

= Jeannette Piccard =

Jeannette Ridlon Piccard (January 5 , 1895 ? May 17 , 1981) was an American high @-@ altitude balloonist , and in later life an Episcopal priest . She held the women 's altitude record for nearly three decades , and according to several contemporaneous accounts was regarded as the first woman in space .

Piccard was the first licensed female balloon pilot in the U.S. , and the first woman to fly to the stratosphere . Accompanied by her husband , Jean ? a member of the Piccard family of balloonists and the twin brother of Auguste Piccard ? she reached a height of 10 @.@ 9 miles (17 @.@ 5 km) during a record @-@ breaking flight over Lake Erie on October 23 , 1934 , retaining control of the balloon for the entire flight . After her husband 's death in 1963 , she worked as a consultant to the director of NASA 's Johnson Space Center for several years , talking to the public about NASA 's work , and was posthumously inducted into the International Space Hall of Fame in 1998 .

From the late 1960s onwards , Piccard returned to her childhood interest in religion . She was ordained a deacon of the Episcopal Church in 1971 , and on July 29 , 1974 , became one of the Philadelphia Eleven , the first women to be ordained priests ? though the ordinations were regarded as irregular , performed by bishops who had retired or resigned . Piccard was the first of the women to be ordained that day , because at 79 she was the oldest , and because she was fulfilling an ambition she had had since she was 11 years old . When asked by Bishop John Allin , the head of the church , not to proceed with the ceremony , she is said to have told him , " Sonny , I 'm old enough to have changed your nappies . " In September 1976 , the church voted to allow women into the priesthood , and Piccard served as a priest in Saint Paul , Minnesota , until she died at the age of 86 . One of her granddaughters , the Rev. Kathryn Piccard , also an Episcopal priest , said of her : " She wanted to expand the idea of what a respectable lady could do . She had the image of the street @-@ wise old lady . "

= = Family and education = =

Born in Chicago , Illinois , Piccard was one of nine children born to Emily Ridlon and John Ridlon , who was president of the American Orthopaedic Association . She had a lifelong interest in science and religion . When she was 11 , her mother asked her what she wanted to be when she grew up . Piccard 's reply ? " a priest " ? sent her mother running out of the room in tears .

Piccard studied philosophy and psychology at Bryn Mawr College , where in 1916 she wrote an essay titled " Should Women Be Admitted to the Priesthood of the Anglican Church ? " She received her bachelor 's degree in 1918 , and went on to study organic chemistry at the University of Chicago , receiving her master 's degree in 1919 . That same year she met and married Jean Felix Piccard , who was teaching at the university .

Piccard was the mother of a house full of boys . Robert R. Gilruth , one of her students and collaborators , said later in his oral history that he remembered a breakfast he had with the Piccards in a St. Cloud , Minnesota hotel before a balloon launching , " I don 't know how many there were . It seems like there was a dozen I remember the youngest one took the corn flake box and dumped it on his father 's head . Of course , Piccard just brushed it off his head and said , ' No , no . ' " " He was very gentle . He loved his boys , and he thought boys would be boys , I guess . " The Piccards had three sons of their own , John , Paul , and Donald (who would become a famous balloonist and ballooning innovator in his own right) , as well as foster children . The Piccard family archive in the Library of Congress mentions correspondence from foster children whom the Piccards took in , although nothing else seems to be known about them .

The Piccards taught at the University of Lausanne from 1919 ? 26 . In 1926 they returned to the United States , where Jean Piccard taught organic chemistry at the Massachusetts Institute of Technology . The couple lived in Massachusetts , New Jersey , Delaware , and Pennsylvania before settling in Minneapolis in 1936 when Jean Piccard joined the faculty of the University of Minnesota . She received a doctorate in education from the University of Minnesota in 1942 , and a certificate of study from the General Theological Seminary in 1973 .

Gilruth made a point of describing Piccard in his oral history . He said , " She was very bright , had her own doctor 's degree , and was at least half of the brains of that family , technical as well as otherwise . ? She was always in the room when he was lecturing or otherwise , almost always . She was something . She was good . " David DeVorkin , curator of the Smithsonian National Air and Space Museum , wrote a history of manned scientific ballooning . In DeVorkin 's view , the Piccards " entrepreneurship and subsequent success " in ballooning was due to " their enormous persistence ? and considerable confidence , pluck , and luck " .

