= Glynn Lunney =

Glynn S. Lunney (born November 27 , 1936) is a retired NASA engineer . An employee of NASA since its creation in 1958 , Lunney was a flight director during the Gemini and Apollo programs , and was on duty during historic events such as the Apollo 11 lunar ascent and the pivotal hours of the Apollo 13 crisis . At the end of the Apollo program , he became manager of the Apollo @-@ Soyuz Test Project , the first collaboration in spaceflight between the United States and the Soviet Union . Later , he served as manager of the Space Shuttle program before leaving NASA in 1985 and later becoming a vice president of the United Space Alliance .

Lunney was a key figure in the US manned space program from Project Mercury through the coming of the Space Shuttle . He has received numerous awards for his work , including the National Space Trophy , which he was given by the Rotary Club in 2005 . Chris Kraft , NASA 's first flight director , described Lunney as " a true hero of the space age " , saying that he was " one of the outstanding contributors to the exploration of space of the last four decades " .

= = Early life and NACA career = =

Glynn Lunney grew up in the coal city of Old Forge , Pennsylvania . He was the eldest son of William Lunney , a welder and former miner who encouraged his son to get an education and to find a job beyond the mines . Lunney graduated from the Scranton Preparatory School in 1953 . A childhood interest in model airplanes prompted Lunney to study engineering in college . After attending the University of Scranton from 1953 through 1955 , he transferred to the University of Detroit , where he enrolled in the cooperative training program run by the Lewis Research Center in Cleveland , Ohio . The center was a part of the National Advisory Committee for Aeronautics (NACA) , a United States federal agency founded to promote aeronautical research . Cooperative students at NACA took part in a program that combined work and study , providing a way for them to fund their college degrees while gaining experience in aeronautics . Lunney graduated from college in June 1958 , with a Bachelor of Science degree in Aerospace engineering .

After graduation , Lunney remained with NACA . His first job was as a researcher in aerospace dynamics at Lewis Research Center , where he worked with a team studying the thermodynamics of vehicles during high @-@ speed reentry . Using a B @-@ 57 bomber , the team sent small rockets high into the atmosphere in order to measure their heating profile .

= = NASA career = =

= = = Mercury = = =

Only a month after Lunney graduated , President Eisenhower signed into existence the National Aeronautics and Space Administration (NASA) , into which NACA was subsumed . His timing was perfect , for as Lunney later said , " there was no such thing as space flight until the month I got out of college " . Lunney was soon transferred to Langley Research Center in Hampton , Virginia , where in September 1959 he became a member of the Space Task Group , which was the body given responsibility for the creation of NASA 's manned space program . Aged twenty @-@ one , he was the youngest of the forty @-@ five members of the group . His first assignment was with the Control Center Simulation Group , which planned the simulations used to train both flight controllers and astronauts for the as @-@ yet unknown experience of manned spaceflight .

A member of the Flight Operations Division , Lunney was one of the engineers responsible for planning and creating procedures for Project Mercury , America 's first manned space program . He took part in the writing of the first set of mission rules , the guidelines by which both flight controllers and astronauts operated . During Mercury , Lunney became , after Tecwyn Roberts , the second man to serve as the Flight Dynamics Officer (FIDO) in the Mercury Control Center , controlling the trajectory of the spacecraft and planning adjustments to it . His colleague Gene Kranz described him

as " the pioneer leader of trajectory operations , who turned his craft from an art practiced by a few into a pure science " . It was during these years that Lunney became the protege of flight director Chris Kraft , a relationship that would last some twenty years .

Lunney worked both in the Control Center and at remote sites ; during the flight of John Glenn , America 's first orbital spaceflight , he was serving as the FIDO in Bermuda . In September 1961 , NASA 's Space Task Group was reorganized into the Manned Spacecraft Center and moved to Houston , Texas , and Lunney moved with it . In Houston , he became head of the Mission Logic and Computer Hardware section , where he defined and oversaw the computing and display requirements of the flight dynamics division within the new Mission Control Center .

= = = Gemini = = =

Gemini was a step forward for NASA 's manned space program : the Gemini capsule was larger and more advanced than Mercury , capable of supporting two men for up to a two @-@ week mission . Because of the longer mission durations , Mission Control began to be manned in shifts . In 1964 , Glynn Lunney and Gene Kranz were selected by Chris Kraft to join Kraft and his deputy John Hodge as flight directors . Aged only twenty @-@ eight , Lunney was the youngest of the four .

