Almost Astronauts:  
The Story of the Mercury 13

Objective
Students will learn about the Mercury 13, a group of women who trained to become the first women astronauts, and the discrimination they faced within the space program.

Introduction
At the dawn of the space age, NASA trained male astronauts to explore the new frontier on behalf of the United States. At the same time that he trained these men for space travel, Dr. William Randolph Lovelace II also secretly put 13 women pilots through the same physical and psychological tests. Lovelace’s project was abruptly canceled in its final stage when NASA and the US Government failed to support equal opportunity in space flight. In this activity, students will learn about the triumphant and tragic story of the “Mercury 13” program in the participants’ own words shared in a panel discussion at the University of Wisconsin Oshkosh on May 11, 2007.

Instructions
Students will watch parts 1 and 2 of the University of Wisconsin Oshkosh's podcast “Honoring the Women of Mercury 13 Panel Discussion” over two class periods. After viewing each part, students will answer worksheet questions. On the second day, the teacher will lead a class discussion based on the worksheet prompts. Students are encouraged to read the panelists’ biographies before watching the podcasts.

In Class Time
90 minutes

Prep Time
30 minutes

Materials
- A/V equipment
- Access to iTunes U
- Photocopies of worksheets

Videos
Access to iTunes U > University of Wisconsin Oshkosh > Honoring the Women of Mercury 13 Panel Discussion Parts 1 and 2
- Part 1: start 6:15, end at 44:39 (total video length: 38:24)
- Part 2: start 0:00, end 28:30 (total video length: 28:30)

Discussion Questions
1. How did these women develop their early passion for flight? Did family and friends encourage or discourage their early interests in aviation?
2. How were the women pilots treated by their pilot peers? What kind of discrimination did these women experience at work?
3. How were women pilots expected to act and dress?
4. How did the women become involved with the Lovelace Project?
5. What kinds of physical and psychological tests did the women participate in as part of the Lovelace Project?
6. Why was the training program canceled?
7. What kind of discrimination did these women experience from NASA and government officials?
8. What of personal and professional sacrifices did these women make for their dreams?
9. What opportunities were available to the women after the project was canceled?
10. What was the difference in attitude between first men and women who were trained for space flight?
11. Do these women remember their training fondly or with bitterness? How do you know?
12. How do the women of Mercury 13 feel about Valentina Tereshkova, the first woman in space?
13. What impressed/shocked you most about their experiences?
14. What question would you like to ask the Mercury 13?

Further Reading & Additional Resources

- For Some...The Sky is Not the Limit: Honoring the Women of Mercury 13 University of Wisconsin Oshkosh
- Mercury 13- the Women of the Mercury Era

Members of Mercury 13 with space shuttle Discovery in 19965 (from left: Gene Nora Jessen, Wally Funk, Jerrie Cobb, Jerri Truhill, Sarah Rutley, Myrtle Cagle and Bernice Steadman), courtesy NASA
Biographies of the Panelists (in order of appearance in video)\footnote{From the University of Wisconsin Oshkosh website For Some...The Sky is Not the Limit. See http://www.uwosh.edu/mercury13/bios/index.php for biographies of all of the women in the Lovelace program.}

**Sarah Lee Gorelick Ratley**
Born in Kansas City, Kan., Sarah Lee Gorelick Ratley was working for AT&T as an electrical engineer when she was solicited by Dr. Lovelace for testing. She received the phone call on Saturday, and she was in Albuquerque, N.M., at the clinic on Monday.

Educationally, she was as qualified as any Mercury 7 astronaut, with a bachelor of science degree in mathematics, with minors in physics and chemistry. At 28, she held a commercial pilot’s license, with airplane single and multi-engine land ratings, single engine sea, instrument, rotor and glider ratings.

A free-spirited person, Ratley participated in six All Women Transcontinental Air Races, also known as the Powder Puff Derby, and numerous other races, including the International Women’s Air Race. When the Mercury 13 testing was complete, she left AT&T and became an accountant. She now works for the IRS in Kansas and still enjoys flying her Cessna 172 for fun.

**Geraldine "Jerri" Sloan Truhill**
Jerri Sloan Truhill’s first exposure to flying was at the age of 4, while sitting in the cockpit of an airplane chartered to take her father to a business meeting in Texas. When she told her father how much she loved flying, his answer was reflective of the attitudes of the era: “Work hard, do well in school and you can grow up to be an air hostess and fly all the time.”