= = Stratosphere flight = =

= = = Auguste and Jean Piccard = = =

When he visited the United States for a lecture tour , Auguste Piccard was already a Belgian national celebrity for his 1931 and 1932 stratosphere flights that set off what a United Press correspondent called a " race for supremacy in the stratosphere " , and he became a celebrity in America . He entertained the idea of flying in the U.S. until at least mid @-@ February 1933 , but he received generous funding for a flight in Belgium , and instead turned the project and his power of attorney over to his twin brother Jean . DeVorkin wrote that Jean Piccard lived his whole life in the shadow of his brother , whose success in ballooning he wanted to emulate . Jean had lost his job developing explosives at the Hercules Powder Company , and had no prospects for employment ? let alone during the Great Depression ? so he was happy to take on the project .

= = = Balloon and Thomas Settle flights = = =

The Century of Progress hydrogen gas balloon was the largest in the world , conceived for the 1933 Century of Progress International Exposition , a world 's fair held in Chicago to celebrate the city 's centennial . The fair 's organizers planned a balloon flight to the stratosphere and hoped to lure Auguste as pilot ? the Piccard name certainly had high publicity value . Dow Chemical constructed the magnesium @-@ alloy gondola . Goodyear @-@ Zeppelin built the balloon of rubberized cloth . Union Carbide provided the hydrogen for lifting and liquid oxygen for pressurizing the gondola 's interior . The National Broadcasting Company and the Chicago Daily News were sponsors , and newspapers publicized the event . At 105 feet (32 m) wide and 600 @,@ 000 cubic feet (17 @,@ 000 m3) , the balloon 's envelope took 700 hydrogen cylinders to fill .

Jean Piccard , however , became an annoyance . When he tried independently to find funding from DuPont , he told them the conditions for the balloon 's takeoff in Chicago could be dangerous , and was turned down . When he tried to go over the flight organizers heads by contacting the president of the fair (who was a friend of Jeannette Piccard 's father) over what he considered a slight , the president refused to see him . He battled with an associate of the fair 's director of concessions who wanted Jean out of the picture and then wanted Auguste to return to the U.S. to fly . Eventually , Jean was demoted from inflight science observer to not flying at all .

During the negotiations , the organizers agreed to give Jean and Jeannette the balloon and gondola after its initial flight , in exchange for Jean remaining on the ground . Goodyear and Arthur Compton , who served as the flight 's director of science , decided to use a U.S. Navy pilot , although Jean , who had served as a balloonist during World War I in the Swiss Army but did not have a U.S. license , thought he would be co @-@ pilot until two months before flight day . The Piccard name (which bore considerable publicity value) was kept prominently when the flight was named " The Piccard @-@ Compton Stratosphere Ascension from Soldier Field " .

Gradually , the idea of a Navy pilot won , and Jean signed a memorandum of understanding with the organizers that said he would remain on the ground , " permitting Commander Settle to go alone . The reduction in weight thereby produced will most assuredly enable Commander Settle to reach a higher altitude " . On the night of August 4 , 1933 , in front of forty thousand spectators in Soldier Field , as the balloon was being inflated , the fair 's general manager said :

The sportsmanship and unselfishness displayed by Dr. Jean Piccard in surrendering his place in the balloon so that a greater altitude may be achieved through the lessened weight of himself and his equipment ? is a note of sacrifice that will not be forgotten .

Lt. Cmdr. Thomas (Tex) G. W. Settle of the U.S. Navy made the first flight solo in the balloon at 3 : 00 a.m. on August 5 , but his ascent was aborted shortly after takeoff because a gas release valve malfunctioned . The balloon then belonged to the Piccards but the armed forces again decided to use it (Jean , who at the time disliked the military , wrote to Auguste in December 1933 , " The Navy and the Army are very stupid ? ") . Jean wrote to the gondola manufacturer in September 1933 :

Mrs. Piccard and I cannot see that our lives are so very valuable Without a job , without a laboratory on the ground we are not in a position to render any service to humanity

On November 20 , 1933 , with only a few hundred onlookers this time , Settle and Maj. Chester L. Fordney of the U.S. Marine Corps flew the Century of Progress balloon from Akron , Ohio , reaching 61 @, @ 237 feet (18 @, @ 665 m) , a new Fédération Aéronautique Internationale (FAI) altitude record . It was the first successful flight from U.S. soil to the stratosphere , and Settle and Fordney became the first Americans to reach the stratosphere . They landed in a marsh near Bridgeton , New Jersey , only a few miles from the Piccards ' home .

