

## WOMEN IN SPACE— AND THE WOMEN WHO HELP THEM FLY

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UPI/Bettmann Newsphotos



Sally Ride at Kennedy Space Center, 1983

<sup>1</sup> When Sally Ride flew in the space shuttle in June, 1983, her face appeared in newspapers and on television screens across the world—and no wonder. She was the first American woman, and only the second woman in the world, to penetrate space. (Soviet Union cosmonaut Valentina Tereshkova had gone into orbit in 1963.) But Sally wasn't the first woman to be involved in the United States space program—not by a moon shot.

<sup>2</sup> The definition of the “right stuff” for an astronaut has changed in some ways since the early days of the space program, making it possible for a wider variety of people, including women, to go into space.

<sup>3</sup> Astronauts no longer need to be experienced test pilots, for example. Today many astronauts, such as Sally, a physicist and an astronomer, acting as “mission specialists,” are scientists rather than pilots. Mission specialists perform experiments aboard the shuttle and assist with other tasks such as launching satellites. The first women in the astronaut program were all mission specialists.

<sup>4</sup> Some things about being an astronaut haven't changed, though. Astronauts must still be physically fit, which was easy for Sally, a former tennis champion who had always enjoyed sports. Astronauts must remain calm under pressure, and being tranquil during stress was another trait Sally had acquired from her tennis matches.

<sup>5</sup> Five other women joined the astronaut training program at the same time Sally did, in July, 1978, and additional ones have been assigned since then. These women astronauts are experts in a variety of fields. Anna Fisher, for example, is a specialist in emergency medicine, and Kathryn Sullivan is a geologist.

<sup>6</sup> An important part of astronaut training involves learning “ground jobs” at Johnson Space Center in Houston or Kennedy Space Center at Cape Canaveral, Florida. For a while Sally Ride worked as the capsule communicator, or “cap-

com," for several space shuttle flights. The cap-com is the only person who talks directly to the shuttle crew during a flight. Working from Mission Control in Houston, the cap-com relays instructions and information between ground control and the astronauts. When she was cap-com, Sally's steady, cool voice became familiar to millions of listeners as the shuttle flights were shown on television. Her demeanor also impressed fellow astronaut Robert Crippen, who was later the commander of Sally's shuttle flight.

<sup>7</sup> During her training, Sally met many other people who worked for the National Aeronautics and Space Administration (NASA), the government agency in charge of the space program. Sally and the other astronauts were fully aware that their flights could never materialize without the more mundane efforts of the thousands of workers who remain on the ground.

<sup>8</sup> Today, many of those workers are women, but when Sally Ride began her training, women were still a somewhat unusual sight at the Johnson and Kennedy centers, although this is no longer true. Both the number and the stature of women in the space program have increased in recent years.

<sup>9</sup> Most men at the space centers have adjusted well to working with women. Although blatant discrimination against women was never common, some problems did occur when the women were newcomers.

<sup>10</sup> Systems engineer Astrid Heard remembers such a problem with an older male co-worker and how she handled his rancor. "I just kept doing my job," she recalls. Her answer is typical of the professional attitude of women employed in the space program.

<sup>11</sup> Women in the space program, whether astronauts or workers on the ground, tend to have certain things in common. Most of them were superior students, especially in mathematics, and most were good at sports, too. Often they were fascinated with flying, in the air or in space or both, from early childhood and eventually earned pilot's licenses.

<sup>12</sup> JoAnn Morgan is one who was attracted to space when she was young. As a teenager, she stayed up all night to watch the launch of America's first space satellite in 1958. Later she became an engineer in the computer services division of the Kennedy Space Center, still fascinated

by the missiles and space vehicles that computers help to leave the ground. Kathryn Clinton, another engineer at the space center, was the first black woman to hold such a job.

<sup>13</sup> These days, many women in the space program start their careers young, but none started younger than Jackie Parker, who became a flight controller at Johnson Space Center in 1979. She was only eighteen at the time and had already graduated from college the year before. At the space center, Jackie was given the crucial job of monitoring the space shuttle's five onboard computers during the shuttle's launch.

<sup>14</sup> Kathleen Weaver scored a "first" of a different kind as the first woman paramedic and fire fighter to be hired at Kennedy Space Center. Later another woman, Melany Baskin, was also hired for this position.

<sup>15</sup> Most of the time, Kathleen and Melany stand ready to help during fires or other accidents at the center, but they have also been trained in special rescue techniques to save astronauts' lives.

<sup>16</sup> Sally Ride may not have met some of the women who are part of the space program, because those women do not work at the space centers. One of them, Irene Long, Sally may meet someday. Irene, a doctor, was taking special training in aerospace medicine sponsored partly by NASA at about the same time Sally was preparing to become an astronaut.

<sup>17</sup> Irene was the only black and the only woman doctor in the civilian aerospace program at that time. She didn't spend much time thinking about being unusual, but instead looked forward to the future, when work such as hers would be common. "I'd like to live on a colony on the moon and have a little hospital there," she said.

<sup>18</sup> Eilene Galloway may never have met Sally Ride, either, yet her work has had profound effects on the tasks Sally and all the other astronauts perform in space. When nearly eighty years old, Eilene finally decided to retire from a long career as an expert in space law. Her advice has shaped NASA's plans and United States government treaties with other nations concerning space. She has tried to help governments see "the broad picture" and cooperate in exploring and developing space in a peaceful way.