Determined to become a pilot, she began taking after-school flying lessons at age 15—unbeknown to her parents. She got caught, however, and was sent to a Catholic school in San Antonio. But that was only a setback in her path to the sky: by 1960, she was one of the country’s most experienced pilots.

In a partnership (and, eventually, a marriage) with another great pilot, Joe Truhill, she flew twin-engine North American B-25s for Texas Instruments. She also helped to develop Terrain Following Radar and smart bombs, which entailed very dangerous, top-secret missions over the Gulf of Mexico. She has participated in numerous air races and has won more than a few trophies.

After she and the rest of the Mercury 13 were “scuppered by NASA” (as she puts it), she resolved to speak out on radio programs and in the press whenever she witnessed NASA favoring white men over others.

Truhill returned to Texas Instruments and also served as vice president for two companies: Air Freighters International and Air Services Inc., a test pilot and plane company.

**Bernice “B” Steadman**
After earning her private pilot’s license at age 17, Bernice "B" Steadman took to the skies and never looked back. She started her own flight school, charter service and fixed base operator at Bishop International Airport in Flint, Mich., where she flew chartered flights and sold aircraft. She also taught Reserve Air Force pilots after World War II.
In 1946, she earned her commercial pilot’s license and went on to earn the highest FAA license, the airline transport pilot license. In addition to winning the Transcontinental Air Race and the International Air Race, she was elected president of the International Ninety-Nines, a women’s flying group formed by Amelia Earhart and other women aviator pioneers.

Steadman was one of the first women to undergo astronaut testing at Lovelace Clinic in Albuquerque, N.M., following Jerrie Cobb, and became one of the Mercury 13.

Although she does not pilot planes today, Steadman remains active in many aviation organizations. She has served as president of the International Women's Air and Space Museum and serves as a chair of the board for that organization.

**Rhea Allison Hurlle Woltman**

Rhea Woltman was born to the life of a central Minnesota farm girl. She once flew a Piper Super Cub seaplane from Houston, Texas, to Lake Hood in Anchorage, Ala., completely on her own. She also instructed and towed gliders for Cadets at the Air Force Academy.

A secretary and executive pilot for a small aircraft sales and engineering firm, she kept her aspirations to herself. She never had even mentioned her exceptional flying skills to her family, much less that she’d been selected to be tested for the space program. They found out when *Life* magazine featured her with the other Mercury 13 women.

She has flown in the International Women’s Air Race and in the Powder Puff Race. She possesses a commercial pilot’s license, with airplane single-engine and multi-engine land ratings, a single engine sea rating, an instrument rating, and is a certified flight instructor and certified ground instructor. She has flown all over the United States, Canada and Mexico.

Shortly after the Mercury 13 testing, Woltman stopped flying professionally. She lives in Colorado.

**Irene Leverton**

A strong-willed woman, Irene Leverton’s first aviation experience was as a child in Chicago when she and her mother would go to a local park to enjoy parachute rides.

Wanting to pursue aviation and, furthermore, to fly fighters, she attempted to join the Women Airforce Service Pilots (WASP) when she was 17 by using a fake logbook and an older friend’s birth certificate. She greatly admired the WASP, and at the time that was the best flying a woman could do. Unfortunately, it didn’t work out.

That didn’t stop her though. By 1961, Leverton held a commercial pilot’s license, with airplane single and multi-engine land ratings, instrument ratings, and airplane single engine sea ratings and had built up more than 9,000 flight hours—far more than any Mercury 7 astronaut. She was 34 and single when she was contacted by Dr. Lovelace.

In 1965, Leverton attempted a Pacific Ocean crossing in a single-engine Comanche. Seven hours and 30 minutes out of San Francisco, she had an electrical fire. With all radio equipment out and no navigation gear available, she turned around. Seven hours and 15 minutes later, she landed back in San Francisco.
Leverton continued to fly after the Mercury 13 testing, and up until recently, she still flew part time for a manufacturing company in Arizona. She currently works with a Civil Air Patrol squadron, Squadron 206, as a flight check pilot. She has in excess of 25,400 flight hours, and currently owns a consulting business, Aviation Resource Management in Arizona, and is a designated aviation safety counselor through the FAA.

**Geraldyn “Jerrie” Cobb**
Born in Oklahoma in 1931, Jerrie Cobb took her first flight at the age of 12, in the backseat of an open-cockpit biplane flown by her father. Hooked on flying, she gained her private pilot’s license at age 17, her commercial pilot’s license when she was 18 and flight instructor’s rating soon thereafter.