= = = Planning and pilot 's license = = =

After Settle 's record flight , the balloon was again returned to the Piccards , who decided to fly it to the stratosphere on their own . Jean would concentrate on the science , while Jeannette would pilot the balloon . DeVorkin wrote that , " Energetic and forceful , she seemed to have a better chance of obtaining a pilot 's license than Jean , who was preoccupied with restoring the gondola and balloon and convincing scientists to provide instruments to fly " . She studied at Ford Airport in Dearborn , Michigan under Edward J. Hill , a balloonist and Gordon Bennett Cup winner , who agreed to serve as flight director for the Piccards ' planned stratospheric flight . Henry Ford offered the use of his hangar and brought Orville Wright (with his brother Wilbur , inventor of the airplane and first human to fly a heavier @-@ than @-@ air powered aircraft) to observe a flight of Jeannette 's in 1933 . Her son Don was a crew member that day and shook hands with Wright , " I was a little kid and he [paid] attention to me . " On June 16 , 1934 , Jeannette flew her first solo flight . Later that year , the National Aeronautic Association made her the first woman licensed balloon pilot in the U.S. Auguste wrote to Jean in June 1934 , " Hopefully you will make your flight ahead of other competitors . It would be nice , if the name of Piccard through Jeannette , would once more be placed on the record list of the F.A.I. "

When she was interviewed near the end of her life , and asked why she hadn 't hired a pilot and why she had decided to become a pilot herself , Jeannette replied , " How much loyalty can you count on from someone you hire ? " When she was asked if she had parachute training , Jeannette said , " No ? if , on the first time you jump , you don 't succeed , there 's no use trying again . "

= = = Search for funding = = =

High altitude ballooning was a dangerous undertaking , partly because human lungs cannot function unaided over 40 @, @ 000 ? 50 @, @ 000 feet (12 @, @ 000 ? 15 @, @ 000 m) , and partly because the lifting gas used , hydrogen , is flammable . Jeannette said later that , " The National Geographic Society would have nothing to do with sending a woman ? a mother ? in a balloon into danger " . Longtime Piccard family backer Goodyear were reluctant to support their flight . Dow Chemical asked that their trade names and logo be removed from publicity and from the Century of Progress balloon .

Gilruth said , " I remember that Piccard was very , very hurt by the National Geographic that would not give them a dime Both he and Jeanette said that they were discriminated against by the National Geographic . That 's not a good word . They were not aided in any way by the National Geographic , and they felt it was not really warranted . They felt they should have gotten some help from them [He] didn 't say why , but they certainly didn 't feel they 'd been handled fairly . " The

Piccards struggled to gain financial support until the Grigsby @-@ Grunow Radio Company advanced them several thousand dollars . The Detroit Aero Club and People 's Outfitting Company also backed them . To supplement their sponsorship , Jeannette designed and sold commemorative stamps and souvenir programs and folders . She also raised a good deal of money by selling their story in press releases to the North American Newspaper Alliance .

= = = Flight = = =

Forty @-@ five thousand spectators came to see the Piccards off on October 23 , 1934 , at 6 : 51 am , about two hours behind schedule . Jeannette piloted the reconditioned Century of Progress , and the couple took along their pet turtle , Fleur de Lys . After a brief pre @-@ launch ceremony , during which the Piccards received a bouquet from their sons and a small band played The Star @-@ Spangled Banner , they lifted off from Ford Airport , assisted by airmen on the ground who pushed the gondola . Jean changed the flight path and shortened the flight time because of cloudy skies , which reduced the amount of scientific work they were able to do . Jeannette made " unplanned and impulsive manoeuvres " and the Piccards failed to make complete records of their actions during the flight . The newspaper alliance had offered to pay them US \$ 1 @,@ 000 if they broke the altitude record , so they jettisoned all of their sandbags , attempting to go higher . They reached 57 @,@ 579 feet (17 @,@ 550 m) or about 10 @.@ 9 miles (17 @.@ 5 km) up , travelled for eight hours on a journey over Lake Erie , and landed about 300 miles (480 km) away from Dearborn , near Cadiz , Ohio . She had to choose a landing on elm trees , realizing that meant the Century of Progress would never fly again . The balloon separated from the gondola and was ripped . Jean sustained small fractures to his ribs , left foot , and ankle . According to Jeannette 's description in Time magazine : " What a mess ! I wanted to land on the White House lawn . "

