

# Project Pioneer: Leif “Jack” Sverdrup



Maj. Gen. Leif Sverdrup, USAR retired, once wrote in his column “Old Man’s Corner,” in his company’s newsletter, SPICE, that “it is not only old soldiers who never die. I believe engineers, more so, are in that category, for their monuments remain long after they are gone.”

Today, some 30 years after his death, the bridges and structures designed and constructed by General Sverdrup and his firm, stand as testaments to his engineering abilities.

Difficult to pronounce and almost as hard to spell, few names in the engineering world carry as much respect and clout as “Sverdrup.” His legacy includes the 17-mile-long Chesapeake Bay Bridge-Tunnel, named one of the “Seven Engineering Wonders of the Modern World” after its completion in 1964, the Bhumiphol Dam in Thailand and St. Louis’ Busch Stadium.

But it was one particular project – designing a complex of wind tunnels and other testing facilities at a new site for the Air Force – first discussed with him in 1946 that would firmly establish his company in this area.

Leif Johan Sverdrup was born on Ytre Sulen in Norway on Jan. 11, 1898. The son of a minister, first showed an interest in science when he was about 13, conducting experiments on a chemistry set in his parents’ basement.

At 16, he boarded the Kristianiafjord and left Norway for America. Arriving in New York Dec. 7, young Sverdrup took a train to Minneapolis and his Uncle George’s home. Two years later, he had earned enough money to begin Augsburg College in Minneapolis. He graduated in May 1918 with a Bachelor of Arts degree and later that summer, enlisted as a private in the U.S. Army.

During this period, the five-year residency requirement was waived for members of the armed forces, so on Sept. 30, 1918, he took an oath of allegiance and became a U.S. citizen. While in basic training, he received his certificate of naturalization. Eventually he gave up trying to teach people to pronounce his first name correctly – “Lafe” instead of “Leaf,” and asked his friends to introduce him as Jack Sverdrup.

In 1919, he obtained a commission as a second lieutenant in the Field Artillery, before opting to go into the inactive reserves, where he served two, five-year terms. In 1929, he was honorably discharged.

Meanwhile, in 1919, he decided to become an engineer and enrolled at the University of Minnesota. It was here that he first met Professor John Ira Parcel, his indeterminate structures professor who would later become his business partner.

After graduation from the University of Minnesota in 1921 with a Bachelor of Science degree in civil engineering, he took the first job he was offered – bridge inspector with the Minnesota State Highway Department. He spent a year in that job before moving to the Missouri State Highway Department.

But it would be a bridge in Hermann, Mo., that would prove the catalyst to propel a young Sverdrup into business success when, in 1927, he was selected to design a bridge over the Missouri River.

Leaving the Missouri State Highway Department, General Sverdrup started out on his own. However, he quickly realized that he needed a partner.

“I didn’t want to be alone,” he said. “I wanted a partner who was older than myself. Since I was not known in the technical world, John Parcel came to mind at once. I went to see him, and he agreed to come with me.”

Sverdrup & Parcel was officially founded April 1, 1928, as a civil engineering firm specializing in the field of bridges.

In October 1941, at the Army’s request, General Sverdrup took on a job that his firm had previously declined – developing airfields in the Pacific so American bombers could be flown to Gen. Douglas MacArthur for the defense of the Philippines. He then signed a contract to plan and design all the work in the Fiji Islands, New Caledonia, New Hebrides and the Solomons.

Two days after the attack on Pearl Harbor, MacArthur sent a message that he wanted Sverdrup & Parcel to handle all of his engineering work.

During this period, he relinquished all connections with his firm – no profits, salary or business communications. Three years later, in 1945, he was a major general, commander of all engineering forces in the southwest Pacific, chief engineer to General MacArthur and a national hero of the engineering fraternity.

During General Sverdrup’s absence, Sverdrup & Parcel entered the age of advanced technology by developing wind tunnels at Wright Field in Dayton, Ohio.

In 1946, Sverdrup & Parcel was presented with the possibility of designing a complex of wind tunnels and other testing facilities at a new site for the Air Force. The project was the Air Engineering Development Center, which later changed to Arnold Engineering Development Center, in memory of five-star General of the Air Force Henry Harley “Hap” Arnold.

Although the details of the job were staggering and Sverdrup & Parcel was a 50-man organization, Sverdrup felt the firm could meet the challenge, but left the decision to his partners.

On April 22, 1950, the Arnold Research Organization – or ARO – was incorporated solely for the purpose of managing, maintaining and operating the center.

Time magazine, in a story in its Aug. 7, 1950, issue titled “A Norseman Named Leif,” wrote:

“Last week the Air Force called Sverdrup to a bigger job. To ARO, Inc., a Sverdrup & Parcel subsidiary, it has the task of operating its \$100 million Arnold (for the late “Hap” Arnold) Engineering Development Center now abuilding at Tullahoma, Tenn. That was fitting enough; Sverdrup’s firm drew the plant’s blueprints five years ago.

“At the Tullahoma center, which will not be in complete operation until 1952, Sverdrup’s men will test life-size mockups of jets, turbojets and rockets under conditions simulating altitudes up to 75,000 ft. They will simulate conditions found at sea-level speeds up to 7,500 m.p.h. To Sverdrup thus went one of the key jobs in keeping the U.S. ahead in the race for technical supremacy.”

General MacArthur called General Sverdrup an “engineer soldier at his best” when he pinned the Distinguished Service Cross on him in 1945. Additionally, General Sverdrup was awarded the Distinguished Service Medal, the Silver Star, the Legion of Merit and the Purple Heart.

He earned military citations and medals from England, Australia and other nations, including Norway’s esteemed Order of St. Olaf.

After the war, he reactivated the 102nd (Ozark) Division of the U.S. Army Reserve. For his service as commanding general of the division from 1947 to 1958, the Army

added an Oak Leaf Cluster to his Distinguished Service Medal.  
Sverdrup died in 1976 and was buried with full military honors in Valhalla Cemetery in Hanley Hills, Mo.



The directors of ARO in a 1964 meeting are (from left) Dr. B.H. Goethert, Ed Moser, Bob Williams, Jack Sverdrup, E.R. Grant, Brice Smith Sr. and Steve Leo.



Jack Sverdrup stands in front of PWT during its construction in 1955. An article about PWT in an issue of SPICE, the Sverdrup newsletter, said “When the big wind leaves the nozzle, it rushes into and through the test section which is the heart of the tunnel. It’s a big heart too, for it is 16 feet by 16 feet in cross-section and some 40 more feet long. Here the models or actual aircraft parts and propulsion units will be subjected to the pressure of the transonic or supersonic winds. Here many measurements will be made with a great complexity of instruments.”



Jack Sverdrup and his wife Molly.



Eleanor Arnold, wife of General of the Air Force Henry "Hap" Arnold, and Jack Sverdrup stand in front of a portrait of the late general in 1955.