



'LET'S STOP

KATHLEEN HANSER REVEALS HOW OLD-FASHIONED THINKING DASHED

Below and bottom right
Jerrie Cobb flew a
USAF F-102 Delta
Dagger during her
long flying career.
INTERNATIONAL
WOMEN'S AIR & SPACE
MUSEUM UNLESS STATED

People of a certain age will remember the first seven astronauts introduced by NASA with great fanfare on April 9, 1959. These instant celebrities were all over the news, looking futuristic in their silver flight suits and considered heroes before they even left Earth. A few names can be recalled today, such as Alan Shepard, first American in space, and John Glenn, the most conspicuous of the group who was the first American to orbit the Earth. He later became a US Senator and slipped the bonds of our atmosphere again on Space Shuttle *Discovery* aged 77. They were dubbed the Mercury 7 after the space programme to which they belonged. They were larger-than-life former test pilots with the 'right stuff'. But almost no one remembers the group of women now nicknamed the Mercury 13. These highly accomplished female pilots passed all the same gruelling physical and psychological tests as the Mercury 7 – but were denied a seat into space mainly because of their gender and a consequent loophole.

NOT ON OUR WATCH

The attitude at NASA at the birth of the astronaut programme can be compared to that of a little boy who hangs a sign on his door saying, No Girls Allowed! In fact, when Mercury 7 astronauts Deke Slayton and Shepard listed the qualities an astronaut candidate should have in their 1994 book, *Moon Shot: The Inside Story of America's Apollo Moon Landings*, they revealed a similar sentiment by saying: "and, of course, no women, thank you." As Mercury 13 member Wally Funk stated to the *Los Angeles Times* in 2004: "The old-boy network didn't want us." Considering this, why put women through astronaut tests if NASA wasn't supportive?

A space medicine expert and Harvard-educated flight surgeon, Dr William Randolph 'Randy' Lovelace II, helped develop the medical examinations given to NASA's Project Mercury astronaut candidates. In 1960, Lovelace created a privately funded and operated Woman in Space

Program (called Fellow Lady Astronaut Trainees [FLATs] by the participants) at his clinic in Albuquerque, New Mexico.

Lovelace had forward-thinking views on women participating in the astronaut project. In fact, he believed in some ways that women might be superior candidates. He knew that because they were usually lighter than men, they would use less oxygen, food and water, which meant not as much fuel would be required to boost the rocket into space. In addition, data indicated that females were less susceptible to heart attacks and could better tolerate cramped spaces and isolation.

Lovelace felt that if the women did as well on the tests as he expected, he could present his findings to NASA and persuade it to add them to the astronaut pool. But Lovelace wasn't



THIS NOW!

THE HOPES OF US FEMALE PILOTS WANTING TO JOIN THE SPACE RACE

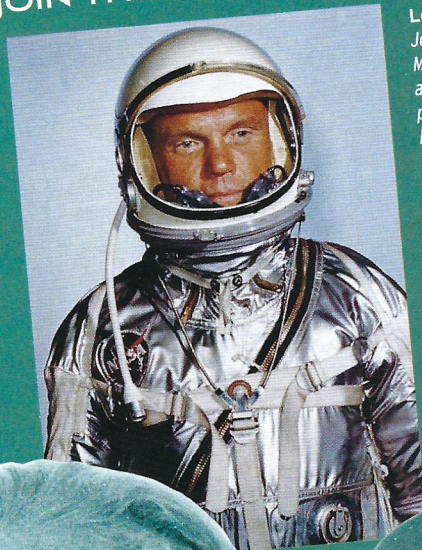
exactly an early champion of the feminist movement. He thought the future consisted of large space stations staffed by dozens of individuals and among them would be 'pink-collar' workers – secretaries and nurses. That's what he thought women would do in space.

In September 1959, Lovelace and his like-minded friend, USAF Brig Gen Donald Flickinger, had a chance encounter with one of the most skilled and respected female pilots of the day, Geraldyn 'Jerrie' Cobb. It was the luckiest thing to ever happen to them, as Cobb turned out to be the ideal candidate for astronaut testing. Jerrie, who sadly died in March this year, said at the time: "I was asked by Dr Lovelace and General Flickinger to be the first woman to go through the tests. Both had just come back from a scientific meeting in Moscow and they heard the Russians were going to train women cosmonauts, so they thought we ought to do something. I couldn't say yes fast enough." Cobb's performance on the tests

was outstanding, in some cases even better than the men, and Lovelace announced the results at a 1960 conference in Stockholm, Sweden. This brought great attention to the programme and to Cobb specifically, who was featured in *LIFE* magazine. Lovelace said at the time: "There is no question that women will eventually participate in space flight; therefore, we must have data on them comparable to what we have obtained on men."