= = = Legacy = = =

Her flight set the women 's altitude record , and held it for 29 years , until Valentina Tereshkova in 1963 became the first woman in space , orbiting the Earth 48 times solo in the Soviet Union 's Vostok 6 . According to the editors of Flying magazine , in their book Sport Flying , published by Ziff @-@ Davis in 1976 , Jeannette was " the first woman in space , a claim allowed even by Valentina Tereshkova . " She was also the first woman to pilot a flight to the stratosphere , and according to her obituary in The New York Times , the first person to do so through a layer of clouds . Jean created the liquid oxygen converter and frost @-@ resistant window which he thought was later used in Boeing 's B @-@ 17 Flying Fortress , and used blasting caps and TNT for releasing the balloon at launch and for remote release of external ballast from inside the sealed cabin . This was the first use of pyrotechnics for remote @-@ controlled actuating devices in aircraft , a revolutionary and unpopular idea at the time . Later , Gilruth ? who became the director of the NASA Manned Spacecraft Center ? approved and used them in spacecraft . Also aboard the balloon , where every pound counts , were two instruments for studying cosmic radiation ? one designed by Jean 's friend and mentor William Francis Gray Swann , and Robert Millikan 's 540 lb (240 kg) ionization chamber . Neither Swann nor Millikan were satisfied with the flight 's scientific results , a lesson for manned flights that repeated for decades .

= = = Later life , death of Jean Piccard = = =

Jean and Jeannette felt they had succeeded by reaching the stratosphere , and they became popular lecturers . They prepared brochures and souvenirs to attract attention to the flight , one titled " Who Said We Couldn 't Do It . " But they had developed perhaps unreasonable expectations that lucrative university positions would come to them . Both wrote to dozens of colleges and universities , aiming high ? even at college presidencies , trying to secure positions , but they received only rejections . In December 1934 , Jeannette wrote to Swann to ask if Jean might become a member of the chemistry staff of Bartol Research at the Franklin Institute , and also offered her services , but

was turned down . Luckily , they met a new advocate while on lecture tour to Minneapolis . Thanks to John Akerman of the department of aeronautical engineering at the University of Minnesota , Jean became an untenured professor in Minnesota by 1936 , teaching and doing aeronautical studies until 1946 when he received tenure . During 1943 , Jeannette was briefly an executive secretary at the housing section of the Minnesota Office of Civil Defense .

In 1946 until mid @-@ 1947 , the Piccards were consultants to General Mills (the cereal company and dominant industry in Minneapolis) working under Otto Winzen , who Jean had met through the university . Winzen and Jean proposed a stratosphere flight with 100 cluster balloons and secured a government contract with the Navy . Featured in Navy press releases , Jean was named a project scientist responsible for gondola design and for testing the balloon film materials . But he balked , both at making weekly status reports that made him feel like a lower @-@ level employee , and at the prospect of General Mills owning the patents to his ideas . Working as a consultant , Jeannette threatened to break off ties with the Navy and General Mills unless she was allowed to fly with Jean . Unfortunately this began a rift between General Mills and the Piccards . They were both were fired in 1947 , for they were too critical of Winzen and General Mills staff .

Jean retired from the University of Minnesota when he was 68 , never giving up his dream of returning to the stratosphere . DeVorkin quoted a newspaper in 1952 , " to Adventurer Piccard , no gondola probing the unexplored purple twilight of the stratosphere would be complete without him and his wife in it " . Jean died in 1963 .

Gilruth asked Jeannette to work as a consultant at NASA . She accepted and lived in a house in Houston she shared with another woman . Jeannette spoke to the scientific community and to the public at NASA about the space program from 1964 to 1970 , when Project Apollo was created and Apollo 11 made the first manned Moon landing in 1969 . Gilruth then noticed a shift in her interests , away from space and towards religion .

