny in Dallas in early 1926. Her publicity guy, William Wills, and her mechanic flew it from there to Jacksonville, where the next show was to be. They had three forced landings *en route*, all due to poor pre-sale maintenance. She took a "the show must go on" attitude, and would perform anyway, overruling the objections of those most recently exposed to the plane's deficiencies.

On April 30, 1926, Coleman took off in her new-to-her Jenny. Wills was piloting, and Bessie was in the second cockpit position. She did not have her seat belt on, because she was leaning out a bit to observe the characteristics of the drop zone for her parachute drop in the show the next day.

The aircraft was cruising normally in level flight at about 3000 feet altitude. Then, abruptly, the plane went into a rapid dive and wicked spin. Coleman was thrown from the cockpit, and died in the fall. Wills could not solve the problem, and died in the resulting crash and fire. Post-accident investigation showed negligent maintenance as the cause; a wrench left in the works jammed Wills' controls. Coleman would have died with him in the crash, had she not perished in the fall.

Her career and passing were not publicized much in the major media outlets of the day, but she was famous and mourned in Black-oriented publications. Over the years, the story of her accomplishments and perseverance in the face of prejudice gained a lot of deserved traction. She is now a member of both the National Women's Hall of Fame and the National Aviation Hall of Fame.

Bessie's role in early flight and early Civil Rights, and the **100th anniversary** of her milestone pilot's license, makes her the hands-down choice for the Item of the Week. Period. However, two other important "firsts" in women in aviation and Space exploration also occur this week: the first flight in Space by a woman, Valentina Tereshkova, and the first flight in Space by an American woman, Sally K. Ride.

EAA Museum Event: Gigi Coleman, Bessie's grand-niece, will be at the Experimental Aircraft Association Museum in Oshkosh, Wisconsin on June 15, the 100th anniversary of her great aunt becoming the first woman to earn a pilot's license. She'll be wearing vintage flying clothes, and will talk about Bessie's ambition to fly, in spite of numerous obstacles to her dream. Gigi will speak at 10:30 AM and 1:30 PM CDT at the EAA Museum's Founder's Wing. See:

<https://www.avweb.com/aviation-news/grand-niece-to-celebrate-centenary-of-bessie-colemans-pilot-license>. The AOPA has posted a demo of Gigi Coleman's presentation, at: <https://www.aopa.org/news-and-media/all-news/2021/february/17/bessie-coleman-centennial-celebrates-legacy-of-inspiration>.

Valentina Tereshkova

"If women can be railroad workers in Russia, why can't they fly in Space?"

The manned Space programs of the U.S. and U.S.S.R. in the 1960s were seen by many, then and now, as a peaceful manifestation of the Cold War. Two competing political/economic systems were vying for support from the rest of the world, which made the branding and symbolism of those two programs of paramount importance. Keeping track of "firsts" was rigorously reported. The Russians had gotten a person in Space, orbit no less, first. All eyes were on the U.S. Could we catch up and win the "Race to the Moon?"

Russia scored another high-profile first on **June 16**, 1963.

Valentina Tereshkova was born in a small village on the Volga River northeast of Moscow on March 6, 1937. Her father, a collective farmer turned tank commander, died in the Winter War in Finland two years later. Her widowed mother packed up her three children and moved to find employment. Valentina completed her initial schooling, then helped her family's finances by working at a tire factory, and then a textile mill. All the while, she took correspondence courses, graduating with a tech degree in 1960. One of her hobbies was parachute jumping, which she pursued with vigor. She also joined the Communist Youth League, and later (1962), the Communist Party.

After Gagarin's flight, the Russians caught wind that the Americans might be planning to be the first to send a woman into Space. The Russian Director for Cosmonaut Training believed that have an American woman in Space before a Russian woman would be an insult to the patriotic feelings of Russian women everywhere, and Premiere Khrushchev recognized the propaganda value of such a first.

Tereshkova was impressed by Gagarin's accomplishment, and she and four other women were selected for the next cosmonaut training pool. Like the men, they had a height and weight

requirement dictated by the capsule dimensions, but for the women, there was a parachute experience requirement in lieu of piloting experience. Cosmonaut selection came with an offer to become a junior officer in the USSR Air Force, which Valentina and the others accepted.

Chuck Yeager and some of the other hot-shot test pilots of the 1950s derided those colleagues who chose to become astronauts. Let's face it, the piloting requirements for the early capsules, especially USSR ones, was pretty limited. As Chuck would say, "A monkey could do it," with some truth. But to be fair, the Mercury astronauts did play a significant role in the development of some aspect of orbital missions and hardware, and cosmonauts received a lot of practical engineering training and underwent a lot of stressful medical evaluation, and the five women were no exception. Two would wash out along the way. Valentina's parachuting prowess, her Party membership, and the fact that her father had been first a collective farmer and then a KIA tank commander, made her the choice to be the first woman in Space. When her selection was announced, she was promoted to full Lieutenant.