<sup>19</sup> Some women who do not work for NASA at all have also played key roles in America's space

ventures. One is Linda Morabito, an engineer with the Jet Propulsion Laboratory in Pasadena, California, and a member of a team studying photographs taken by the space probe *Voyager*. She followed the probe's trajectory by studying background stars in the photographs.

<sup>20</sup> One day in March, 1979, soon after *Voyager* passed the planet Jupiter, Linda noticed in a photograph taken by the probe a strange plume rising from the surface of Io, one of Jupiter's moons. The plume turned out to be gas from an erupting volcano—the first ever to be discovered outside of planet Earth!

<sup>21</sup> Being an astronaut is still more glamorous than any other space job, of course, but also carries the greatest risk. Two women died when the spacecraft *Challenger* exploded in January, 1986. They were astronaut Judith Resnick and New Hampshire high school teacher Christa McAuliffe, who was to have been the first "ordinary person" to make a foray into space. But the women who go into space accept this risk just as the men do, realizing that the pioneers of the space age must face danger just as did the pioneers who settled our country. Courage as well as a spirit of adventure is characteristic of all the women on the ground and in the air who keep our space program reaching for the stars.

#### HOW WELL DID YOU READ?

##### Do you remember the facts?

- 1. The country's main space centers are in**  
A California and Washington, D.C.  
B Illinois and New York  
C Texas and Florida
- 2. The agency in charge of our space program is**  
A NATO  
B NASA  
C SEATO

##### Did you get the point?

- 3. Today, women workers at the space centers are**  
A common and usually well accepted  
B primarily computer systems engineers  
C few but highly placed and well paid

##### 4. Women who do important work in the space program

- A are all trained in mathematics and physics
- B must be employees of NASA or the U.S. government
- C have varying interests and educational backgrounds

##### 5. Which of these persons would probably make the poorest astronaut?

- A A former research physician turned professional archer
- B A physics professor who rides a bicycle daily
- C A business executive who has won the Boston Marathon

##### 6. A capsule communicator

- A functions as the shuttle crew's "lifeline" to Earth
- B is the most important "ground" job at NASA
- C both A and B

##### 7. Women who go into space probably think of themselves as

- A heroes
- B pioneers
- C ordinary workers

#### Can you draw the right conclusions?

##### 8. One of the times Sally Ride most needed her ability to be cool under pressure was probably when she

- A talked to reporters after her flight
- B reported for training to be an astronaut
- C met other workers at the space centers

##### 9. NASA-trained women astronauts who go into space in the future will probably receive

- A just as much publicity as Sally Ride
- B less publicity than Sally Ride
- C no publicity at all

##### 10. Ten or twenty years from now, an article about the space program will probably be

- A necessary to encourage women to enter it
- B censored to protect the security of space workers
- C unconcerned about the gender of astronauts

## LEARN ABOUT WORDS

**A.** Often you can tell the meaning of a word from its context—the words around it.

**Directions:** Find the word in the paragraph that means

1. appearance and behavior (6)
2. ordinary (7)
3. position or rank gained by achievement (8)
4. extremely obvious (9)
5. resentment (10)
6. one who does some of the work of a doctor (14)
7. involving the atmosphere and space (16)
8. course or path (19)
9. brief expedition (21)

**B.** A word may have more than one meaning. Its meaning depends on the way it is used.

**Directions:** Decide which meaning fits the word as it is used in the paragraph. Write the letter that stands before the meaning you choose.

10. shot (1)
  - A the launching of a spacecraft
  - B a medical injection
  - C the directed firing of a weapon
11. mission (3)
  - A a church set up to attract converts
  - B an official group sent to a foreign country
  - C an assigned task or operation
12. fields (5)
  - A areas or subjects of activity
  - B open land areas
  - C areas where battles are fought
13. impressed (6)
  - A produced a strong effect on
  - B made a mark by pressure
  - C took by force for military service
14. adjusted (9)
  - A regulated
  - B adapted
  - C rectified

**C.** The suffixes *-ate* and *-ive* both mean "of the nature of" or "relating to." The suffix *-ate* is usually used to form adjectives from nouns. The suffix *-ive* is usually used to form adjectives from verbs.

**Directions:** Decide which suffix should be added to each word below to form an adjective. Write the adjective.

- |                |             |
|----------------|-------------|
| 15. attract    | 19. palm    |
| 16. proportion | 20. impulse |
| 17. oppress    | 21. college |
| 18. create     | 22. fortune |

**D. Figures of speech** are used to make language richer and more vivid. **Personification** is a figure of speech in which a thing, quality, or idea is treated as if it were a person: "Oh gentle sleep! Nature's soft nurse . . ." is a personification because sleep is treated as if it were a person—a nurse. "There stands Jackson, like a stone wall" is not a personification, because Jackson is regarded as if he were a thing—a stone wall.

**Directions:** Read each quotation below. If it is a personification, write **P**; if it is not a personification, write **N**.

23. "I am as vigilant as a cat to steal cream."
24. "Nature, with equal mind, sees all her sons at play."
25. "He wears the rose of youth."
26. "And on his grave, with shining eyes  
The Syrian stars look down."
27. "Spring is come home with her world-wandering feet."
28. "The steep and thorny way to heaven . . ."
29. "The ever-whirling wheel of change . . ."
30. "Wise poets that wrap truth in tales  
Know her themselves through all her veils."
31. "Philosophy [is] the lumber of the schools."
32. "Tea, although an Oriental, is a gentleman at least;  
Cocoa is a cad and coward; cocoa is a vulgar beast."
33. "I am, out of the ladies' company, like a fish out of water."