



Sigurd A. Sjoberg

SIGURD A. SJOBERG

1919–2000

Elected in 1974

*“For contributions to the advancement of
aeronautics and manned space-flight technology.”*

BY RICHARD H. TRULY

The president, aboard Air Force One en route to Honolulu to welcome back to earth the crew of Apollo 13, stopped in Houston for the Presidential Medal of Freedom ceremony. Astronauts Jim Lovell, Jack Swigert, and Fred Haise had just survived the harrowing explosion of an oxygen tank, crippling their spacecraft during the translunar phase of their lunar landing mission. Sig Sjoberg’s mission operations team, working around the clock with the Apollo 13 crew, brought them home alive.

As the National Aeronautics and Space Administration (NASA) director of flight operations at the Manned Spacecraft Center in Houston, Sig accepted the Medal of Freedom from President Richard M. Nixon on April 18, 1970, on behalf of the entire Apollo 13 mission operations team. On the platform were the Apollo 13 flight directors Gerry Griffin, Gene Kranz, Glenn Lunney, and Milt Windler, plus NASA Administrator Tom Paine. In part, the medal citation read:

We often speak of scientific “miracles”—forgetting that these are not miraculous happenings at all, but rather the product of hard work, long hours and disciplined intelligence. The men and women of the Apollo 13 mission operations team performed such a miracle, transforming potential tragedy into one of the most dramatic

rescues of all time. . . . The skill, coordination, and performance under pressure of the mission operations team made it happen. Three brave astronauts are alive and on Earth because of their dedication and because at the critical moments the people of that team were wise enough and self-possessed enough to make the right decisions.

In accepting the award, Sig was customarily brief:

Mr. President, all of us here at the Manned Spacecraft Center and indeed people throughout the country and world who had the opportunity to participate in Apollo 13 are extremely grateful for this award. Thank God for the return of the astronauts. Thank you.

Sigurd Arnold Sjoberg was born on September 2, 1919, in Minneapolis. His father and mother had immigrated from Sweden and were married in Minnesota; shortly after their arrival, his father, John Anderson, decided there were too many Andersons around and changed the family name to Sjoberg. The Sjobergs raised their three children, Ralph, Berneice, and Sig, as all knew him, during the Great Depression. Ralph followed in his father's footsteps to become a plumber; Berneice became an architect, moving later to California; and Sig entered the University of Minnesota to study aeronautical engineering. He was a senior there when the Japanese attacked Pearl Harbor.

Upon graduation in 1942 he moved to Virginia and joined the Langley Aeronautical Laboratory of the National Advisory Committee on Aeronautics (NACA), where he conducted research on advanced high-speed aircraft. His interests, particularly in the fields of aerodynamic stability and control and automatic stabilization, were put to very good use in the war years evaluating numerous military aircraft. His research and numerous technical reports earned him wide recognition as an expert in the field of aircraft handling qualities.

Sig met Elizabeth (Betty) Ludwig, who was born in New Jersey and also worked at Langley, and they were married on September 22, 1946, in Hampton, Virginia. Their best man was Jack Paulson, who also became a renowned engineer at

Langley. Sig and Betty had three sons: Eric S., born in 1948; Stephen L., 1950; and Robert J., 1954.

In the late 1940s Sig was temporarily assigned to the NACA High Speed Flight Station in Edwards, California, legendary home of the X-planes. His work on the X-1, X-1B, and X-2 led to his assignment as NACA project engineer on the Douglas D-558, after which he returned to Langley.

With his experience and renown, Sig was chosen to travel to France in the autumn of 1957 to evaluate several North Atlantic Treaty Organization European-built fighter aircraft. In October, as he was finishing up the evaluations, the Soviet Union stunned the world by launching the world's first satellite, Sputnik. The following year President Eisenhower signed the Space Act that created NASA and directed the new space agency to incorporate all the programs, facilities, and personnel of NACA. The Mercury Project was announced that same year.

At NASA Langley, the Space Task Group was formed to prepare for and operate Mercury and was headed up by Bob Gilruth, who had hired Sig into NACA in 1942 and was also an aeronautical engineer from the University of Minnesota. Gilruth brought Chris Kraft and Max Faget into the task group; later, all of them would be elected to the National Academy of Engineering.