Lunney worked backup on Gemini 3 , taking charge of the newly established Mission Control Center in Houston , at a time when flights were still controlled from Cape Canaveral in Florida . On Gemini 4 , he again was working backup , this time in Florida , supporting the first mission that was controlled entirely from Houston . After spending some time on unmanned testing for the Apollo program , he returned to work as a flight director on Gemini 9 , 10 , 11 and 12 .

= = = Apollo = = =

As with Project Mercury , Lunney was involved in Project Apollo right from the beginning . He took charge of the " boilerplate " tests of the Apollo abort escape system at White Sands , which took place during the Gemini program , and was flight director during the first unmanned Saturn V test flight , SA @-@ 501 . However , he was not scheduled to serve as a flight director on the first manned Apollo mission , later known as Apollo 1 . During the countdown demonstration test that resulted in the Apollo 1 fire , Lunney was at home having dinner with astronaut Bill Anders and his wife , and was called into Mission Control when the fire occurred . It was , as he recalled , " a tremendous punch in the stomach to all of us " . The aftermath of the fire , in which three astronauts were killed , left Lunney and his colleagues at NASA feeling that they had perhaps failed to recognize the risks they were running in their efforts to meet Kennedy 's timetable of landing a man on the Moon by the end of the decade . " Maybe , " said Lunney over thirty years later , " we had gotten a little overconfident " .

Lunney attracted significant media attention in 1968 , when he worked as lead flight director on Apollo 7 , the first of the manned Apollo flights . Coming as it did after the Apollo 1 fire , the mission was an important test for the Apollo program , and was stressful for astronauts and controllers alike . Lunney had primary responsibility for dealing with the mission commander , Wally Schirra , who repeatedly questioned orders from the ground . Although pressed by reporters in news conferences , Lunney stayed diplomatic and said nothing critical of Schirra . Privately , however , he was extremely exasperated , and later assured his team of young controllers that " manned spaceflight is usually better than this " . He was also diplomatic about Donn Eisele 's sarcastic comment to the CAPCOM that he would " like to meet the man , or whomever it was , that dreamed up that little gem " . The " gem " turned out to be Lunney 's .

As a flight director Lunney was known for his good memory and his unusually quick thought processes ? traits that could sometimes prove problematic for his team of flight controllers . " Glynn would drive you crazy " , said Jay Greene , a fellow controller , " because his mind would race so fast that he could churn out action items quicker than you could absorb , much less answer . "

During the Apollo 13 crisis , Lunney played a key role . Coming on shift an hour after the oxygen

tank explosion that put the crew 's lives in jeopardy , Lunney and his team faced the unprecedented challenge of having to power up the lunar module on an extremely tight timeline , while transferring guidance and navigation data to it from the dying command module . His excellent memory and quick thinking were critical in the success of his team during the ensuing hours . Ken Mattingly , the astronaut who had been bumped from the Apollo 13 crew due to his exposure to German measles , later called Lunney 's performance " the most magnificent display of personal leadership that I ? ve ever seen " . On the day following the Apollo 13 splashdown , Lunney joined his fellow flight directors in accepting the Presidential Medal of Freedom as a member of the Apollo 13 mission operations team . The award was made by President Nixon during a ceremony at the Manned Spacecraft Center .

= = = Apollo @-@ Soyuz Test Program = = =

In 1970 , while still a flight director , Lunney was selected as one of the members of a NASA delegation to the Soviet Union , which was to discuss the possibility of cooperation between the two countries in the field of manned spaceflight . " For me it was out of the clear blue sky " , said Lunney , who was told of the plans while at a conference in early October . " I did not know anything about [the proposed talks] until that time . " The trip took place in late October . While in Moscow , Lunney gave a presentation to Soviet engineers on the techniques that NASA used for orbital rendezvous , and on the compromises that would have to be made in order to achieve a rendezvous between American and Soviet spacecraft . The technical agreement that he helped to draft laid the groundwork for the mission which was to become the Apollo @-@ Soyuz Test Project (ASTP) . It was intended to be a joint mission , whose highlight was to be a docking between an American Apollo spacecraft and a Soviet Soyuz .