PUSHED TO THE LIMIT

In May 1961, Cobb attended the last phase of the testing at the US Naval School of Aviation Medicine in Pensacola, Florida. First, they assessed her physical fitness with the same strenuous drills given to naval →



Left
John Glenn,
Mercury 7
astronaut, in his
pressure suit in
February 1962.
He was not an
advocate of
females in space.
NASA





aviators and the testing staff were so impressed they gave her a victory party. After her triumph, Lovelace was eager to replicate Cobb's results and prove she wasn't an anomaly.

Lovelace asked famous pilot Jacqueline 'Jackie' Cochran to be an advisor on the Woman in Space Program as well as its financier. Cochran was *the* woman pilot of her day, a multiple world record-holder, former director of the Women's Airforce Service Pilots during World War Two, the first female to break the sound barrier and a good friend of Lovelace. Unfortunately, she did not qualify for the project, mostly because of her age. It was bound to have

ranked her: "I really would like to be the first woman in space. Anyone who has spent as much time in the air as I have in the last 34 years is bound to yearn to go a little bit farther."

Jerrie Cobb continues: "Lovelace asked me to come up with a list of qualified women pilots and start a group going through testing. I went to the Ninety-Nines' [women's aviation organisation] headquarters at Oklahoma City and found those who met the criteria. There were 25 – with commercial and instrument qualifications and more than 1,000 logged flight hours each. Most important, they were all in top physical condition."

The women chosen ranged from



"The attitude at NASA at the birth of the astronaut programme can be compared to that of a little boy who hangs a sign on his door saying No Girls Allowed!"

THE MERCURY WOMEN...



Geraldyn 'Jerrie' Cobb was born in Norman, Oklahoma on March 5, 1931 and her interest in flying began

as a 12-year-old passenger in a WACO flown by her father. She received her pilot's licence when she was 17, her commercial 'ticket' at 18 and then flight instructor's rating. While working as a typist at Miami Airport, Jerrie got a job ferrying aircraft across the globe. The role meant she could fly many types, from high-speed military aircraft to four-engined bombers. In 1959 Cobb was a test pilot for Rockwell International where she set the absolute altitude record of 37,010ft. World records for speed and distance followed.

Cobb also dusted crops and could fly gliders, blimps, and B-17s; By 1960, she had 10,000 hours. When the Woman in Space Program was cancelled, Cobb became a missionary, ferrying medicines and supplies around the Amazon. She slept in a hammock under the wing of her aircraft and did so for more than 40 years. In 1981 she was nominated for the Nobel Peace Prize. Among her awards were the Harmon Trophy for The World's Best Woman Pilot, the Fédération Aéronautique Internationale's Gold Wings Award, and the Amelia Earhart Gold Medal of Achievement. She was inducted into the Oklahoma Hall of Fame, the Women in Aviation International's Pioneer Hall of Fame, and the National Aviation Hall of Fame. Cobb died at her home in Florida on March 18 this year, just after her 88th birthday.



Myrtle 'K' Thompson Cagle was born in North Carolina on June 3, 1925. Intelligent and interested in aviation,

she substituted for the teacher of an aeronautics class in high school. Her brother taught her to fly at 12 and at 14 she became the youngest pilot in the state. Cagle received her Private Pilot's Licence at 19 and her commercial version was gained at 23. During the 1940s Cagle joined the Civil Air Patrol (CAP) and she served with the Women's Airforce Service Pilots in wartime. Cagle also ran an airport in North Carolina while maintaining a charter service and, by 1951, she held multiple ratings, was a certified instructor, aircraft mechanic, qualified nurse and

air racer. In 1961, when Cagle received an invitation from Dr Lovelace, she was a flight instructor in Georgia with 4,300 hours. When female astronaut testing was cancelled, Cagle resumed instructing and her CAP work. In 1988 she attended South Georgia Technical Institute and received her Airframe and Powerplant licence, only the second female graduate in the school's history. Myrtle was enshrined in the Georgia Aviation Hall of Fame on April 26, 2003 and died on November 4, 2013.



Born in San Francisco, California in 1926, Marion Dietrich was the identical twin sister of Janet. She

received a student pilot certificate at 16 and at Burlingame High School,

a 21-year-old flight instructor to a 40-year-old mother of eight and outspoken wife of a US Senator.

"The Mercury 7 had just been selected, the first men who would become astronauts," said '13' participant Gene Nora Stumbough Jessen. "It was all anyone could talk about. To have even a bit of knowledge, to be involved and participate in some way, it was something I had to do. I think we all felt that way."