In Gene Kranz' book *Failure Is Not an Option: Mission Control from Mercury to Apollo 13 and Beyond* (2009), he described his first meeting with Sig upon joining the Space Task Group in Langley:

I was taken immediately by his friendliness and sincerity. Just talking to him brought a smile, but as I listened to him I saw a depth, a passion, that frequently broke the surface like a trout taking to a fly.

NASA announced the selection of America's seven Mercury astronauts in March of 1959. Sig became the operations coordinator of the flight operations division and assistant to the chief of flight operations, his NACA friend of many years, Chris Kraft. Sig took on the challenge of integrating

telemetry data, launch support, spacecraft recovery, and range instrumentation between NASA and various aerospace contractors to create a support system for the project. He also worked on developing mission rules and procedures for each Mercury flight in the blockhouse control center at Cape Canaveral, where Kraft was NASA's first flight director. Sig and the Space Task Group team were inventing mission operations as they went, providing invaluable wisdom for what would come in the years ahead.

On May 25, 1961, President John F. Kennedy addressed a nationally televised joint session of Congress on "Urgent National Needs" in which he declared

I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth.

At the time of the speech, the Soviet Union had already flown Yuri Gagarin in earth orbit, while the fledgling NASA had struggled to keep up by launching Alan Shepard on his 15-minute suborbital flight. Sig later summed up the feelings of those in the Space Task Group about Kennedy's announcement in his NASA oral history: "We were floored."

Floored or not, the torrid pace picked up. Within the next two years, Mercury was a success and the newly built Manned Spacecraft Center (MSC) south of Houston replaced the Space Task Group. Sig moved to Houston, continuing as Kraft's assistant and as deputy of flight operations. Drawing on his experience with Mercury, he took over the technical and managerial leadership for the new Mission Control Center's conceptual design, development, and implementation. He also had a leading role in the formation of NASA's worldwide tracking, support, and recovery network, including the establishment of tracking stations and ships.

The two-man Gemini project followed Mercury and was a crucial stepping stone in the development of rendezvous and docking knowledge for the Apollo lunar landing effort to follow. Sig said in his NASA oral history that Apollo would not

have been possible without the accomplishments of Gemini. He would never have said that Gemini's accomplishments would not have been possible without his contributions. But it's true.

After the triumphant Apollo 11 lunar landing mission by Neil Armstrong, Buzz Aldrin, and Mike Collins in July 1969, Chris Kraft moved up to become the MSC deputy director and Sig took over as director of flight operations. During Sig's tenure, NASA flew the Apollo 12, 13, and 14 missions to the Moon. When Bob Gilruth retired from NASA in 1972, Kraft became director of the newly named Lyndon B. Johnson Space Center (JSC), with Sig as deputy director, a position in which he served until his retirement from NASA in 1979.

Sig's years as JSC deputy director saw a succession of successful space missions, a transformation of NASA and JSC, plus the engineering and space operations planning for NASA's future. Apollo was completed with the 15, 16, and 17 lunar missions. The Skylab space station flew three long-duration missions of 28, 56, and 84 days, and the Apollo Soyuz Test Project, a docking mission with the Soviet Union, plowed new ground in international cooperation, accomplished in the very depths of the Cold War. Perhaps most importantly, Sig's long experience was invaluable in overseeing the engineering and planning preparation for the Space Shuttle, a program that was to span more than three decades of NASA spaceflight.

After his retirement from NASA, Sig spent several years leading the Houston office of the OAO Corporation.

In addition to the Presidential Medal of Freedom, Sig received the NASA Distinguished Service Medal (1971), three NASA Exceptional Service medals (1967, two in 1969), the American Astronautical Society's Space Flight and William Randolph Lovelace II Awards (1977 and 1978, respectively), and the VFW National Space Award (1978). He was elected to the National Academy of Engineering in 1974, and received an honorary doctor of science degree from DePauw University. He spent many years as the US delegate to the Fédération Aéronautique Internationale, which oversees international world records in aviation and spaceflight.

Sig Sjoberg, a revered aeronautical engineer, a pioneer in America's space program and former deputy director of the Johnson Space Center, died on March 26, 2000, in Clear Lake, Texas, at age 80.

Author's Note

In writing this tribute I relied on many sources, particularly from records of the NASA Johnson Space Center in Houston. A special thanks to Betty and Eric Sjoberg for their gracious help. Most of all, I depended on my memories of a great leader who it was my privilege to work for when he was deputy director of JSC. – Vice Admiral Richard H. Truly, US Navy (ret.)