Lunney was named technical director of the ASTP in the following year . As technical director , he made several more trips to the Soviet Union , helping to negotiate the seventeen @-@ point agreement that would govern the conduct of the mission . He also took part in working groups in Houston that dealt with the technical details of the project . A New York Times profile reported that he was taking Russian lessons in order to be better prepared for the role .

On June 13 , 1972 , Lunney was given overall responsibility for the test project ; henceforth he would be in charge not only of building a partnership with the Soviets , but also of mission planning and of negotiating with North American Rockwell , the spacecraft contractor . According to the official history of the ASTP , Lunney 's performance during Apollo 13 and during the Soviet negotiations had recommended him to Chris Kraft , who was by then director of Johnson Space Center . In 1973 , Lunney became manager of the Apollo Spacecraft Program Office , a position which gave him responsibility for the Apollo spacecraft used during Skylab missions , as well giving him more authority in his role as head of the ASTP .

The ASTP mission took place in July 1975 . It was criticized by some journalists as a " costly space circus " , who felt that it wasted NASA funds that could have been better spent on projects such as Skylab . However , Lunney supported the project , saying in a later interview that he did not believe the cooperation necessary to build the International Space Station would have been possible if ASTP had not laid the groundwork for it .

= = = Space Shuttle = = =

After the ASTP mission was completed , Lunney became manager of the Shuttle Payload Integration and Development Program . During this period , it was anticipated that NASA 's space shuttle fleet would be flying very frequent missions , and carrying commercial payloads as well as flying missions for government organizations such as the Department of Defense and the Jet Propulsion Laboratory . The payload integration program was responsible for determining how the various demands of these customers could be satisfied , and how mixed payloads could best be physically accommodated within the cargo bay of the shuttle . During these years Lunney also spent time working at NASA Headquarters in Washington , D.C. , as Deputy Associate Administrator for

Space Flight and later as Acting Associate Administrator for Space Transportation Operations .

In 1981 , Lunney became manager of the space shuttle program , a high @-@ level position where Lunney found himself responsible for setting the agenda for the developing program . His responsibilities were broad ones ; they included supervising program planning , budgeting and scheduling ; systems engineering ; and mission planning . During the earlier shuttle flights he was even involved in determining whether the weather was suitable for launch , but in later years that responsibility was largely devolved to lower levels of the hierarchy .

Many of his colleagues had expected Lunney to succeed his mentor , Chris Kraft , as director of Johnson Space Center ; Neil Hutchinson , a fellow flight director , later commented that Lunney " was sort of the anointed one " . However , when Kraft retired in 1982 , former Apollo flight director Gerry Griffin was offered the position instead .

In 1985 , Lunney decided to leave NASA , feeling that the shuttle program had worn him out physically and mentally and that he was ready for a new type of challenge . Although he had retired from NASA the year before , he was called to testify before the U.S. House Committee on Science and Technology in the aftermath of the Challenger accident . While still manager of the shuttle program , he had signed the " Criticality 1 " waiver that allowed Challenger to launch even though the joints of its solid rocket boosters had recently been redefined as non @-@ redundant systems . His actions were not unusual in the context of NASA practice at the time , which allowed a " walk through " of such potentially controversial waivers if no debate was expected .

= = Career at Rockwell = =

Upon leaving NASA in 1985 , Lunney took a position at Rockwell International , the contractor responsible for the construction , operation and maintenance of the space shuttle . At first he worked in California , managing a Rockwell division that was building satellites for the Global Positioning System ; this was his first experience with unmanned spacecraft . In 1990 , he returned to Houston as President of the Rockwell Space Operations Company , which provided support for flight operations at Johnson Space Center and employed about 3000 people . For Lunney , this represented a return to his roots in mission operations , which he had left twenty years before .

In 1995 , Rockwell joined forces with its competitor Lockheed Martin to form the United Space Alliance , a jointly owned organization created to provide operations support for NASA , as well as to take over some of the functions previously performed by NASA employees . At this point , Lunney became Vice President and Program Manager of the United Space Alliance 's spaceflight operations in Houston ; he stayed in this position until his retirement in 1999 .