Soon, testing the new participants got underway in Albuquerque, but the atmosphere was nothing like that of the Mercury 7 men. The women were never all together and therefore had no abiding feelings of camaraderie. In fact, most never even met until years later. They were tested solo or in twos.

Since humans had never flown in space before, the exams were particularly exhaustive to be extra cautious. "They didn't really know what our bodies would do in the outer atmospheres or how we were going to react," Mary Wallace 'Wally' Funk said. Jessen explained of the testing: "It was thorough and long hours. Some of them were not real friendly to the body. We had an enema every morning [and often at night]. There were some really oddball things like that." Years later, Apollo 11 astronaut Michael Collins gave a colourful description of the tests, calling them a series of indignities and uncertainties

in which the subject was "poked, prodded, pummelled, and pierced" and where "no orifice is inviolate, no privacy respected".

Some of the physical tests the women withstood were: swallowing a rubber tube to test their stomach acids; shocks to the arms to evaluate nerve reflexes; a four-hour eye exam; lying on a tilt table for circulation monitoring; countless X-rays; and a stationary bike with an adjustable incline, which they rode to exhaustion to analyse their respiration and swallowing radioactive water. Many tests were invasive and, to put it mildly, uncomfortable, but the women persevered and scored well.

One of the most despised tests was having ice cold water shot into their ears to measure equilibrium and response to vertigo. "That is when your body just does not function. You have no control over your body," Funk said. Two women were given the chance to experience a sensory deprivation tank just as Cobb had done and the results proved especially interesting. During this test, a person floats in a tank of water in a pitch dark, soundproof room. Several hundred people had done this previously. "It was thought that six hours was the absolute limit of tolerance before the onset of hallucinations," wrote Donald E Kilgore and his co-authors in *A Forgotten Moment in Physiology: The Lovelace Woman in Space Program*



Far left

Jerrine Cobb poses next to a full-scale mock-up of a Mercury space capsule on May 27, 1961. NASA

Left

'Jerrine' Sloan Truhill became a 'guinea pig' for a new Lycra flight suit and flew around the country in her pink P-51 modelling the garment. Someone wrote on the back of this photo: "They forgot to take into account you had to climb into the cockpit!!!"

Below left

Bernice 'B' Steadman gained her Private Pilot's Licence at 17 and went on to win many air races before being selected for Dr Randolph Lovelace's astronaut testing.

(1960-1962), which appeared in the September 2007 issue of *Advances in Physiology*. Kilgore was a physician who helped conduct the tests. However, Cobb spent an incredible 9hrs 40mins in the tank before the staff terminated the experiment. Later, when Rhea Allison Woltman and Wally Funk were tested, they each spent ten-plus hours in the tank before the staff ended it, breaking the existing records. Mercury 7 astronauts did not participate in this test – instead, they were assessed in a dimly lit room where there were writing materials. John Glenn lasted three hours.

BATTLE OF THE SEXES

By the end of summer 1961, 13 of the 19 participants who had →

the sisters were the only girls in an aviation class. They took first place in 1947's California Air Race, beating more experienced male pilots.

Marion received degrees in maths and psychology in 1949, and with her sister won second place in 1951's All-Women's Transcontinental Air Race (Powder Puff Derby).

Dietrich worked as a reporter for the *Oakland Tribune*, covering aviation stories, and she accrued airtime by flying charters and ferrying aircraft. Marion Dietrich died on December 1, 1974 without ever meeting the other Mercury 13.



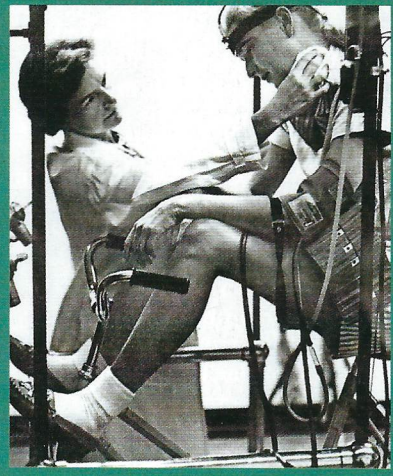
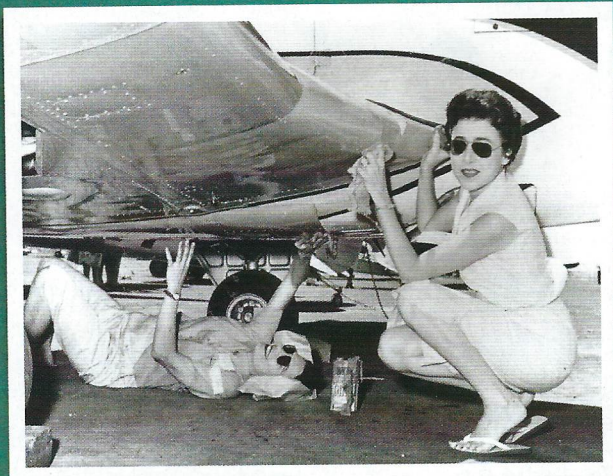
Janet 'Jan' Dietrich was Marion's identical twin and also gained a student pilot