= = Episcopal priest = =

= = = Ordination = = =

In 1971 , one year after the Episcopal Church admitted female deacons , Piccard was ordained a deacon and , on July 29 , 1974 at age 79 , under controversial circumstances , she was ordained a priest . In Philadelphia , at the Church of the Advocate , three retired bishops ? Daniel Corrigan , former church head of domestic missions , Robert L. De Witt of the diocese of Pennsylvania , and Edward Randolph Welles II of the diocese of West Missouri ? ordained eleven women priests , cheered by a large congregation . A fourth bishop , José Antonio Ramos of Costa Rica , was there but was out of his jurisdiction . All eleven women risked suspension as deacons , and the four bishops " could be suspended or deposed by a church trial court " for ignoring a church canon prohibiting retired bishops from performing " episcopal acts " unless asked by a local bishop . Five Episcopal priests objected at the point in the service when Corrigan asked if there was " any impediment " to the ordinations , one calling the ordinations a " perversion " and another calling them " unlawful and schismatical " .

Piccard was the first of the eleven women ordained because she was the oldest and she was fulfilling a lifelong dream . Carter Heyward ? another of the group who were known as " irregulars " and sometimes called the " Philadelphia Eleven " ? became the 1974 Ms. magazine Woman of the Year . Suzanne Hiatt later said " In retrospect , to have been ordained ' irregularly ' is the only way for women to have done it . " Alison Cheek , Heyward , and Piccard joined in the consecration , and Piccard gave the absolution , in a celebration of the Eucharist at Riverside Church in Manhattan in November 1974 . Philip McNairy of the Diocese of Minnesota , who wanted women in the priesthood , was concerned that the eleven were hurting the cause of the other women deacons , who numbered over one hundred at the time .

= = = Fallout , women recognized = = =

A proposal to recognize women priests had been narrowly defeated at the triennial general convention of 1973 held in Louisville , Kentucky . John M. Allin of Mississippi , the new (as of June) presiding bishop of the Episcopal Church , which had 3 @. @ 1 million members at the time , called an emergency meeting of the House of Bishops in Chicago in August 1974 . Jeannette told Allin , " Sonny , I 'm old enough to have changed your nappies . "

Harold B. Robinson , a bishop in the diocese of Western New York , and two colleagues set in motion charges accusing the three bishops of breaking their vows and violating church laws . They withdrew charges when the House of Bishops , in a carefully worded resolution that passed 129 to 9 with 8 abstentions , challenged the ordinations and decried the bishops ' actions , calling them understandable but " wrong " . But the church was moving in this direction already , and the general convention of 1976 held in Minneapolis voted to open the priesthood to women .

= = = Life as a priest = = =

Jeannette served as a deacon or irregular at St. Philip 's Episcopal Church in Saint Paul , Minnesota from 1975 ? 1977 . In 1977 the Episcopal Church recognized her ordination . Kathryn Piccard , her granddaughter , who also became an Episcopal priest , was later quoted in The New York Times as saying , " She wanted to expand the idea of what a respectable lady could do . She had the image of the street @-@ wise old lady . " Jeannette became a volunteer chaplain at St. Luke 's Hospital , now United Hospital , and assistant pastor to Denzil Carty at Episcopal Church on Maccubin , both in Saint Paul . From 1968 until 1981 she was an honorary member of the Seabury @-@ Western Theological Seminary board of trustees .

Jeannette died of cancer on May 17 , 1981 at the Masonic Memorial Hospital in Minneapolis , Minnesota , aged 86 .

= = Honors = =

Jeannette received the Harmon Trophy in 1934 . The National Aeronautic Association gave her a Certificate of Reward & Performance in 1935 . In 1965 she received the first William Randolph Lovelace II Award from the American Astronautical Society (AAS) . The University of Minnesota Alumni Association gave her an Outstanding Achievement Award in 1968 and engraved her name on their wall of honor . Graduate Women in Science , also known as Sigma Delta Epsilon , made her an honorary member " For Excellence In Scientific Research " in 1971 . Hobart and William Smith Colleges gave her an honorary doctorate . She received the Robert R. Gilruth Award in 1970 from the North Galveston County Chamber of Commerce .

She was posthumously inducted into the International Space Hall of Fame in 1998 , and she and her husband were nominated to the FAI Ballooning Commission Hall of Fame . The Balloon Federation of America renamed its award the Piccard Memorial Trophy . Pat Donohue wrote Solo Flight , a one @-@ woman play about Jeannette 's life . The Bryn Mawr College Library has the Jeanette Ridlon Piccard Book Fund , which provides funds for the purchase of books on the history of religion .