Jerome Clarke Hunsaker

1886–1984

By Arthur E. Raymond

Jerome Clarke Hunsaker, who became widely known, admired, and influential as a result of his lifelong contributions to the field of aviation, died at his Boston home on September 10, 1984, at the age of ninety-eight. Jerry will long be remembered as a gentle, friendly man, as well as a superb teacher, engineer, and administrator. He was modest, urbane, clear-headed, and at experienced ease with almost all the important phases of his field, which encompassed research and the design, manufacture, and operation of airplanes, seaplanes, and rigid and nonrigid airships.

He was born in Creston, Iowa, in 1886 and was educated in the public schools of Detroit and Saginaw. He graduated from the U.S. Naval Academy at the head of his class in 1908, five years after the Wright brothers' first flight, which occurred when he was at the impressionable age of seventeen. After a year of sea duty, he was ordered to the Massachusetts Institute of Technology (MIT), where his interest in aeronautics became a passion, and he began a study of wind tunnels as a means of obtaining the basic data needed for successful flight.

He then journeyed to Paris and, with the help of his wife, the former Alice Avery, and Eiffel's assistants, he translated Eiffel's pioneering work in the testing of airplane models. When he returned to MIT in 1914, Jerome Hunsaker constructed
a forty-mile-per-hour tunnel and inaugurated the institute's first graduate course in aeronautical engineering. In 1916 he was awarded a D.Sc. for wind tunnel research on aerodynamical stability.

During his life, his interest in and knowledge about wind tunnels grew and broadened to cover other research tools. He was appointed by the president as chairman of the National Advisory Committee for Aeronautics (NACA), with its many laboratories; he remained there for sixteen years. His final major achievement, which was attained in 1967, was the supervision and construction of the Navy Supersonic Laboratory at MIT to study aircraft and missile designs involving speeds as high as two thousand miles per hour (a long way from his original forty-mile-per-hour tunnel).

In 1916 the Navy placed him in charge of the Aircraft Division of its Bureau of Construction and Repair, and he was soon responsible for the design, construction, and procurement of all naval aircraft. In 1918 Jerome Hunsaker was assigned responsibility for two special engineering projects—to build a Zeppelin and to build a flying boat to cross the Atlantic. The latter became known as the NC (Navy Curtiss) project, and four units were built. Three units began flights from Newfoundland in May 1919; two were wrecked near the Azores, but the NC-4, under Commander A. C. Read, continued on to Lisbon and Plymouth, the first crossing of the Atlantic by an aircraft of any type. The Zeppelin project resulted in the completion of the Shenandoah, the first rigid dirigible to employ helium as a lifting gas.

In 1921 Dr. Hunsaker was transferred to the newly organized Navy Bureau of Aeronautics, where he had an opportunity to realize practical results from the great accumulation of research and experimental data that had been obtained during the war. In 1923 he was detailed as assistant naval attaché at London, Paris, The Hague, Rome, and Berlin, remaining on duty until 1926, when he resigned to join the research staff of Bell Telephone Laboratories in New York as
assistant vice-president. While there, he developed wire and radio communication services for civil aviation.

In 1928 Dr. Hunsaker became vice-president of the Goodyear-Zeppelin Corporation, which had been formed to build the Akron and Macon airships for the navy. Following the completion of the airships, he returned to MIT as head of the Department of Mechanical Engineering and, later, the Department of Aeronautical Engineering. He retained the latter position until his retirement in 1952 at the age of sixty-eight, but held the title of lecturer for another five years. Until he was well into his eighties, he maintained an office at MIT, to which he walked from his home on Beacon Hill—a distance of nearly two miles.

His years at NACA, forerunner of NASA, were particularly important because of the standing and scope of that organization. NACA was an unparalleled asset to the country with its laboratories (Langley, Ames, and Lewis), experienced staff, and broad research program that became the original core of NASA, essential to the completion of the Apollo Program on schedule.

Dr. Hunsaker was elected to the National Academy of Sciences (NAS) in 1935 and was very active in academy affairs. In 1967 he was also elected to the National Academy of Engineering (NAE). Because his election came so near the end of his most energetic years, however, his interest in and activities with NAE never matched his involvement in NAS.

Jerome Hunsaker was the first president of the Institute of the Aeronautical Sciences, which later merged with the American Rocket Society to become the American Institute of Aeronautics and Astronautics (AIAA). In fact, Hunsaker teamed with Lester Gardner to become a major force in its formation in 1932. He became an honorary fellow of that organization and also of the Royal Aeronautical Society and the Imperial College of Science and Technology of Great Britain. He was also an honorary member of the American Society of Mechanical Engineers and the Institute of Mechanical
Engineers of Great Britain. In addition to his memberships in NAS and NAE, he was a member of the Society of Automotive Engineers, the Society of Naval Architects and Marine Engineers, and the American Philosophical Society.

His list of awards is long and impressive: Navy Cross (1919); Franklin Medal (1942); Medal for Merit (1946); Honorary Commander of the Most Excellent Order of the British Empire (1948); Legion of Honor (1949); Wright Trophy (1951); Godfrey L. Cabot Trophy (1953); Langley Medal (1955); Elder Statesman of Aviation, National Aeronautic Association (1955); Water-based Aviation Award, Institute of the Aeronautical Sciences (1957); NACA Distinguished Service Award (1957); Gold Medal of the Royal Aeronautical Society (1957); U.S. Navy Award for Distinguished Public Service (1958); and the Julius Adams Stratton Prize (1967).

He found time among his other activities to publish more than 130 papers—only a few of them jointly—and to supervise NACA's yearly annual reports (nos. thirty-three through forty-two). The section on aeronautics in the original Marks' Standard Handbook for Mechanical Engineers of 1916 bears his name.

A partial summary of his papers shows the breadth of his interests. The list begins with several papers on wind tunnels, but then moves on to such other subject matter as gas-tight airplane fabric, casein glue use in laminated construction, duralumin aluminum alloys, venturi airspeed meters, spruce airplane compression struts, similitude theory of aerial propellers, airplane rubber shock absorbers, airplane radiators, cavitation research, and a number of papers on static and dynamic stability. There were many papers written on dirigibles, including the blimp type that was used for patrols. Others dealt with biplanes, triplanes, dihedral wings, safety, communications, and, of course, the education and training of engineers, including curriculum surveys.

As time went on, his subjects broadened even further into titles such as "Forty Years of Aeronautical Research" and "A
Half Century of Aeronautical Development," as well as a number of biographical memoirs. His last memoir, written in 1967, is a biographical memoir and tribute to Hugh Dryden, his longtime right hand at NACA.

In addition to his professional life as a scientist, Hunsaker showed a keen interest and competence in business and public affairs. He was a director of Shell Oil Company, Goodyear Tire and Rubber Company, McGraw-Hill Publishing Company, Inc., and Tracerlab, Inc. He was also a regent of the Smithsonian Institution and a life trustee of the Boston Museum of Science.

Countless numbers of his MIT students in mechanical and aeronautical engineering from 1933 to 1952 have made their mark in the world. Most feel a tremendous debt of gratitude to Jerry Hunsaker as their teacher, mentor, and friend.