certificate at 16. Janet graduated from Berkeley and became chief pilot of Cessna, then the world's largest light aircraft manufacturer. Jan was also an instructor and chief pilot for a flight school, a corporate aviator and one of the first women in the US to obtain an Airline Transport Pilot Licence. In the late 1950s, Dietrich performed pilot evaluations and was an examiner for the Federal Aviation Administration. After the astronaut testing ended, Dietrich was employed by World Airways, a key military contractor during the Vietnam War. She made flights between the war zone and the airline's base at Oakland. Dietrich amassed more than 12,000 hours' during her 34-year aviation career. She died on June 5, 2008.

Mary Wallace 'Wally' Funk was born on January 31, 1939 in New Mexico. As a

child she excelled in marksmanship and skiing – and continued to succeed in everything she tried. In 1958, she earned an associate of arts degree and was rated first in her class of 24 pilots. She then graduated at 20 with a bachelor's degree in secondary education from Oklahoma State University, where she earned her commercial and instructor ratings. As an officer of the student flying club the 'Flying Aggies,' she flew in International Collegiate Air Meets. After college she became a civilian flight instructor at Fort Sill, Oklahoma, teaching US Army officers. After the astronaut testing, Funk led a long and distinguished life in aviation. She was a Certified Flight Instructor, Charter and Chief Pilot with an aviation company in California. Funk was selected as one of the 'Outstanding Young Women in America' in 1965. She was a goodwill flying

ambassador on a three-year tour that visited 50 countries. In 1971 she was the first woman to complete the FAA General Aviation Operations Inspector Academy course, becoming the first female air safety investigator for the National Transportation Safety Board. She placed eighth in the 1975 Powder Puff Derby and took second in the Palms to Pines All Women Air Race that same month. On October 4, 1975 flying her red and white Citabria, Funk won the Pacific Air Race from San Diego to Santa Rosa, California. She was the lead pilot for the Interorbital Systems X-Prize entry to fly in space. Funk was determined to reach space. She submitted astronaut applications four times but each was rejected. But her enthusiasm for spaceflight is alive: today, Wally is 80 years old, remains active in aviation and keeps in shape for her upcoming spaceflight on Virgin Galactic's *SpaceShipTwo*



September 18, 1961. The women were looking forward to being together as a group for the first time and in the course of seeking permission to get two weeks off work, three were denied – so they quit their jobs in what was perhaps wishful thinking.

On September 12, 1961, amid last-minute preparations, each woman received a telegram from Lovelace that read in part: “Regret to advise arrangements at Pensacola cancelled. Probably will not be possible to carry out this part of the programme.” So, what happened? Roger Launius,

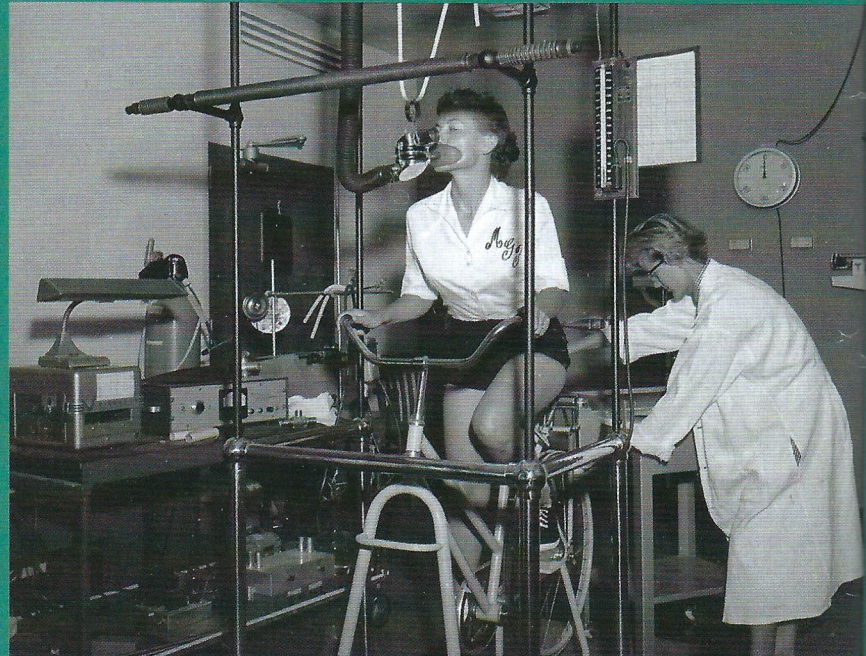
Above
Geraldine ‘Jerri’ Sloan Truhill (right) and her copilot Martha Ann Ready at the Powder Puff Derby air race in 1958.

