



John K. Northrop

JOHN KNUDSEN NORTHROP

1895-1981

BY WILLIAM R. SEARS

JOHN KNUDSEN NORTHROP, pioneer designer and manufacturer of aircraft, died at the age of eighty-five on February 18, 1981. He was an engineer in the finest tradition of the profession: innovator, inventor, leader and organizer of engineering teams, industrialist, and master of the art and science of design. He was one of the great pioneers of aviation and founder of the major aerospace company that bears his name.

Born in Newark, New Jersey, on November 10, 1895, Mr. Northrop attended high school in Santa Barbara, California. He never attended college, but received an honorary doctorate and founded a technical university. He began his engineering career in 1916 as a mechanical draftsman-engineer in the Laughead Aircraft Company. He learned structural design on the job, was called to Army service during World War I, and was sent back to Laughead by the Army for work on a flying-boat contract. In 1923 he joined Donald Douglas in the engineering design of the Douglas Aircraft Company's famous round-the-world biplanes. The engineering team that produced those airplanes was said to be a formidable one, with Jack Northrop responsible for structural details.

Later he rejoined Allen Lockheed (Laughead) in the new Lockheed Aircraft Company. Here he designed the remarkable *Vega* series of airplanes, characterized by monocoque fuselage and unusual aerodynamic refinement. A long series of record-breaking flights was made by many famous aviators in the Lockheed *Vega* and its

derivatives. He was “the designer” in days when that terminology was realistic.

In 1928 he founded the first of his own aircraft companies. Originally called the Avion Corporation, it became the Northrop Aircraft Corporation, a division of United Aircraft and Transport Corporation, in 1930. Here the Northrop *Alpha* and *Beta* were designed and built; they possessed the same kind of aerodynamic refinement as the *Vega*, but Jack Northrop was now working with stressed-skin metal structures instead of plywood. He originated many elements of the multicellular, stiffened-skin, metal wings that have become standard throughout the aeronautical world. The original *Alpha* now hangs in the National Air and Space Museum. The Northrop *Gamma* and *Delta*, which carried on these trends, were products of Mr. Northrop’s second company, founded in partnership with Douglas Aircraft in 1932. This was the company that later became the El Segundo Division of Douglas. Under Mr. Northrop’s direction until 1939, this division produced a long series of efficient and successful military aircraft.

In 1939 the present Northrop Corporation was founded. Its products were principally military aircraft, including the P-61 *Black Widow*, F-89 *Scorpion*, the giant XB-35 and YB-49 *Flying Wings*, and a number of other sophisticated and imaginative research aircraft. Donald Douglas, Sr., has said, “Every major airplane in the skies today has some Jack Northrop in it.” Mr. Northrop retired from active direction of the company in 1952 and was Honorary Board Member until his death.

John K. Northrop, the inventor, was awarded more than thirty patents during his career. His ingenuity was not limited to aircraft and aeronautics. In 1944 he became interested in the design of prosthetic devices for amputees, shocked by what he saw as the primitive and awkward products then available. He and his company were awarded a series of U.S. patents in this area. He invented a popular, lightweight anchor widely adopted by yachtsmen and is also given credit for the “hill-holder” device for automobiles and for techniques of welded-magnesium-alloy construction based on the helium-shielded arc.

Mr. Northrop was an Honorary Fellow of the American Institute

of Aeronautics and Astronautics, Fellow of the Royal Aeronautical Society of Great Britain, and was President of the Institute of Aeronautical Sciences in 1948. He was awarded the President's Certificate of Merit of the U.S.A., the *Spirit of St. Louis* Medal of the American Society of Mechanical Engineers, and the honorary degree Doctor of Science by Occidental College. He was elected to the International Aerospace Hall of Fame and the Aviation Hall of Fame. He was one of only three people to receive the Wings of Man Award of the Society of Experimental Test Pilots. He was Founder and Chairman of the Board of Trustees of Northrop Institute of Technology, accredited as Northrop University since 1976. He was elected to the National Academy of Engineering in 1979.

Mr. Northrop, as a Chief Engineer and company President, was clearly a co-worker with his fellow employees: cheerful, cooperative, respectful of their skills and their sensibilities, and always ready to shoulder his share of work. He was a gentleman of the highest personal and intellectual standards, courteous and quiet voiced. To all who worked with him, including several generations of military leaders, he stood as a symbol of character, modesty, ingenuity, and originality-an engineer's engineer.