= = Personal life = =

While at Lewis Research Center , Lunney met Marilyn Kurtz , who worked there as a nurse . They have been married since 1960 and have four children : Jennifer , Glynn , Jr . (Distinguished Professor of Law at Tulane University) , Shawn , and Bryan . Their youngest son Bryan has also pursued a career at NASA , becoming a flight director in 2001 and working missions including STS @-@ 115 , STS @-@ 120 , STS @-@ 123 , STS @-@ 131 and STS @-@ 133 .

During his leisure hours , Lunney enjoys sailing ; during the sixties the family owned a twenty @-@ foot sailboat which they took out on Galveston Bay , and he occasionally dreamed of going with his wife and children on an ocean cruise lasting for months . In his retirement he has taken up golf , saying that " I have come to realize that golf will never be mastered , but will continue to be humbling . "

= = Awards and honors = =

Lunney is a Fellow of the American Astronomical Society and of the American Institute of Aeronautics and Astronautics . In 1971 , he was awarded an honorary Doctorate from the University of Scranton . He has received many awards from NASA , including three Group Achievement

Awards , two Exceptional Service Medals and three Distinguished Service Medals .

In 2005 , he received the National Space Trophy from the Rotary National Award for Space Achievement Foundation . The award is given to individuals who have made an outstanding and career @-@ spanning contribution to America 's space program . Previous winners have included Chris Kraft and Neil Armstrong . " Lunney 's innovation and dedication to the U.S. space flight program " , said the RNASA Advisor General , " has set a standard for current and future generations of space explorers . As a manager , he inspired his employees to do their best work and offered direction and encouragement to his team when challenges arose ; as an explorer , he always looked toward the future and saw the endless possibilities and benefits of man 's journey into space . "

In 2008 he received the Elmer A. Sperry Award , jointly with Thomas P. Stafford , Aleksei A. Leonov and Konstantin D. Bushuyev , for their work on the Apollo @-@ Soyuz mission and the Apollo @-@ Soyuz docking interface design .

= = In films = =

In the movie Apollo 13 , Glynn Lunney was portrayed by Marc McClure . However , McClure had a relatively minor role . Writer Charles Murray lamented the fact that Lunney was " barely visible in the movie " , being overshadowed by the focus on Lunney 's fellow flight director Gene Kranz . " Without slighting Kranz 's role " , Murray commented , " the world should remember that it was Glynn Lunney ... who orchestrated a masterpiece of improvisation that moved the astronauts safely to the lunar module while sidestepping a dozen potential catastrophes that could have doomed them . "

Lunney has been interviewed in numerous documentaries about the space program , including Apollo 13 : To the Edge and Back (PBS) , To the Moon (PBS) , Failure is Not an Option (History Channel) and ABC News 20 / 20 's Moment of Crisis : Apollo 13 .

= = Select publications = =

Lunney , G. S. and K. C. Weston . (1959) . " Heat @-@ Transfer Measurements on an Air @-@ Launched , Blunted Cone @-@ Cylinder Rocket Vehicle to Mach 9 @.@ 7 . " NASA @-@ TM X @-@ 84 . Cleveland , Ohio : NASA Lewis Research Center .

Lunney , G. S. , L. C. Dunseith , and J. F. Dalby . (1960) . " Project Mercury : Methods and Pertinent Data for Project Mercury Flight Computing Requirements . " NASA @-@ TM @-@ X @-@ 69335 . Hampton , Virginia : NASA Langley Research Center .

Lunney , G. S. (1964) . " Launch @-@ Phase Monitoring . " In Manned Spacecraft : Engineering Design and Operation . Ed . Paul E. Purser , Maxime A. Faget , and Norman F. Smith . New York : Fairchild Publications , Inc .

Lunney , G.S. (1967) . " Summary of Gemini Rendezvous Experience " (PDF) . AIAA Paper 67 ? 272 . Cocoa Beach , Florida : American Institute of Aeronautics and Astronautics Flight Test , Simulation and Support Conference , 6 ? February 8 , 1967 .

Lunney , G.S. (1970) . " Discussion of Several Problem Areas During the Apollo 13 Operation " (PDF) . AIAA Paper 701260 . Houston : American Institute of Aeronautics and Astronautics 7th Annual Meeting and Technical Display , 19 ? October 22 , 1970 .