Above right
Jerrie Cobb completing an endurance test, one of the many strenuous physical challenges she endured for the Woman in Space Program.

Right
Myrtle Cagle rides the stationary bike while her respiration is measured. The women were pushed to exhaustion during this test.

taken the astronaut fitness tests were certified for further training “with no medical reservations”. That’s a higher graduation rate than the first men’s class. Cobb ranked in the top 2% male or female. The Mercury 13 were: Myrtle ‘K’ Cagle, Geraldyn Jerrie Cobb, Jan Dietrich, Marion Dietrich, Mary Wallace ‘Wally’ Funk, Jane ‘Janey’ Briggs Hart, Jean Hixson, Gene Nora Stumbough Jessen, Irene Leverton, Sarah Lee Gorelick Ratley, Bernice ‘B’ Steadman, ‘Jerri’ Sloan Truhill, and Rhea Allison Woltman.

Lovelace’s last step was to put the women through the naval aviator tests at Pensacola, Florida that Cobb had completed earlier and he succeeded in scheduling them for



THE MERCURY WOMEN...



Jane ‘Janey’ Briggs Hart was born in Detroit, Michigan on October 21, 1921 to a well-heeled family. She

was educated at elite catholic schools before attending New York’s Manhattanville College, but left before obtaining a degree. She graduated in anthropology from George Washington University in Washington, DC in 1970.

Hart earned a pilot’s licence at 18 and in the late 1950s became the first woman allowed to fly a helicopter in Michigan. On June 19, 1943 she married Philip Hart and they had nine children, one of whom died as a toddler. Philip was elected to the US Senate in 1958, where he served

until 1976. Hart would often fly her husband to his campaign stops. When Hart joined the Lovelace project, she had 19 years’ flying experience and was a CAP captain. She was also the oldest of the Mercury 13 at 39. Janey was passionate about politics, especially women’s rights, and was a founding member of the feminist National Organization for Women. In 1969 she was arrested with seven others for trying to hold an ecumenical mass for peace inside the Pentagon. Hart died on June 5, 2015.

Jean Hixson was born in Hoopston, Illinois in 1922. Attracted to flying from a young age, she started lessons at 16 and earned her pilot’s licence at 18. She served with the Women Airforce Service Pilots (WASPs) in World War Two and her missions included towing targets for gunnery practice,

ferrying aircraft and instructing. After the war Hixson joined the Air Force Reserve technically as a non-flying second lieutenant assigned to Wright-Patterson Air Force Base, Ohio but continued to fly. Even while in the reserve she attended classes at the University of Akron to get a teaching degree. She majored in maths and science and learned Russian, afterwards becoming a teacher. In 1957, she became the second woman to break the sound barrier. Hixson also participated in transcontinental air races and flew helicopters, hot-air balloons and even the Goodyear blimp. She was 37 when Lovelace called and many of the other women considered her the best of the crew. After the project was terminated, she went back to Akron where she resumed teaching and flight instruction, and was an Air Force Reserve officer. In 1982 she retired as a full colonel and

the next year completed 30 years’ service in the Akron school system. Jean died aged 62 on January 1, 1984.



Gene Nora (pronounced Janora) Stumbough Jessen was born on January 10, 1937 in Illinois.

As a child her older brother told her about the CAP and after receiving a free flight the instructor told her she was a natural. It set the direction for her entire life. Jessen proceeded to learn as much about aircraft as she could. In the mid-1950s Gene Nora went to the University of Oklahoma, which had a flight school. After gaining her pilot’s certificate, she became a commercial flyer and flight instructor at the



Left
A 1942 portrait of the famous aviatrix Jacqueline Cochran on her return from England, where she was a flight captain in the British Air Transport Auxiliary. Cochran was rejected for Lovelace's Woman in Space project and failed to support the women's bid during US government hearings. SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM

just been given a letter to NASA administrator James Webb, drafted by an aide that enquired why women shouldn't be astronauts. He did not sign it, but instead wrote across the bottom in large letters 'Let's Stop This Now!' followed by the word 'File'. It was never sent and remained, undiscovered, in LBJ's files for more than 40 years.