She was determined to pursue a career in aviation as a pilot, a difficult feat in the 1950s. Working at the Miami airport, Cobb met Jack Ford, a veteran pilot of WWII who had a service ferrying aircraft worldwide. She talked him into a job, and her first stop was South America on the advanced trainer of that era, the AT-6 Texan. While ferrying aircraft for this firm, she flew all types of aircraft worldwide, including sleek military aircraft and four-engine bombers to France.

Her many flight hours earned Cobb a wonderful reputation in the aviation community, and she was perhaps the most experienced high-performance propeller aircraft pilot of her day. She’d flown crop dusters, gliders, blimps and B-17s. She’d earned world records for speed, altitude and distance. And by 1960, she had 10,000 flying hours, compared to John Glenn’s 5,000.

This lead to her invitation to the Lovelace Clinic in Albuquerque, N.M.—the same clinic and doctors and the same program that selected the astronauts who later became the Mercury 7. Cobb’s early selection by the Mercury Astronaut Selection Team made her the first, and only, woman to undergo and successfully pass all three phases of Mercury astronaut tests. Denied a chance to go into space due to gender and the “accepted social order of their time” (as quoted by John Glenn), she became a consultant for NASA, but quit after finding she had no impact.

Cobb then embarked on a new career in the Amazon jungles as a missionary pilot, for which she was nominated for the Nobel Peace Prize in 1981.

**Gene Nora Stumbough Jessen**
Gene Nora (pronounced Janora) Stumbough Jessen became interested in flight as a girl in Illinois, where she was a member of Civil Air Patrol. She learned as much as she could about airplanes and chose the University of Oklahoma so that she could take flight lessons while at college. She became a flight instructor and a commercial pilot and was hired by the flight school. As a university employee, she also could take classes for free, and she eventually earned her English degree.

Jessen heard about the research program going on at the Lovelace Clinic in Albuquerque, while serving on the University of Oklahoma faculty. She wrote a letter to Dr. Lovelace outlining her aviation and educational background, asking to be accepted. Jessen and Janey Hart, entering the program together, were the 24th and 25th women to undergo the physical exams and became inspirational partners. Though she was told she passed the tests, she never met Dr. Lovelace, nor was she told that she was in an astronaut training program, and so she always considered the experience research.
Since a new semester was starting at the same time as the continuing testing (fall 1961), Jessen quit her job to participate in Phase II. Only a few days later, the program was discontinued. She took a temporary job as a flight instructor until in 1962, she captured what at the time was (to her) the best possible job in aviation for a woman. She flew as a sales demonstration pilot for the Beechcraft factory in Wichita, Kansas. Initially, she flew as one of the Three Musketeers, an introductory formation flight through the contiguous 48 states over a 90-day period. The job evolved into additional ratings and flying the entire Beechcraft line. She met her husband Bob at Beechcraft, and they eventually migrated west to set up a Beechcraft dealership in Boise, Idaho.

Through the years, Jessen has remained active in aviation, serving on the Boise Airport Commission, as president of the Ninety-Nines, an international women's flying group, and on various community boards. She has participated in the founding of two aviation museums and raised two children.

**Myrtle "K" Thompson Cagle**

Bitten by the flying bug at an early age, "K" Cagle attempted to join an aeronautics class at her high school. Her mother was able to convince the principal to allow her into the class because Cagle, at age 12, had already received flight lessons from her brother. She did so well in the class that when the instructor was drafted, she stepped into the role of teacher for the remainder of the year.

Throughout her career, she completed a number of flight-related courses, earning a commercial pilot's license, with airplane single and multi-engine land rating and an instrument rating. She became certified as flight instructor, flight instrument instructor and ground instructor. Because she holds an airframe and power plant license, she is a certified aviation mechanic as well. Cagle also is a licensed nurse.

In 1961, she received an invitation to train as an astronaut at the Lovelace Clinic in Albuquerque, N.M. She was working as a flight instructor in Macon, Ga., and had accumulated an impressive 4,300 hours of flying time, which was more than some of the Mercury 7 men. Cagle, 36, was a newlywed at the time.

Since she was small in stature—she was 5-feet, 2-inches tall and weighed 100 pounds—Cagle would have been an ideal candidate for space flight. Even when screening the Mercury 7 men, height and weight constraints needed to be considered due to the fuel and weight requirements of lifting a capsule.

When the Mercury 13 project was called off, she returned to Georgia to resume her role as aviation instructor and worked with the Civil Air Patrol, which aided the U.S. Air Force during times of natural disasters or other emergencies.