The Russians planned a two-capsule flight, with an orbital rendezvous of sorts, not the type of close-formation flying demonstrated by *Gemini 6* and *7* a few years later. Cosmonaut Valery Bykovsky was launched in *Vostok 5* on June 14, 1962. *Vostok 6* and Cosmonaut Tereshkova were launched successfully on **June 16, 1962**.

Both flights were relatively uneventful. They eventually managed to get to within 5 km of one another. She flew for 48 orbits, and her flight time, almost three full days, was longer than the combined flight time of all U.S. missions flown by that time. During the late stage of re-entry, she ejected from her capsule at ~20,000 feet and descended safely by parachute.

She was and still is the only woman to fly in Space solo.

Both Tereshkova and Bykovsky were given the full-scale publicity treatment by the Russian press. Both were named "Hero of the Soviet Union" and both were awarded the "Order of Lenin." Tereshkova was promoted to Captain *during* her flight.

The International Women's Congress met in Moscow a week after Tereshkova's flight, and she was the star of the show. Many foreign nations invited her to come and visit, which caused some consternation behind the scenes, because a large number of bureaus had to sign off on approving her travel. The Central Committee, recognizing the enormous PR value of the requested visits, gave their blessing, paving the way for her to make 42 goodwill trips abroad.

Tereshkova married fellow cosmonaut Andriyan Nikolayev on November 3, 1963, a gala affair that generated considerable publicity. They had a daughter, Elena, but they divorced in 1982.

Captain Tereshkova was very good at being a role model and spokesperson for the Russian space program. But she had been gaining a lot of engineering knowledge, both book-learning and practical, and wanted to serve the Russian Space program as an engineer and cosmonaut. But while she was finishing up her degree from the Russian Aviation Engineering Academy, she was appointed the leader of the Committee for Soviet Women, an important political position.

Fellow hero cosmonaut, Yuri Gagarin, died on March 27, 1968, and the Russian government was loathe to risk her in spaceflight. Her military career continued, however, and she

promoted to Colonel in 1976, and she completed a Ph.D. in aeronautical engineering in 1977. She became an instructor at the Gagarin Cosmonaut Training Center. She also remained politically active during this phase of her career. In 1995, she ran for a seat in the Duma, but was not elected, but she did receive an honorary promotion to Major General. She turned 60 on April 28, 1997, forcing her retirement from the Air Force. She ran for the Duma again in 2003, and won this time. She is still politically active today.

General Tereshkova received numerous honors and awards over her career. Authorities tracked down the location of her father's death and erected a memorial there in his honor. She was and is one of the few living people to have a large lunar crater named after them, she was one of the Torch bearers for the 2008 Summer Olympics, and she was named "Greatest Women Achiever of the 20th Century" by the International Women of the Year Association.

Sally K. Ride

I covered Sally Ride's accomplishments in life on the advent of what would have been her 75th birthday, in the May 25, 2021, Item of the Week, so I won't say much else about her here. See the Item archive for more on Dr. Ride [here](#).

REFERENCES

Bessie Coleman

National Aviation Hall of Fame: <https://www.nationalaviation.org/our-enshrinees/coleman-bessie>

National Air and Space Museum: <https://airandspace.si.edu/bessie-coleman>; <https://pioneersofflight.si.edu/content/bessie-coleman-0>; and <https://airandspace.si.edu/stories/editorial/bessie-coleman-barnstorming-through-barriers>

Bessie Coleman's Pilot License: <https://airandspace.si.edu/multimedia-gallery/99-15416640jpg>

National Women's History Museum: <https://www.womenshistory.org/education-resources/biographies/bessie-coleman>

Bessie Coleman website: <http://bessiecoleman.org>

Texas State Historical Association: <https://www.tshaonline.org/handbook/entries/coleman-bessie>

Rich, Doris L. and Mae Jemison, 1995, *Queen Bess: Daredevil Aviator*, Smithsonian Books, ISBN-13: 978-1560986188

Planz, Connie, 2014, *The Life of Bessie Coleman*, Enslow Publishers, ISBN-13: 978-0766061187

Lindburgh, Reeve, 1998, *Nobody Owns the Sky: The Story of "Brave Bessie,"* Chadwick, ISBN-13: 978-0763603618

Valentina Tereshkova

NASA: Tereshkova and Ride: <https://www.nasa.gov/mediacast/valentina-tereshkova-and-sally-ride-women-space-pioneers>

History.com: <https://www.history.com/this-day-in-history/first-woman-in-space>

Wikipedia: https://en.wikipedia.org/wiki/Valentina_Tereshkova

NASA: https://starchild.gsfc.nasa.gov/docs/StarChild/whos_who_level2/tereshkova.html

NASM: <https://airandspace.si.edu/people/historical-figure/valentina-tereshkova>

Space.com: <https://www.space.com/21571-valentina-tereshkova.html>

Sharpe, Mitchell R. (1975). ["It is I, Sea gull;": Valentina Tereshkova, first woman in space.](#) Crowell Publishing. ISBN 978-0-690-00646-9. [Tereshkova's call sign on Vostok 6 was "Chaika," Russian for "seagull."]

Last Edited on 13 June 2021