INTENDED HURDLES

A congressional sub-committee met in July 1962 to review astronaut qualifications and whether NASA was discriminating against women due to gender. Cobb and Hart testified on July 17. Cobb told the committee one reason women were kept out of the programme was because of NASA's requirement that candidates have military jet test pilot experience, which was impossible at that time. She felt the women had *equivalent* experience that should qualify them, given that on average they all had more flight time than the Mercury 7. After the hearing, Cobb told a reporter: "I think that the rules have been established to where it makes it impossible for women to meet the qualifications of astronauts." ~~and the requirements are~~ many detractors at that time argued that military jet flight testing can't be compared in difficulty to that of civil aircraft piloting.

Next to testify was Jackie

Cochran, who had a surprise in store. She said: "I do not believe there has been any intentional or actual discrimination against women in the astronaut programme to date." In a spectacular U-turn she proceeded to forcefully argue *against* a special programme for women at that time. Cochran said she wanted to go into space as much as the next woman, but at that moment the priority was sending a man to the moon. She felt focusing on a women's programme would hamstring the entire space race, right when the US was trying to beat the Soviets – and argued for a future project for women astronauts later on, with a larger pool of candidates and a strong leader.

Dr Donald Kilgore, president emeritus Lovelace Center for Health, said of Cochran: "She didn't abandon the ladies, she just knew when she was licked. She understood without question that this was not the time and place and it was going to have to be relegated to the future."

To this day, no one is exactly sure why Cochran went from a Woman in Space supporter to an opponent. Many historians believe Cochran hoped NASA would start a women's astronaut programme when the moon shot was over, with her at the helm. It has also been proposed she resented all the attention paid to Cobb and her assumption

former associate director at the National Air and Space Museum and former NASA chief historian, gives the answer in a critique of Stephanie Nolen's book, *Promised the Moon*: "Some [of the Mercury 13] believed that the further testing represented the first step allowing them to become astronauts, although there was never any intent of this on the part of NASA. When the officials learned about Lovelace's attempts for further tests from the navy, they told its flight surgeons this was not a NASA project. The navy then cancelled the tests."

Unwilling to give up, Cobb, and Janey Hart (Senator Phil Hart's wife) took their case to Washington and began lobbying for their programme to be resumed. In March 1962, they met with Vice President Lyndon Baines Johnson (LBJ), who had

Smithsonian's National Air and Space Museum. She served on the Boise Airport Commission, was elected president of the Ninety-Nines (an international women's flying group) and helped create two aviation museums. Gene Nora and Bob still live in Idaho.



Irene Leverton was born on March 3, 1927 in Chicago, Illinois. As a 17-year-old, she wanted to serve her country during

World War Two by joining the WASPs but was too young. In 1944, Leverton joined the Civil Air Patrol, made her first solo and began learning stalls, spins, forced landings and winter flying on skis. Over a 65-year aviation career she performed various

activities and flew many types. She was a commuter/ferry/corporate pilot, flight/gliding instructor, air ambulance pilot, crop duster, CAP aviator, Arizona Border Patrol pilot and fire spotter for the US Forest Service.

In 1950, as lead pilot in the opening ceremony of Meigs Field, Chicago Leverton dowsed the crowd with 'Tailspin' perfume from an Aeronca aircraft sprayer. It was a new scent from famed pilot Jackie Cochran's line of beauty products.

Her list of racing successes, honours and awards is substantial and includes: Women in Aviation Pioneers Hall of Fame; CAP Meritorious Service Award; Arizona Aviation Hall of Fame; and FAA Master Pilot Award. Her competition accolades included first place in the Women's National Pylon Race in Reno, Nevada and racing from London, England to Victoria, British Columbia, Canada.

Leverton retired in 2004 with more than 25,762 flight hours. She died on July 6, 2007 and a scholarship was set up in her name at Embry-Riddle Aeronautical University, Daytona Beach, Florida.



Sarah Lee Gorelick Ratley was born in Kansas City on August 30, 1933. She became involved in the CAP in

high school to secure flying lessons and learned to fly before mastering a car. She became a flight instructor at 18 and taught flying to work her way through college. Ratley earned a Bachelor of Science degree in maths and chemistry, afterwards working for

university, the first female to do so. When asked by Dr Lovelace to enter the last phase of testing in Pensacola, Florida she had to quit her job to go. When the programme was cancelled, she bided her time as a flight instructor until 1962, when she became a sales demonstration pilot for Beech. The company was marketing a new aircraft, the Musketeer, by having three pilots fly the machines in formation as the 'Three Musketeers'. Eventually she was flying the entire Beech line and her husband Bob bought a Beech dealership in Idaho. Bob sold aircraft while Gene Nora operated their flight school.

They became owner-operators of Boise Air Service until retiring in 2005. Jessen quit flying at 80 due to macular degeneration, which robbed her of depth perception. She has written several aviation-related books and in June this year, spoke at the



Right
 Jerri Truhill (holding child), who was one of the most experienced American female pilots when she was contacted by Dr Randolph Lovelace regarding astronaut testing. One of Truhill's achievements was flying B-25s on secret work for Texas Instruments.

of a leadership role. She was also unhappy with Lovelace for not allowing her in his scheme due to her age and health concerns.

The next day, Mercury 7 astronauts John Glenn and Scott Carpenter, plus George Low, NASA's director of spacecraft and flight missions, testified against the women. They all agreed with Cochran that the timing was bad. They also mentioned that the ladies did not have military test pilot experience, and Glenn said not allowing female astronauts "is a fact of our social order".

The hearings ended a day early and no action was taken based on the proceedings. The Lovelace Woman in Space Program was dead. Lovelace did not pursue the matter further. He had to maintain a good relationship with NASA to continue getting contracts and had no contact with the Mercury 13 after that, except minimally with Cobb. Lovelace was named director of space medicine at NASA in 1964, but he and his wife were killed in a plane crash the following year.

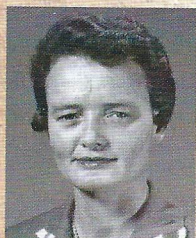
NORMAL SERVICE RESUMED

The women were disappointed but went back to their previous lives, some in long and successful aviation careers, some on other paths but always flying in their spare time.



THE MERCURY WOMEN...

When Dr Lovelace offered her a spot with the Mercury 13, she was 28 and held a commercial pilot's licence. She was on The Ninety-Nines' tour of Europe on hearing about the women's astronaut project and joined immediately on her return. Ratley enjoyed air racing, participating in six All Women Transcontinental Air Races and numerous other events. When astronaut testing was over, she left AT&T and became an accountant but continues to fly her Cessna 172 for fun.



Bernice 'B' Steadman was born on July 9, 1925 in Michigan. She earned her Private Pilot's Licence at 17

and her commercial 'ticket' in 1946. Steadman took a job as an inspector

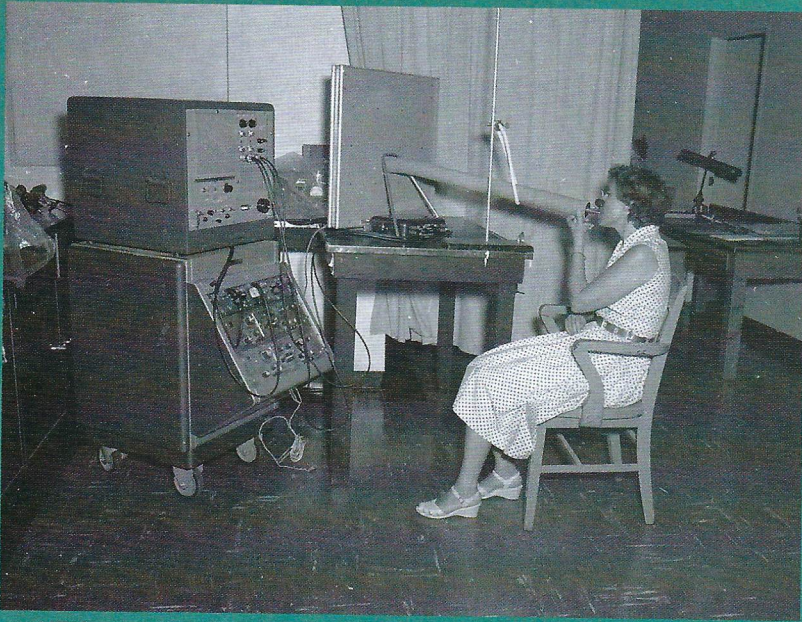
at the AC Spark Plug factory to pay for flight lessons. She eventually earned the FAA's airline transport pilot licence. Bernice led a life sparkling with flying exploits, winning numerous competitions. Steadman started her own flight school, charter service and fixed base operations at the airport in Flint, Michigan. Teaching Air Force Reserve pilots after World War Two was another role. After the astronaut testing, in 1964 she was appointed by President Johnson as one of the charter members of the Women's Advisory Committee on Aviation. Four years later she was elected president of the prestigious women's flying group, the International Ninety Nines. Steadman remained active in aviation. In fact, she served as both president and chair of the board of the International Women's Air and Space Museum. Steadman, with the assistance of

author Jody Clark, has written about her experiences in *Tethered Mercury A Pilot's Memoir: The Right Stuff But The Wrong Sex*. In 2002, Steadman was inducted into the Michigan Aviation Hall of Fame. Bernice died on March 12, 2015.

Geraldine 'Jerri' Sloan Truhill was born in Texas in 1929 and was just four years old when she flew in the cockpit with her father and declared she wanted to be a pilot. Jerri was told that was men's work, but it didn't deter her. When she was 15, she sneaked away for flying lessons without telling her parents. On discovering this, they sent her to a catholic school in San Antonio, Texas. By the time Lovelace asked her to participate in astronaut testing, Truhill was one of the most experienced pilots in the US. With her partner, Joe Truhill, whom she later married, Jerri flew B-25s under contract to Texas

Instruments; top secret work at night over the Gulf of Mexico, test flying the first infrared system and terrain-following radar. It was dangerous work, but she also had fun air racing. After astronaut testing, she went back to Texas Instruments. The Truhills also bought surplus P-51s and Jerri became a 'guinea pig' for a new Lycra flying suit, which she modelled around the US in her pink P-51. In 2008, Truhill was the subject of a documentary called *She Should Have Gone to the Moon*. Jerri died on November 18, 2013.

Rhea Allison Hurrle Woltman was born in 1928 on a central Minnesota farm but did not stay a rural girl. She worked as a schoolteacher but always wanted to fly and eventually took lessons. She progressed from private to commercial pilot and became an instrument flying instructor. She also received her floatplane rating and



"The women were disappointed but went back to their previous lives, some in long and successful aviation careers"

Two of their number, Cobb and Funk, couldn't give up their dream of going into space. Cobb repeatedly wrote to James Webb, sometimes begging him for a space flight. In 1998, when she was 67, Cobb told the Associated Press: "I would give my life to fly in space, I really would. I would then, and I will now." She became a missionary pilot, flying supplies to people in the Amazon jungle. Funk is still trying to reach space, having put

down a sizable deposit to reserve a seat on Richard Branson's Virgin Galactic *SpaceShip Two*. Sex discrimination in the US became illegal with the 1964 Civil Rights Act. However, it wasn't until 1978 that NASA selected its first female astronaut candidates. It took until 1983 for NASA to send a woman, Sally Ride, into space, 20 years after the Soviets did so. And being a pilot is no longer on the list of astronaut requirements.



In the past 10-15 years, the Mercury 13 have earned more recognition due to several books and documentaries. Many people, including today's female space crews, believe they helped pave the way for today's astronauts of 'the fairer sex'. In 2007, the University of Wisconsin Oshkosh awarded the women honorary Doctor of Science degrees. They were also honoured by the Adler Planetarium and Women in Aviation International organisation. Also, in 2007, the US Congress passed a resolution "honouring the trailblazing accomplishments of the 'Mercury 13' women, whose efforts in the early 1960s demonstrated the capabilities of American women to undertake the human exploration of space". ●

Above
Bernice 'B' Steadman (far left) and possibly Dr Lovelace on the right.

Left
Jean Hixson undergoes a pulmonary assessment, one of the many she was put through as a participant in the Lovelace project.

Below
Seven members of the Mercury 13 stand near Launch Pad 39B and Space Shuttle 'Discovery' in this 1995 photo. Visiting Kennedy Space Center as invited guests of the first female Space Shuttle pilot, Eileen Collins, are (from left): Gene Nora Jessen, Wally Funk, Jerrie Cobb, Jerri Truhill, Sarah Ratley, Myrtle Cagle, and Bernice Steadman. NASA

gliding 'wings'. Woltman was also an air racer. She completed one of the major flying feats of the era for a woman: a solo flight from Houston, Texas to Anchorage, Alaska, and she possessed a commercial pilot's licence and was a certified flight/ground instructor. A secretary and executive pilot for an aircraft sales and engineering firm, she never mentioned her flying skills to her family or that she'd been selected for astronaut testing. They found out when they read about the Mercury 13 in *LIFE* magazine. Ever adventurous, she tried hang gliding and went motorcycling after heart surgery in her 80s. Woltman moved to Colorado Springs in the early 1970s, where she performed glider training and towing for Air Force Academy cadets. Rhea was inducted in the Colorado Women's Hall of Fame in 2008 and now lives in Minnesota.

